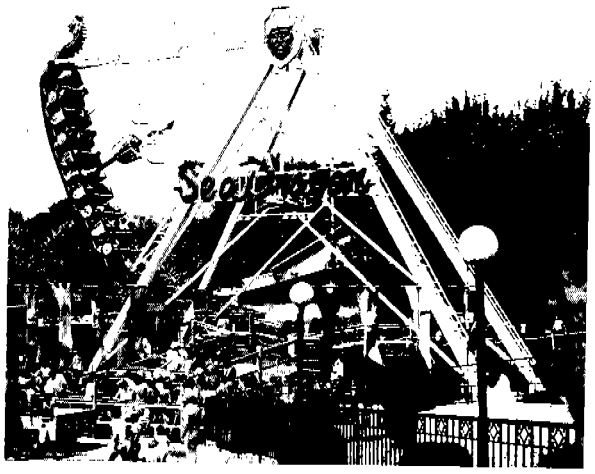
SPECIFICATION

This ride conforms with all applicable ASTM amusement ride standards in effect on the date of m

MFG: CHANCE RIDES, INC.
NAME: SEA DRAGON
TYPE: NON-KIDDIE



SEATING
Number of seats 10
Maximum number of passengers per seat . . . . . 4 adults or 6 children
Maximum passenger weight per seat . . . . . 680 lbs.
Maximum total number of passengers . . . . . 40 adults or 60 children
Maximum total passenger weight . . . . . 6,800 lbs.
Minimum passenger height . . . . . 42 inches (unaccompanied by adult)
Loading . . . . . All seats simultaneously

MAXIMUM RIDE WEIGHT (empty) . . . . . 58,000 lbs.

PERFORMANCE
Direction of travel . . . . . 65° maximum swing each side of center
Ride speed . . . . . 35.7 ft./sec.
Ride duration . . . . . 120 to 150 sec. (programmed timer)
Maximum wind speed (operating) . . . . . 25 mph
Maximum wind speed (static) . . . . . 80 mph

DRIVE . . . . . Electro-Hydraulic

POWER REQUIREMENTS
Total . . . . . 100 kW
Motor . . . . . 75 kW
Lights . . . . . 25 kW
Minimum/Maximum line voltage 208/230

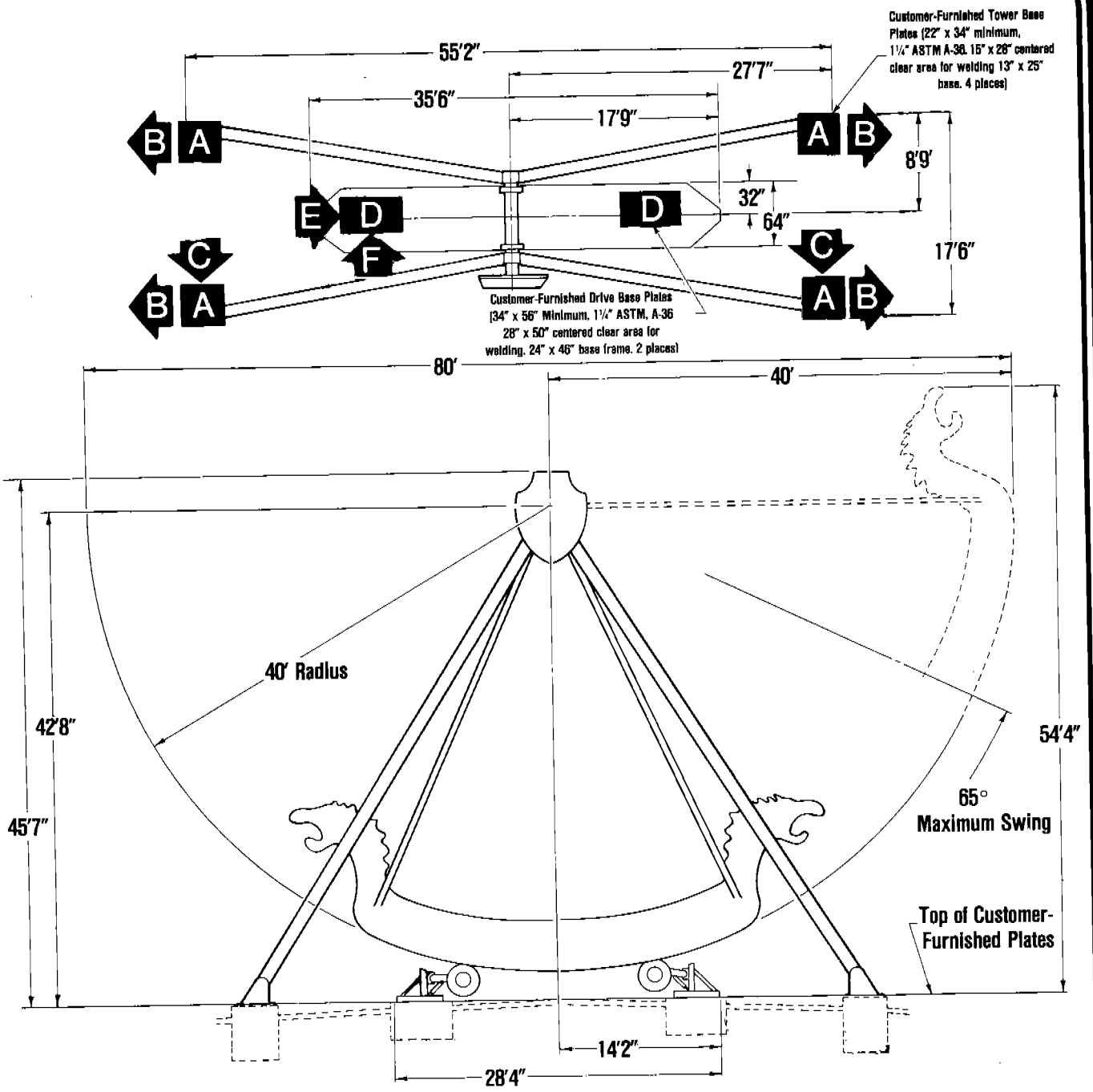
MOTOR
Quantity 2
Type . . . . . 208 Y/460 volt, 3 phase, 60 Hz
Horsepower rating 50

