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Super Sonic Specifications

Capacity

Maximum Patrons per tub .....4 adults or 4 children
Maximum patrons per load.....8 adults or 8children
Maximum weight per tub.....400
Maximum weight per load.....1600
Maximum height limit .....80"
Maximum speed.....18 R.P.M.

Drive
5HP Motor AC

Power Requirements
110 volt/220 volt
Lights are 24 volt

Dimensions
Width 26'
Height 13'
Weight 4900

ASTM Requirements

ASTM F 770-93 & F853-98

1. Introduction

1.1 Name and model of attraction
Super Sonic
1.2 Picture of attraction

1.3 Description of attraction: size, length, height, weight

Width 26' diameter (set up)

Height 13' (with lights)

Weight 4900 lbs.

1.3.1 Brief description of action / amusement the ride was designed to provide

1.4.1 How do patrons enter?

There is a trained attendant at the entrance of the ride.

1.4.2 Motion of ride / patrons?

The supersonic ride that travels in a counter clock wise direction which passengers sit.

1.4.3 How do patrons exit?

Attendant should tell children to stay in seat at end of ride. At end of ride tell everyone to remain seated. Attendant will then remove pin from door and assist children off.

1.5 Listing of major components not furnished by manufacturer.

Fencing

1.6 Listing of major components required for operation and not furnished by manufacturer.

Fencing

Entrance Gate

Exit Gate

Foot pedal power to ensure attendant must be present during operation

Height Sign

Rules Sign

1.7 Data Plate information

Manufacturer: Amusement Devices & Mfg LLC.

303 East Street

Schaller, Iowa 51053

Ride Model: Super Sonic

DOM:

Ride Speed: up to-18 Variable speed

Direction of Ride: Counter Clockwise Motion

Maximum passengers per tub: 8

Maximum passengers per ride: 8

Maximum weight per tub: 400

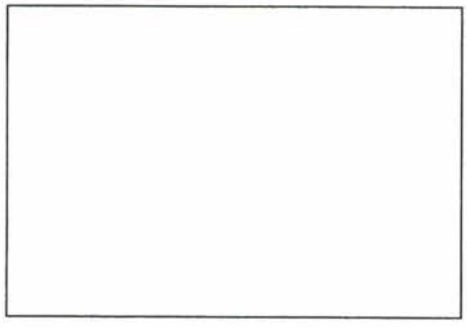
Maximum weight per ride: 1600

2. Set up

2.1.1 Site selection

Not Drawn To Scale

2.1.1 Area required: sketch of footprint
A= 26x26'



2.1.2 Power requirements
110 volt / 220 volt
Lights are 24 volt

2.1.3 Clearance from adjacent objects
Make sure to leave enough clearance from adjacent objects.

2.1.4 Levelness of site
Pick a location.

2.1.5 Warnings regarding overhead and underground utilities
Make sure overhead is clear of electric power lines and obstructions
Underground utilities do not apply

2.2 Resources required

2.2.1 Number of people recommended
Two staff members to set up, one to operate

2.2.2 Equipment
Hydraulic floor jack
Grease gun
Replacement seat belts

2.2.3 Special Tools
½ Socket
Allen wrench

2.2.4 Conditions restricting set up: wind speed (Do Not operate in wind above 25 MPH and rain (Do Not operate in rain)

2.3 Unpacking and layout

2.4.1 Orientation of entrance and exits

Make sure patrons understand where entrances and exits are

2.5 Blocking

2.5.1 Acceptable material

Use a piece of wood no less that 2x8x8 made out of a hard wood

2.5.2 Number and Location

Four blocks, one at each corner

2.5.2.1 Show sketch of picture

2.5.3 Levelness required

Select a suitable spot to operate the ride. The ground must be stable and as level as possible.

2.6 Sequence of erection / assembly

1) Pick a level location
2) Make sure overhead is clear of electric power lines and obstructions
3) Unlock from towing vehicle and remove tongue wiring harness
4) Remove fencing and fence holders
5) Drop corner leveling jacks, level pin secure
6) Remove tongue from trailer if the unit has the option
7) Remove tub from travel position
8) Remove all travel pins and hardware from location
9) Determine entrance location, exit location and operator station then set up fencing
10) Check all parts are properly pinned and locked with safety pins
11) Connect all electrical components
12) Test ride the unit –double check that all the removable parts are securely pinned, safely locked. Make sure all seatbelts, straps, and gates are properly secured
13) Safety check you unit periodically while you are operating, and before each start up

3.4.3 Rules of operation

No one should be allowed to operate your pirate's revenge without first reviewing completely this manual. Failure to comply with these rules o this manual can result in serious injury to both operator and passengers.

- Ride attendant must be present and alert at all times
- Attendant must be at control panel at all times
- Have passenger wear seatbelts
- Do not allow anyone stand up, or stand or sit on side of seat.
- Do not allow people to reach over fence to try to touch person on the ride
- If ride is not full, make sure it is balanced equally with passengers in the tub
- Attendant should tell passengers to stay in seat at end o ride. AT end of ride tell everyone to stop and remain seated until you get them.
- Any conduct by passengers that is deemed harmful, such hanging out legs or arms should be stopped immediately
- Attendant must be drug and alcohol free
- Attendant must adhere to capacity, weight and height limits at all times
- The maximum number of passengers is 8 per tub
- The maximum number of total passengers is 8
- Maximum passenger load per tub 400lbs
- Maximum passenger total load is 1,600lbs
- Minimum height requirement 36" with adult

3.4.4 Monitoring of environmental conditions

-Do not operate in rain or wind above 25MPH

-Make sure ground is stable and as level as possible

- Make sure ride is clear from overhead obstructions

- Make sure ride is clear from debris

3.4.5 Evacuation procedures

Recommended emergency procedures. All Super Sonic operators will be trained to handle any emergency that could exist on this device

See section 3.1.5 passenger unloading and egress

3.4.6Monitoring proper functioning

Inspections shall be performed to ensure proper functioning. Inspections shall be performed during pre-operation and during operation. Safety checks that all parts of unit, drive, and electrical are in proper working order. Visually inspect entrances and exits. Visually check all bearings and tubs and general inspection for anything amiss or out of place: loose bolts chains etc. The Super Sonic operator shall conduct a daily pre-opening inspection of each device under their control prior to opening. This inspection shall aid in the monitoring of proper functioning see page # 11 for Pre-operation inspection.

2.7 Completion Check list

Na-Not Applicable

Ok-Satisfactory

Un-Unsatisfactory

1) **Area clear from debris?**
2) **Free from utilities? (Above and underground)**
3) **Carabineeners Harness and clips sound (Cotter Pins)?**
4) **Any tripping hazard?**
5) **Moving parts free from obstruction?**
6) **Ride structure, walls and floor sound?**
7) **All nuts, screws and bolts tight and secure?**
8) **Seatbelts intact?**
9) **Is fencing secure?**
10) **All electric connections sound and wires sound?**
11) **Electric have GFI or proper grounding?**
12) **Ride base level?**
13) **Wheel chucks in place?**
14) **Fire extinguishers in place and working(generator only)**
15) **Safety signs posted?**
16) **Run Mechanicals unoccupied in place and working for one full cycle Does the ride operate as it should?**

Comments _____

_____

_____

3. Operation

3.1.1 Description of ride operation, including function and operation of major components

3.1.1.1 Description functioning and positioning of each

The operator will load the tub, and engage the ride or 3 minutes. Positioning is by the control panel facing the ride.

3.1.2 Passenger loading and seating

Let 8 patrons in a time,

Have passengers put on seat belts on then you check the seat belts. Don't allow anyone to stand up, or stand or sit on the side of the tub.

Do not allow people to reach over the fence or tub to try to and touch Person on the ride.

If ride is not full, make sure it is balanced equally.

3.1.3 Motion of the ride / passengers

The motion of the ride and passenger is back and forth motion.

3.1.4 Safety equipment restraints,breaking

3.1.4.1 Description operation and restraint system

The passenger restraints are based on the design intent of the ride With consideration given to height, speed, and forces on Passengers.The passenger restraint system is a single seat belt system.

Breaking not Applicable

3.1.5 Passenger unloading & Egress

Attendant should tell passengers to stay in seat at end of ride. At end of ride tell everyone to stop and remain seated until you get them. I you ever have to take a passenger off stop the ride and do so. Make sure all seat belts are on and check safety before starting the ride again. Direct them to the exit gate.

3.1.6 Description of control system with function of control devices. The control system is located within easy reach o the operator when the operator is in position to observe the ride while in operation. The control system is a 30amp switch in the control panel that is wired to a foot pedal that must be pressed to activate the motor. This ensures that operator must be present at all times of operation. It also allows or a quick shut down o the ride. The control system is designed to avoid unintentional activation.

3.1.7 Process or operation of ride cycle. The Super Sonic should run for a complete unoccupied cycle before opening. If any repair or maintenance resulting from any inspection is required it shall be completed before the Super Sonic can be opened for business. See Sequence o erection / assembly for set up section 2.6

3.2 Restrictions on rider: number, height, weight.

3.2.1 Maximum number of passengers

The maximum number of passengers is 8 per tub.

The maximum number o total passengers are 8.

3.2.2 Maximum passenger load

Maximum passenger load per tub is 400lbs.

Maximum passenger total load is 1,600lbs.

3.3 Restrictions on operators: age, physical capabilities.

The minimum age or an operator is 16 years of age. Check your own state regulations. Operator must be able to handle the physical requirements o operating this ride.

3.4 Training Information

3.4.1 Responsibilities of operator(s)

Each operator of the Super Sonic shall read and become familiar with the contents o this manual. This includes maintenance instructions and specifications. Based on the manufactures recommendations, each operator shall implement a program of testing, inspecting and maintaining this piece of equipment, keeping it in safe operating condition. This program shall include a checklist to be made available to each person performing maintenance on the machine. The operator's checklist should include the following. Descriptive of preventive maintenance assignments to be performed. Description of inspections to be performed. Special safety instructions where applicable. Any additional recommendations o owner / operator.

3.4.2 Periodic Inspections

The owner / operator off the Super Sonic shall provide shall provide training for each person performing the regularly scheduled maintenance on the machine pertaining to their assigned duties.

See Maintenance Schedule Page 16.

3.4.7 Instructions to patrons

Recommended information should be made available to each patron of the ride or device. Each patron should be informed to keep seatbelt tight at all times and remain seated at all times and to keep hands and arms inside the tubs. The patron should be informed to remain seated at end of ride until you can assist them off.

3.5 Signage requirements: rider conduct rider restrictions

- This is a participatory ride. You must observe all rules and follow all instructions given by operator.

The following should be posted in plain view of the operator and patron.
-Do not ride this ride if you have any known medical conditions that might adversely affect your enjoyment or physical condition I.e.: pregnancy, high blood pressure, bad back etc.
-Follow all recommendations on capacity, weight and height restrictions.

3.6 Environmental conditions limiting operation (temperature, wind, rain, etc.)

3.6.1 When are riders to be evacuated?

Riders are to be evacuated if it is raining or winds reach 25 MPH

3.6.2 When is a ride to be dismantled?

A ride is to be dismantled if severe storms arrive. Winds reaching hurricane conditions will warrant the ride to be dismantled.

3.6.3 When is a ride to be removed from premise?

A ride is to be removed from the premise when environmental conditions reach dangerous situations such as hurricane conditions.

3.7 Evacuation procedures.

3.7.1 Sequence for evacuation

Sequence for evacuation will follow 3.1.5 Passenger unloading and egress

3.7.2 Number of personnel required

One operator is required to perform evacuation procedures.

3.7.3 Tools Required

Not applicable

3.9 Operational Test

The manufacturer of a ride or device shall develop specific operational tests Along with minimum intervals for these tests to be performed that will allow The ride to determine whether the ride is operating within pre-scribed Operational limits.

All operational tests, except those necessary recommended subsequent to the Sale because of information not reasonably available to the manufacturer at The time of sale, should be recommended at the time of sale. All tests, whether

Recommended and the time of sale or subsequent tests shall meet the Following criteria:

All tests shall have been satisfactorily performed by the manufacturer Prior to sale.