LIGHTING . . . . . 110 volt incandescent

MUSIC . . . . . Baptist Model No. BRD 617 TP

SEA DRAGON
PARK MODEL

Specifications are effective as of publication date. Because we try to improve every Chance product, these specifications are subject to change without notice.

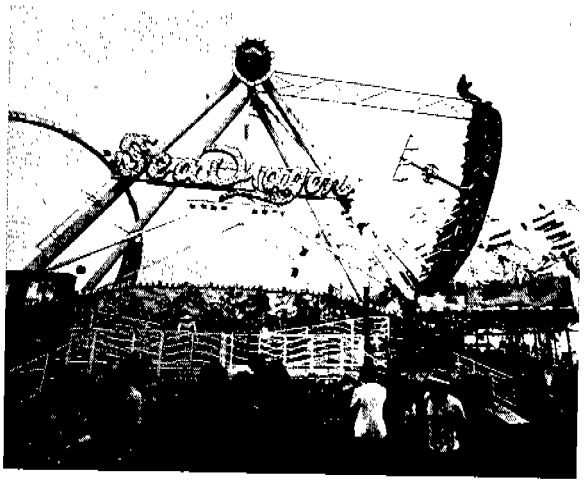


MAXIMUM INDIVIDUAL GROUND LOADS (POUNDS)
REFER TO INSTALLATION DRAWINGS FOR SPECIFIC FOOTING LOCATION & LOADS.

SYMBOL	DESCRIPTION	OPERATING, NO WIND 40 PASSENGERS	ADD FOR 25 MPH WIND
A	PARK BASE	16,000	± 6,000
B	PARK BASE SIDE LOAD	± 1,000	± 1,000
C	PARK BASE WIND LOAD	— 0 —	± 5,000
D	DRIVE BASE	13,600	— 0 —
E	DRIVE BASE WIND LOAD - SIDE	4,600	700
F	DRIVE BASE WIND LOAD	— 0 —	± 3,400

SPECIFICATIONS

This ride conforms with all applicable ASTM amusement ride standards in effect on the date of manufacture.