The test must be such that the ride can reasonably expected to pass During the expected design life, assuming recommended maintenance and Operative procedures have been followed.

All tests must be reasonable and such that the owner/ operator can Reasonably be expected to be competent to perform or cause to be performed.

Any operational test including load testing performed on an amusement ride Shall be completely non-destructive in nature. Overload testing exceeding the Above limits shall be deemed inappropriate.

Any installation or operational testing conducted on an amusement ride shall Be accomplished within the rated limits of the information provided by the Manufacturer.

3.10 Emergency procedures

All Super Sonic operators will be trained to handle any emergency that Could exist on this device. The operator will turn off power from the ride and

Instruct patrons what to do according to the emergency. This could be an Evaluation of the ride or a situation to remain seated.

-Use of ride emergency power equipment. Not Provided

-Description of any emergency procedure because of loss of power N/A

4. Maintenance

4.1 Describe function and operation of major components, including brakes

Anti-rollbacks, drive system, patron restraints etc.

The drive system is the electric motor which operates the hydraulic pump Which causes the ride to move. Drive system see page 17

Restraint system is a single seat belt system.

Brakes N/A

4.1.1 Cleaning

Remove all loose debris from trailer, motor areas.

4.1.2 Lubrication

4.1.2.1 Drawings / sketches / showing lubrication points (see page 25)

4.1.3 Schedule of frequency for each point

Check grease in main hub assembly every 100 hours of service

Keep chain lubricated on a routine basis every 25 hours of service.

4.1.4 Lubrication Specifications

The primary purpose of lubrication is to establish a load carrying film On the component parts of the bearings so the metal contact is avoided Between rolling elements. Lubrication also acts as an inhibitor to corrosion and assists in the sealing process. Appropriate lubrication selection must be bases on the critical criteria (speeds, loads, temperatures, etc) of the bearing application.

For recommended lubricants see page 26

4.1.5 Periodic inspections

4.1.6 Inspections to be performed

See Pre-operational inspection on page 11

See maintenance schedule page 16

4.1.7 Frequency of Inspections

Maintenance schedule should be done before opening ride

Pre-operational inspections should be done before operating ride.

4.1.8 Wear limits for consumable products

Seat belts should be replaced if worn or broken

All hardware including bolts, screws, pins, latches etc shall be replaced if shows signs of wear.

4.5 Non Destructive Test Plan

Ndt test should be performed every 3 years or 250 hours of service.

4.6 Specification for fasteners

Always replace any worn or defective fasteners and make sure proper size is used.

See pages 18-20 or specifications

4.7 List of drawings (including pneumatic, hydraulic & electrical)

Pneumatic components not to exceed component ratings see page 22

Hydraulic components and fluids shall conform to SAE standards or equivalent page 23 – 24

4.8 Preparation for extended non-operational storage

All bearings should be covered and kept dry.

Electronic motor and hydraulic pump should be covered and kept dry.

Control panel and wiring should be kept dry.

4.9 Restrictions and special procedures that may be necessary because of environmental conditions

5 Take down & stowage

5.1 Sequence for disassembly and packing

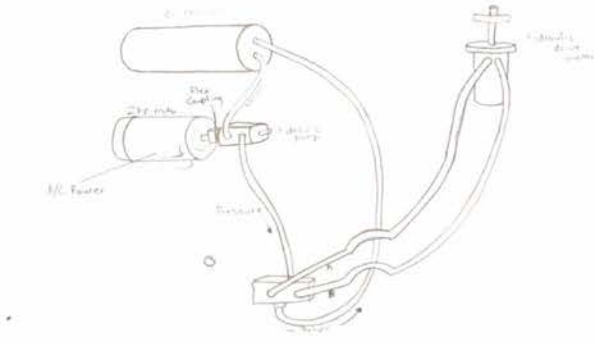
1. Stop the ride parallel to trailer
2. Make sure locking tabs are on passenger side
3. Install transport locks
4. Install fence and railing racks
5. Raise leveling legs to transport position
6. Rack railings
7. Load control station to locking point in center of trailer
8. Unhook all electric power and shut breakers off
9. Load all fence on proper racks and stow fence feet
10. Check all parts, that they are properly pinned and locked with safety devices.

5.2 Securing for transit

1. Raise all corner legs and secure with pins and r-keys
2. Hook up tow vehicle and pivot jack for transport
3. Hook trailer lights and break-away cables
4. Hook up tow chains
5. Check tire pressure and lug nuts
6. Lubricate bearings and spindle periodically

6. Bulletins from manufacturer;

Bulletins from the manufacturer must be followed if posted or sent to Pirates Revenge owner/operator



HYDRAULIC SYSTEM SCHEMATIC

USE DEXTRON FLUID TO FILL THE SYSTEM (3-GALLON)

3.8 PRE-OPERATIONAL CHECKLIST

Description of the recommended daily pre-opening inspection to be performed by Ride operators and attendants that is in addition to maintenance or other Inspections.No inspections are required other than those described in the Maintenance on page 16 and pre-operational check list below.

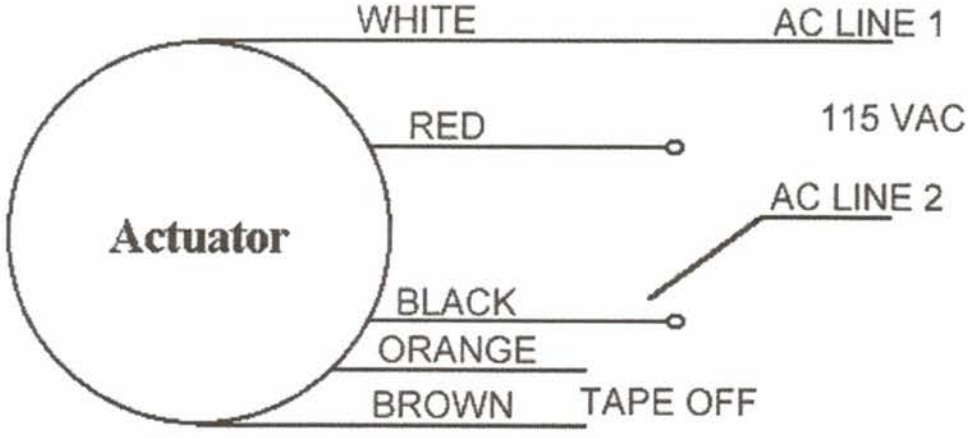
SUPER SONIC PRE-OPERATIONAL INSPECTION
MANUFACTURER; AMUSEMENTS UNLIMITED INC

Location_____
Weather conditions_____
Wind speed_____
Date_____
Team leader_____

n/a not applicable
ok satisfactory
un unsatisfactory

20. AREA CLEAR OF DEBRIS_____
21. FREE FROM UTILITIES?(ABOVE & UNDERGROUND)_____
22. CARABINEENERS HARNESS AND CLIPS SOUND(COTTER PINS)_____
23. ANY TRIPPING HAZZARDS_____
24. MOVING PARTS FREE FROM OBSTRUCTION_____
25. RIDE STRUCTURE,WALLS AND FLOOR SOUND_____
26. ALL NUTS,SCREWS AND BOLTS TIGHT AND SECURE_____
27. SEAT BELTS IN TACT_____
28. IS FENCING SECURE_____
29. ALL ELECTRIC CONNECTIONS SOUND AND WIRES SOUND?_____
30. ELECTRIC HAVE GFI OR PROPER GROUNDING_____
31. RIDE BASE IS LEVEL_____
32. WHEEL CHUCKS IN PLACE_____
33. FIRE EXTINGUISHERS IN PLACE AND WORKING ORDER(GENERATER ONLY)_____
34. SAFETY SIGNS POSTED_____
35. RUN MECHANICALS UNOCCUPIED FOR ONE FULL CYCLE
    DOES THE RIDE OPERATE AS IT SHOULD
    COMMENTS_____

    INSPECTED BY_____



CONNECT THE WHITE & BLACK LEADS TO 115 VAC TO EXTEND. CONNECT THE WHITE & RED LEADS TO 115 VAC TO RETRACT. ORANGE & BROWN LEADS ARE NOT USED AND CAN BE TAPED OFF.

Initial Inspection and Handling

- After opening carton, look for concealed damage. If concealed damage is found, immediately tile claim with carrier.
- Check the nameplate to verify that data conforms to specifications of motor ordered.

WARNING: *Eyebolts are intended for lifting motor only and must not be used to lift any other weight or attached equipment such as a pump or gearbox. Lifting and handling in the U.S.A. must be in accordance with Nema-MG-2.*

DANGER! *High voltage and moving parts around motors and motor driven equipment can cause serious or fatal injuries. Always disconnect power source before working on a motor or its connected load. Installation must conform to all OSHA requirements and then national Electrical Code (NEC) in the United States, and all local codes.*

Electrical→ Motor must be securely and adequately grounded by wiring with a grounded metallic conduit, or other grounding method approved by the NEC and local codes. Insulate all connections carefully to prevent grounding or short circuits. Reinstall all conduit and terminal box covers. Do not force connections into the conduit box.

Thermal Protection→ Use thermally protected motors or a motor starter incorporating thermal overload protection wherever required by safety regulations such as NEC or Underwriters Laboratories (UL) Standards in the United States, or where overloading, jamming, or other abnormal operating conditions may occur. Under low temperature conditions, manual reset protectors may reset automatically, causing motor to start unexpectedly. **Always disconnect power before working on equipment.**

Mechanical→ Guard ALL moving parts. Remove the shaft key before running the motor without a connected load. Be careful when touching the exterior of an operating motor! Motor may be hot enough to be painful or cause injury. This condition is normal for most motors when operated at rated load and voltage. Do not use the motor in a hazardous location [as defined by Article 500 of the National Electrical Code (NEC)] unless labeled for that location.

Storage→ Motor should be stored indoors in a clean, dry location.

Location

- **Open, Drip-proof Motor-** Clean, dry locations with access to an adequate supply of cooling air.
- **Totally Enclosed Motor-** Hasher environments where damp and dirty conditions may exist. Totally enclosed motors are not water-proof.
- Use only UL listed **Hazardous Location** motors for service in **Hazardous Locations** (as defined in Article 500 of the NEC).

- Temperature around the motor (ambient) should not exceed 104*F (40*C) unless motor nameplate states otherwise. Minimum temperature is –20*F (-29*C).

CAUTION: *Not for fans in unattended areas. Refer to the following for proper thermal protection and other motor selection information.*

UL 507 STANDARD- FANS FOR USE IN UNATTENDED AREAS (PARAGRAPHS 125&126)

Any motor used in a fan product, such as bathroom exhaust fans, wall-insert fans, ceiling-insert fans, attic exhaust fans, whole house fans and duct fans, etc., which are built into or within the building structure and which are likely to operate unattended or in situations in which the operator may not detect a locked rotor (stalled motor) condition must have either a manual reset thermal protector or a thermal cut-off (one-shot) device. Range hoods, circulating fans, pedestal fans and ceiling suspended fans are not included. Agriculture fans are included, if they are built into the building structure and are likely to operate unattended or in situations in which the person operating the fan may not detect a locked rotor (stalled motor) condition.

Power Source

- Voltage, frequency and phase of the power supply must correspond to that shown on the motor nameplate. Lower voltage can reduce performance and cause overheating.
- Line voltages on all three lines should be balanced within 1%. Unbalanced voltages cause motor overheating and poor performance.

Motor Control Devices

- Use of a suitable motor starter, either manual or magnetic, incorporating thermal overload protection is advisable and usually required by local electrical codes.
- Power supply must have fuses or circuit breakers to provide short circuit protection for the motor and controller.
- Follow the control manufacturer's recommendations on overload heater selection or setting. If an existing controller is to be used with a replacement motor, new heaters may be required.

Motor Mounting

Motor must be securely fastened to a rigid, flat surface to prevent vibration and minimize noise. For secure mounting use high quality bolts of the largest possible diameter.

Belt-driven sheaves must be in-line. Use a straight edge to check. Do not over-tighten belts.