SEA DRAGON

PORTABLE MODEL

SEATING

Number of seats 10
Maximum number of passengers per seat ..... 4 adults or 6 children
Maximum passenger weight per seat ..... 680 lbs.
Maximum total number of passengers ..... 40 adults or 60 children
Maximum total passenger weight ..... 6,800 lbs.
Minimum passenger height ..... 42 inches (unaccompanied by adult)
Loading ..... All seats simultaneously

PERFORMANCE

Direction of travel ..... 65° maximum swing each side of center
Ride speed ..... 35.7 ft./sec.
Ride duration ..... 120 to 150 sec. (programmed timer)
Maximum wind speed (operating) ..... 25 mph
Maximum wind speed (static) ..... 80 mph

MAXIMUM RIDE WEIGHT (empty) ..... 85,000 lbs.

DRIVE ..... Electro-Hydraulic

POWER REQUIREMENTS

Total ..... 100 kW
Motor ..... 75 kW
Lights ..... 25 kW
Minimum/Maximum line voltage 208/230

MOTOR

Quantity 2
Type ..... 208 Y/460 volt, 3 phase, 60 Hz
Horsepower rating 50

LIGHTING ..... 110 volt incandescent

MUSIC ..... Baptist Model No. BRD 617 TP

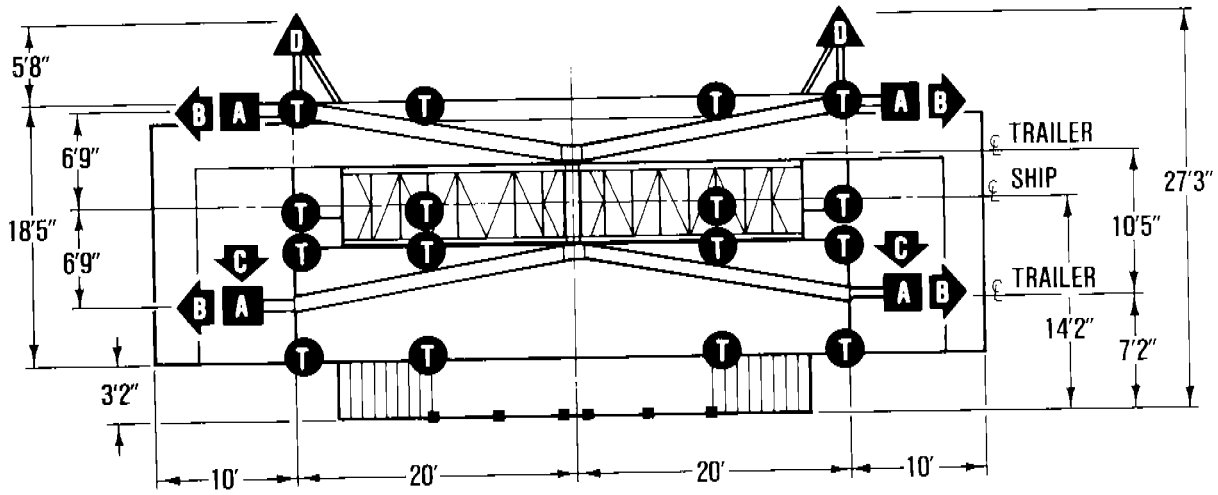
STANDARD LEAD-IN CABLE

Size ..... 2/0 (Motor)
4/4 type G (Lights)
Length ..... 50 ft.