Direct-coupled installations require a careful check of shaft and coupling alignment, shaft offset and/or angular misalignment should be less than .002". Shim motor base as necessary. Do not depend on a flexible coupling to compensate for misalignment.

TRAILER TIRE SPECIFICATIONS

Proper wheel selection is a very important component of your trailer gear system. When replacing your trailer tires/rims it is critical that the proper size and load range be selected in order to match the load requirements of the trailer. The following characteristics are extremely important and should be thoroughly checked when replacing trailer tires.

- TIRE CONSTRUCTION TYPE - Bias Ply vs. Radial
- TIRE APPLICATION TYPE - (ST) Special Trailer vs. (P) Passenger Car
- TIRE SIZE - % of section height / section width Refereed to as 'Aspect Ratio'
- TIRE LOAD RANGE - Load carrying capacity and air pressure rating
- RIM SIZE - Diameter and width must match tire
- RIM BOLT CIRCLE - Diameter of bolt circle must match hub

Quite often consumers are uncertain how to read or interpret specifications on a tire side wall. This problem is compounded by the Trailer Tire Industry's use of three different size identification systems on trailer tires. The following are examples and explanations of tire code.

- THE NUMERIC SYSTEM - (4.80 X 8) mostly used on smaller trailer tires, indicates the tire section width (4.80"), and the rim diameter (8")
- THE ALPHA NUMERIC SYSTEM - (B78 X 13 C) common on 13"-15" trailer tires, indicates air chamber size (B), the 'Aspect Ratio' (78), the rim diameter (13"), and the load range (C)
- THE METRIC SYSTEM - (ST205 75D 15) currently being phased in by trailer tire manufacturers, indicated the tire application type (ST-special trailer), the section width (205mm), the 'Aspect Ratio' (75), the construction type (D= bias ply), and rim dia.(15")

TRAILER WHEEL BOLT CIRCLE MEASUREMENT

Proper rim selection is also important to assure replacement wheels will match your existing trailer hardware. Be certain to match your wheel 'bolt circle' pattern to the axle hub. The bolt circle is determined as follows:

TIRE LOAD RANGE

Tire 'load range', or the maximum weight each tire can safely support, must be considered when selecting the proper size tire for your application. The load range and maximum weight capacity are indicated on the tire side wall.

- LOAD RANGE B = OLD 4 PLY RATING
- LOAD RANGE C = OLD 6 PLY RATING
- LOAD RANGE D = OLD 8 PLY RATING

WHY 'ST' SPECIAL TRAILER TIRES?

Eastern Trailer carries a full line of nylon bias ply trailer tires. These 'Special Trailer' (ST) tires have been constructed for better high speed durability and bruise resistance under heavy loads.

Trailer tire construction varies substantially from automotive tires, therefore it is essential to choose the correct tire for your towing application. In general, trailer tires have the same load range (or ply) from bead to bead and are bias ply construction. This allows for a stiffer side wall which provides safer towing by helping to reduce trailer sway problems. The use of 'Passenger Car' (P) or 'Light Truck (LT) tires a on a trailer is not recommended because their construction, usually radial or bias belted, allows for more flexible side walls. This could lead to increased trailer sway and loss of control.

Tire 'inflation pressure' is also an important factor in proper handling as well as tire life. Maximum inflation pressure is indicated on the tire side wall and should always be checked when the tire is cold before operation.

Finally, an important safety procedure is to apply and maintain proper 'lug torque'. Too little torque may cause the wheel to wobble or fall off. Wheel nuts/bolts should be torqued after each wheel removal, retorque after 50 miles and frequently thereafter. Follow the manufacturers recommended torque pattern:

Use 60 cone angle zinc plated nuts or lug bolts initially tighten to 12-20 ft. lbs. using a cross tightening sequence (1,3,2,4 or 1,3,2,5,4). Finish torquing to 70-80 ft. lbs. (NOTE: Nuts and studs should be clean, dry and not lubricated.) Retorque after 50 miles of use and frequently thereafter.

TECHNICAL INFORMATION
TRAILER TIRE SPECIFICATIONS

Proper wheel selection is a very important component of your trailer gear system. When replacing your trailer tires/rims it is critical that the proper size and load range be selected in order to match the load requirements of the trailer. The following characteristics are extremely important and should be thoroughly checked when replacing trailer tires.

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Proper rim selection is also important to assure replacement wheels will match your existing trailer hardware. Be certain to match your wheel 'bolt circle' pattern to the axle hub. The bolt circle is determined as follows:

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WHY 'ST' SPECIAL TRAILER TIRES?

nuts/bolts should be torqued after each wheel removal, retorque after 50 miles and frequently thereafter. Follow the manufacturers recommended torque pattern:

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JOB QUALIFICATIONS – RIDES & ATTRACTIONS

1. Must be in sufficient physical and mental condition to perform the following:
    a. Open and close passenger lap bars and restraint mechanisms
    b. Dismantle a variety of carnival rides and attractions
    c. Assis customers on and off steps, ramps, walkways and aisles
    d. Lift children from ground level to rides and unload them
    e. Perform tasks in the course of the foregoing that may require lifting heavy ride parts and equipment
        (1) 75 pounds to below shoulder level
        (2) 50 pounds above shoulder level
2. Must be capable of holding, gripping and handling pieces of equipment necessary to the ride or attraction during erection, dismantling or operation
3. Must be capable of repetitive movement of hands to assist others in assembly, operation, or dismantling of rides and attractions
4. Must be capable of assisting guests on and off rides and to operate hand controls to start, operate and stop the ride as necessary
5. Must be capable of working under direct supervision, taking directions, and cooperating with others at the job site
6. Must have the ability to observe the ride in motion, paying particular attention to customer activity while seated and to visually perceive incident-producing situations before they occur. Must have sufficient hearing acuity to hear sounds of the ride in motion, to hear fellow employees working around the ride (possibly out of sight) and to hear customers as they participate on the ride itself
7. Must have good verbal communication skils and exhibit the ability to deal with the public in a polite, professional manner
8. Must possess good personal grooming and cleanliness habits and adhere to strict company dress or uniform codes
9. Must be capable of working for periods of time in confined areas among other employees
10. Must be capable of working in an environment of varying temperatures and, at times, in direct sunlight
11. Must be willing to work varying hours and different shifts; including evening and weekends

Amusement Ride Training Log

AMUSEMENT COMPANY Owner:

NAME OF EMPLOYEE ______________________________ SOCIAL SECURITY ________________

The persons listed below have successfully completed the training, as indicated by the date of completion and trainer's initials in the appropriate column, as required for compliance with ASTM standards. The trainers who conduct the training also meet the requirements of ASTM standards and are certified by this company to conduct training, supervise, and observe the inspections and operations of the devices / attractions listed below.