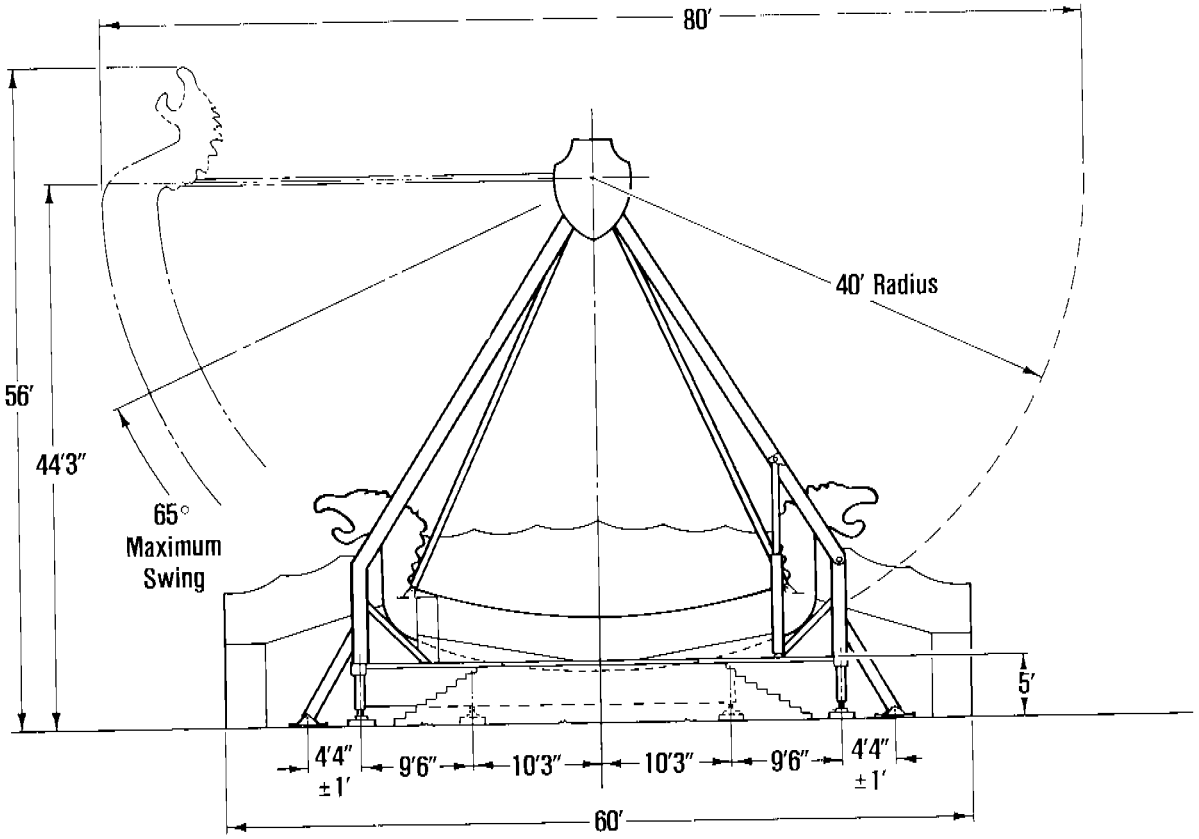
TRAILERING

	Main Trailer	Auxiliary Trailer
Height	13 ft. 6 in.	13 ft. 6 in.
Width	8 ft.	8 ft.
Length	40 ft. 9 in.	40 ft. 9 in.
Total weight	45,000 lbs.	40,000 lbs.
Rear axle weight	26,500 lbs.	25,900 lbs.
Kingpin weight	17,600 lbs.	17,100 lbs.
Tire size	10:00 x 20 (12-Ply)	10:00 x 20 (12-Ply)

Specifications are effective as of publication date. Because we try to improve every Chance product, these specifications are subject to change without notice.



MIDWAY



MAXIMUM INDIVIDUAL GROUND LOADS (POUNDS)

REFER TO INSTALLATION DRAWINGS FOR SPECIFIC FOOTING LOCATION & LOADS.

SYMBOL	DESCRIPTION	OPERATING NO WIND 40 PASSENGERS	ADD FOR 25 MPH WIND
A	OUTRIGGERS	16.000	± 6.000
B	OUTRIGGER SIDE LOAD	± 1.000	± 1.000
C	JACKS - WIND LOAD	-0-	± 5.000
D	TRAILER JACKS - WIND LOAD	-0-	6.000
T	TRAILER JACKS	6.000	± 3.000

SEA DRAGON

Ride Serial Number _____ Owner _____ Date _____

FIELD INSPECTION POINTS

1. ( ) Inspect blocking and leveling.

2. ( ) Inspect trailer-to-trailer trusses and turnbuckles.

3. ( ) Inspect load sharing of 16 trailer jacks, 2 wind braces and 4 outriggers as described in operation manual. Outrigger turnbuckles must be tight.

4. ( ) Inspect lock nuts on leveling jacks.

5. ( ) Inspect hydraulic valves for leveling jacks.

6. ( ) Inspect cable leads, electrical connections and grounding per local code.

7. ( ) Inspect fences and platforms for proper installation and leveling. Check all jack stands.

7A. ( ) Inspect vehicle and platform step areas and safety decals (Bulletin B387R1082-0).

8. ( ) Inspect tightness of "K" brace clevis adjustment and safety pins in clevis nuts to prevent nut turning.

8A. ( ) Inspect tower spread cylinder ears and bearing.