______________________________ ____________

Signature of owner/operator Date

NAME OF DEVICE OR ATTRACTION	Personnel have been instructed and trained in the duties and procedures listed below.			Personnel have been supervised and observed successfully performing the duties listed below.		**NAME OF TRAINER**
DEVICE / ATTRACTION MANUFACTURER	Inspection & preventive maintenance procedures	Specific duties for assigned position(s)	General Safety & Emergency Procedures	Demonstration of performance of assigned duties & inspections	Demonstration of performance inspect. & maint. Duties of assigned position	
NAME OF DEVICE / ATTRACTION MANUFACTURER	DATE/TRAINER	DATE/TRAINER	DATE/TRAINER	DATE/TRAINER	DATE/TRAINER	
NAME OF DEVICE / ATTRACTION MANUFACTURER	DATE/TRAINER	DATE/TRAINER	DATE/TRAINER	DATE/TRAINER	DATE/TRAINER	
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NAME OF DEVICE / ATTRACTION MANUFACTURER	DATE/TRAINER	DATE/TRAINER	DATE/TRAINER	DATE/TRAINER	DATE/TRAINER	

CLOSING PROCEDURES – ALL RIDES

At the determined time, a signal will be given to the operator to close their ride. The following is a list of guidelines that should be completed after the closing signal is given:

1. When the closing signal is given, the operator should complete the ride cycle and then unload the ride, making sure there are no guests remaining.

2. After this check has been made, the operator should pick up all loose trash and debris from the ride area and platform.

3. Instruct the operators to inspect and either report or correct damaged, lost or worn parts that are unsafe or that can develop into unsafe parts, during assembly or disassembly. Fill out any maintenance request forms and turn them into the supervisor or the office.

4. When all closing chores are completed, turn off all lights and power switches, securing the ride for the night, per your internal procedures.

5. Before leaving the ride area, make sure all gates and doors are closed and secure.

If this effort is put into closing the ride every evening, the effort and work required to open the ride the next day will be greatly reduced.

Thank you for making our reputation one of "Safety and Cleanliness". We depend upon each operator to help us maintain our standards.

INSPECTION PROCEDURES

Upon the completion of all rides comes the inspection process performed by the controller.
Should any defects be found and this defect would interfere with the correct and safe operation and/or set-up of the ride, the ride is disassembled.

SUSPENSION

Dura-Flex Suspension

Manufactured by Henschen Industrial

The DURA-FLEX rubber torsion suspension system is a torsion arm type suspension which is completely self contained within the axle tube. It attaches directly to the trailer frame using brackets which are an integral part of the axle assembly.
The wheel/hub spindle is attached to a lever, called the torsion arm, which is fastened to the rubber encased bar. As load is applied, the bar rotates causing a rolling/compressive resistance in the rubber cords. This action provides the same functions as conventional sprung axles with several operating advantages including independent suspension.

Maintenance

Except for periodic inspection of the fasteners used to attach the DURA-FLEX axle to the vehicle frame, no other suspension maintenance is required on DURA-FLEX axles.

SWIVEL JACK

Operation

Model 6400, Manufactured by Dutton-Lainson Company

To stow jack (rotate the jack from vertical to horizontal), first remove any load on the jack.

1. Crank handle counter-clockwise to retract.
2. Pull out on the swivel handle/locking pin and rotate jack to stowed (horizontal) position. Be certain the swivel handle/ locking pin completely re-engages the swivel plate.

To engage jack (rotate the jack from horizontal, stowed position to vertical, operating position):

1. Pull out on the swivel handle/locking pin and rotate jack to operating (vertical) position. Be certain the swivel handle/ locking pin completely re-engages the swivel plate.
2. Extend jack by cranking jack clockwise.
3. When jack reaches the end of its travel, do not force handle. To do so will result in damage.

Important: *When maneuvering trailer with weight on the jack, keep the jack cranked to the lowest possible position to avoid unnecessary strain. Avoid rolling the jack over rough or soft surfaces.*

CAUTION: ***Use of the jack without the swivel handle / locking pin completely engaged could result in the trailer tongue suddenly dropping.***

Maintenance

Protect the plated finish of exposed parts by keeping jack clean and periodically applying a coating of wax.

Lubrication

With weight off the jack:

1. Remove gear cover clip and remove gear cover by carefully prying open both sides at the same time.
2. Remove pin holding bevel gear to top of screw.
3. Carefully remove inner tube assembly. Do not attempt to remove screw from inner tube.
4. Lubricate screw by working grease into entire thread.
5. Reassemble inner tube assembly.
6. Replace pin holding bevel gear to top of screw and grease bevel gears.

7. Replace gear cover and clip.

See Also: Exploded View and Replacement Parts.

CAUTION: ***This jack is not for highway use. Never tow trailer with a load on the jack.***

PRODUCTION

All engineering documentation is to be kept in file clearly labeled. These files remain in the possession of controller. An additional set of drawings is kept by the engineer responsible for approval of the designs.
There are no changes made in any part of the design without a review by the engineer. Any changes made will be noted and updated in the existing files.

PRODUCTION MATERIAL GUIDELINES

ORDERING

A list of parts and materials for each ride is kept and organized by individual ride. The list includes ALL information needed to order the specific parts and materials for each ride. This includes but is not limited to: the manufacturer or suppliers, part numbers and/or descriptions, and where the parts or materials are used on the individual rides.

RECEIVING

All parts and materials received are checked in upon receipt against the original purchase orders. Should any parts or materials not match the purchase order; the controller will either approve the use of the parts or have them returned to the supplier. There are no parts kept in the factory that do not meet our design specifications.

STOCKING PRODUCTION PARTS

All parts held in inventory are used in the order they are received. All inventoried parts used for the production of rides are stored and clearly marked as to what the parts are. Before any parts from inventory are approved for use in production of a ride, they are carefully inspected for any defects or damages.

Initial Inspection and Handling

- After opening carton, look for concealed damage. If concealed damage is found, immediately tile claim with carrier.
- Check the nameplate to verify that data conforms to specifications of motor ordered.

WARNING: *Eyebolts are intended for lifting motor only and must not be used to lift any other weight or attached equipment such as a pump or gearbox. Lifting and handling in the U.S.A. must be in accordance with Nema-MG-2.*

DANGER! *High voltage and moving parts around motors and motor driven equipment can cause serious or fatal injuries. Always disconnect power source before working on a motor or its connected load. Installation must conform to all OSHA requirements and then national Electrical Code (NEC) in the United States, and all local codes.*

Electrical→ Motor must be securely and adequately grounded by wiring with a grounded metallic conduit, or other grounding method approved by the NEC and local codes. Insulate all connections carefully to prevent grounding or short circuits. Reinstall all conduit and terminal box covers. Do not force connections into the conduit box.

Thermal Protection→ Use thermally protected motors or a motor starter incorporating thermal overload protection wherever required by safety regulations such as NEC or Underwriters Laboratories (UL) Standards in the United States, or where overloading, jamming, or other abnormal operating conditions may occur. Under low temperature conditions, manual reset protectors may reset automatically, causing motor to start unexpectedly. **Always disconnect power before working on equipment.**

Mechanical→ Guard ALL moving parts. Remove the shaft key before running the motor without a connected load. Be careful when touching the exterior of an operating motor! Motor may be hot enough to be painful or cause injury. This condition is normal for most motors when operated at rated load and voltage. Do not use the motor in a hazardous location [as defined by Article 500 of the National Electrical Code (NEC)] unless labeled for that location.

Storage→ Motor should be stored indoors in a clean, dry location.

Location

- **Open, Drip-proof Motor-** Clean, dry locations with access to an adequate supply of cooling air.
- **Totally Enclosed Motor-** Hasher environments where damp and dirty conditions may exist. Totally enclosed motors are not water-proof.
- Use only UL listed **Hazardous Location** motors for service in **Hazardous Locations** (as defined in Article 500 of the NEC).

- Temperature around the motor (ambient) should not exceed 104*F (40*C) unless motor nameplate states otherwise. Minimum temperature is –20*F (-29*C).

CAUTION: *Not for fans in unattended areas. Refer to the following for proper thermal protection and other motor selection information.*

UL 507 STANDARD- FANS FOR USE IN UNATTENDED AREAS (PARAGRAPHS 125&126)

Any motor used in a fan product, such as bathroom exhaust fans, wall-insert fans, ceiling-insert fans, attic exhaust fans, whole house fans and duct fans, etc., which are built into or within the building structure and which are likely to operate unattended or in situations in which the operator may not detect a locked rotor (stalled motor) condition must have either a manual reset thermal protector or a thermal cut-off (one-shot) device. Range hoods, circulating fans, pedestal fans and ceiling suspended fans are not included. Agriculture fans are included, if they are built into the building structure and are likely to operate unattended or in situations in which the person operating the fan may not detect a locked rotor (stalled motor) condition.

Power Source

- Voltage, frequency and phase of the power supply must correspond to that shown on the motor nameplate. Lower voltage can reduce performance and cause overheating.
- Line voltages on all three lines should be balanced within 1%. Unbalanced voltages cause motor overheating and poor performance.

Motor Control Devices

- Use of a suitable motor starter, either manual or magnetic, incorporating thermal overload protection is advisable and usually required by local electrical codes.
- Power supply must have fuses or circuit breakers to provide short circuit protection for the motor and controller.
- Follow the control manufacturer's recommendations on overload heater selection or setting. If an existing controller is to be used with a replacement motor, new heaters may be required.

Motor Mounting

Motor must be securely fastened to a rigid, flat surface to prevent vibration and minimize noise. For secure mounting use high quality bolts of the largest possible diameter.

Belt-driven sheaves must be in-line. Use a straight edge to check. Do not over-tighten belts.

Direct-coupled installations require a careful check of shaft and coupling alignment, shaft offset and/or angular misalignment should be less than .002". Shim motor base as necessary. Do not depend on a flexible coupling to compensate for misalignment.

WHEELS

Torque Requirements

It is extremely important to apply and maintain proper wheel mounting torque on your trailer axles. Torque is a measure of the amount of tightening applied to a fastener (nut or bolt) and is expressed as length times force. For example, a force of 90 pounds applied at the end of a wrench one foot long will yield 90 lbs.-ft. of torque. Using a torque wrench is the best method to assure the proper amount of torque is being applied to a fastener.

Note: *Wheel lug bolts and lug nuts must be applied and maintained at the proper torque levels to prevent loose wheels, broken studs, and possible dangerous separation of wheels from axles.*

Tightening Wheel Nuts

1. Start all nuts by hand to prevent cross threading.
2. Tighten nuts in an alternating/opposing sequence.
3. The tightening of the fasteners should be done in stages. Following the recommended sequence, tighten fasteners per the following wheel torque chart.
4. Wheel nuts should be torqued before first road use and after each wheel removal. Check and re-torque after the first 10 miles, 25 miles, and again at 50 miles. Check periodically thereafter.

Wheel Nut Torque Requirements

1st Stage	2nd Stage	3rd Stage
25-35 lbs.- ft.	50-65 lbs.-ft.	85 lbs.-ft.

During the design and the production processes, measures have been carried out, to ensure that our product's performances are obtained with the maximum safety. This operation and maintenance manual shows important instructions regarding the safety of installation, the operation and the maintenance of the ride. It is therefore of paramount importance, that the operator carefully follows the present document.
This equipment for fairs and leisure parks shall be employed only for the operation for which it has been expressly conceived, that is to the play and entertainment of Children. Any other use is to be considered as improper and dangerous.

TRACK IN

PRESENCE OF WATER (PUDDLES) OR OF EXCESSIVE HUMIDITY

If the customer does not acquire the fencing, the manufacturer of the ride is exempted from any responsibility, both
with regard to civil and to criminal law in case of an accident due to the absence or nonconformity of said gear. It is
in any case to the operator to ensure the installation of proper protection fences to operate the train.

PARENT SHOULD DRESS THEIR CHILDREN IN WELL-FITTING SHOES AND AVOID LOOSE-FITTING
CLOTHING WHICH MIGHT BE CAUGHT BETWEEN MOVING PARTS

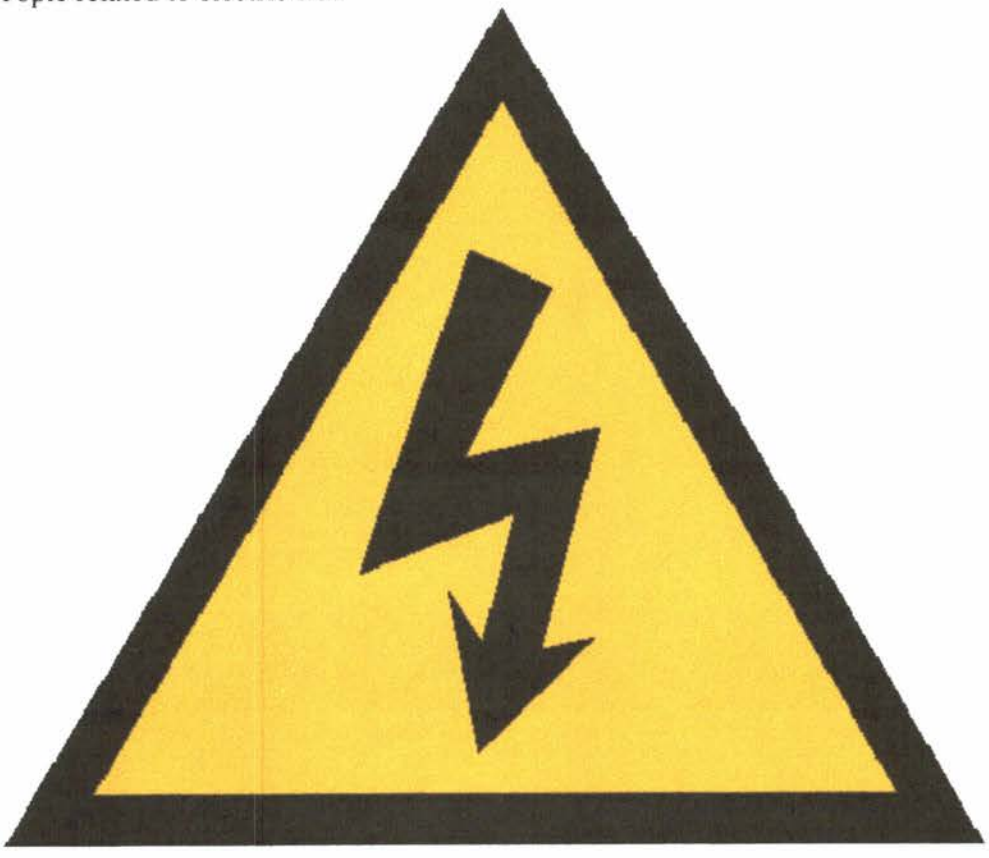
IMMEDIATELY STOP IN EVERY SITUATION, THAT COULD DEVELOP INTO A DANGEROUS ONE

THE OPERATOR MUST FOLLOW THE INDICATIONS OF THIS MANUAL

To simplify the reader, along the text we employ some graphic symbols to call his attention, in particular

Point of particular importance

Topic related to electric risk



MAINTENANCE SCHEDULE
MANUFACTURER: Amusement Devices & Manufacturing LLC

MAINTENANCE SCHEDULE	WEEKLY/MONTHLY
SERVICE DATES	
UNIT DATE/INITIAL DATE/INITIAL DATE/INITIAL	
LUBRICATE CAR WHEEL BEARINGS	M
LUBRICATE DRIVE TRAIN	M
INSPECT MOTOR BRUSHES	M
LUBRICATE ALL GREASE FITTINGS	M
REPLACE ANY WORN "R" KEYS	M
CHECK TIRE INFLATION AND LUG BOLTS	M
DRIVE	
CHECK OIL LEVEL IN HYDROLIC PUMP	M
CHECK BELT FROM MOTOR TO PUMP	M
CHECK ALL HOSES & CONNECTIONS FOR LEAKS	M
LOOK FOR ANY WORN OR BROKEN PARTS	M
AC DRIVE CHECK ELECTRICAL CORDS AND CONNECTIONS	M
REMOVE DIRT ACCUMULATIONS FROM ALL MOTOR VENT OPENINGS	M
IS MOTOR PROPERLY GROUNDED	M
CHECK MOUNTING SCREWS ON PARTS & TERMINALS	M

Amusement Devices & Manufacturing

209 North Berwick St.
Schaller, IA 51053
712-275-4226

RIDE MDL [SS-8] RIDE ID [1A9CR2623K1962270] DATE [12-15-18]

MAX RPM [14] DIRECTION [CCW] BALANCE [Yes]

MAX WIND SPEED [25] OPERATE IN RAIN [No]

PASSENGER WEIGHT

[360] LBS PER CAR [180] LBS PER SEAT

TOTAL MAX PASSENGER WT [1440]

PASSENGER CAPACITY

[8] ADULTS [8] CHILDREN

PASSENGER RESTRICTIONS

MINIMUM HEIGHT W/ADULT [42 inches]

PASSENGER MUST FIT RESTRAINT SYSTEM [Yes]

LARGE PASSENGER TO THE OUTSIDE [Yes]

ELECTRIC

VOLTS [230] PHASE [Single] AMPS [50] KW [15]

MINIMUM VOLTS [215] MAXIMUM VOLTS [240] TOTAL HP [ ]

SET UP DIMENSIONS

HEIGHT [12'] WIDTH [36'] DEPTH [36']

MAXIMUM RIDE DURATION [3mins]