9. ( ) Inspect pins in all areas for safety pins.

10. ( ) Inspect electrical jumper cables at tower, axles, sweep and boat.

11. ( ) Inspect air jumper lines at tower, axles, sweep and boat.

12. ( ) Inspect hydraulic hoses, tubes and fittings for leaks.

13. ( ) Inspect trailer, tower, axle, sweep and boat structures for visible cracks (Bulletin B72-0211-00).

14. ( ) Inspect ASTM A325 capscrews and nuts (with hardened washers) for torque on boat, sweep, axle and towers (Bulletin B090R1075-0).

15. ( ) Check the operation and locking of lap bars (Bulletins B72-0209-00, B72-0214-00 and B387R1078-0).

16. ( ) Inspect lap bar padding and condition of seats and flooring. Inspect seat back grab rails and safety decals (Bulletins B387R1053-0).

17. ( ) Inspect pins and bolts for excessive wear.

18. ( ) Inspect drive tire wear, inflation pressure and lug bolt tightness.

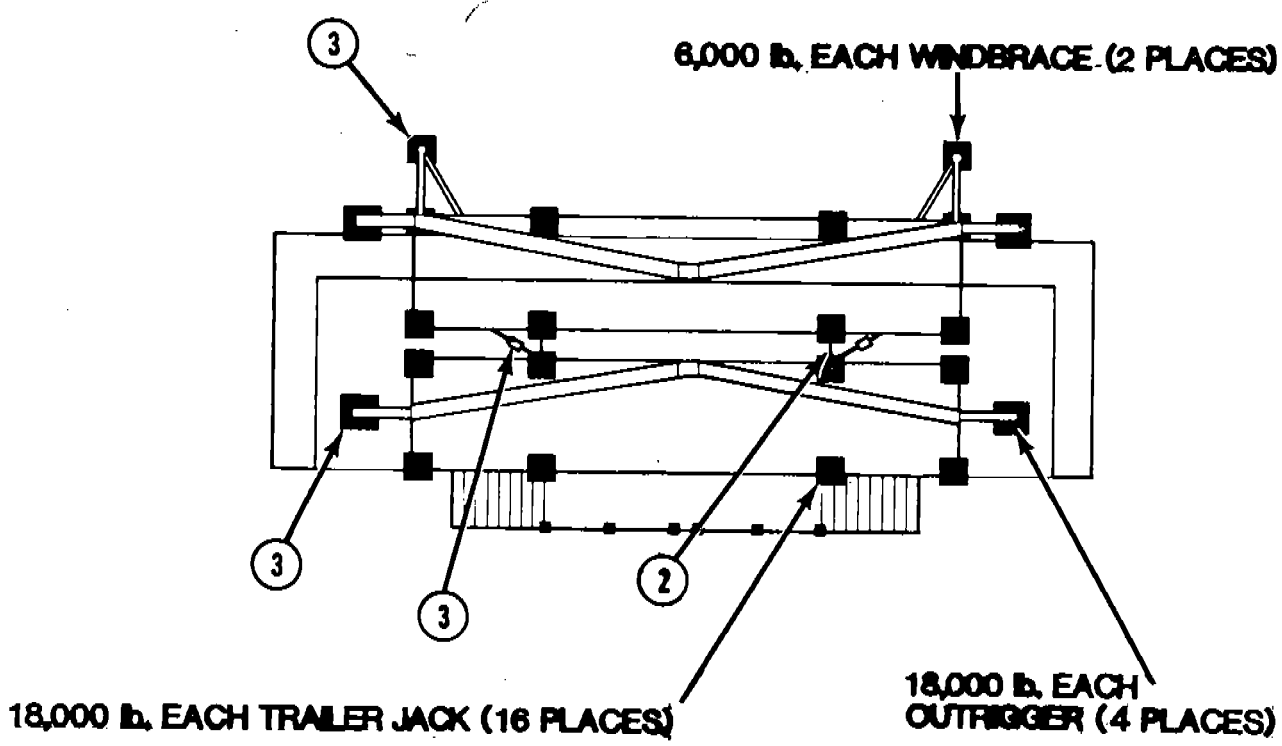
19. ( ) Inspect drive tire hydraulic cylinders for stroking, leakage, clevis tightness, and rod and base end bearing lubrication and condition.

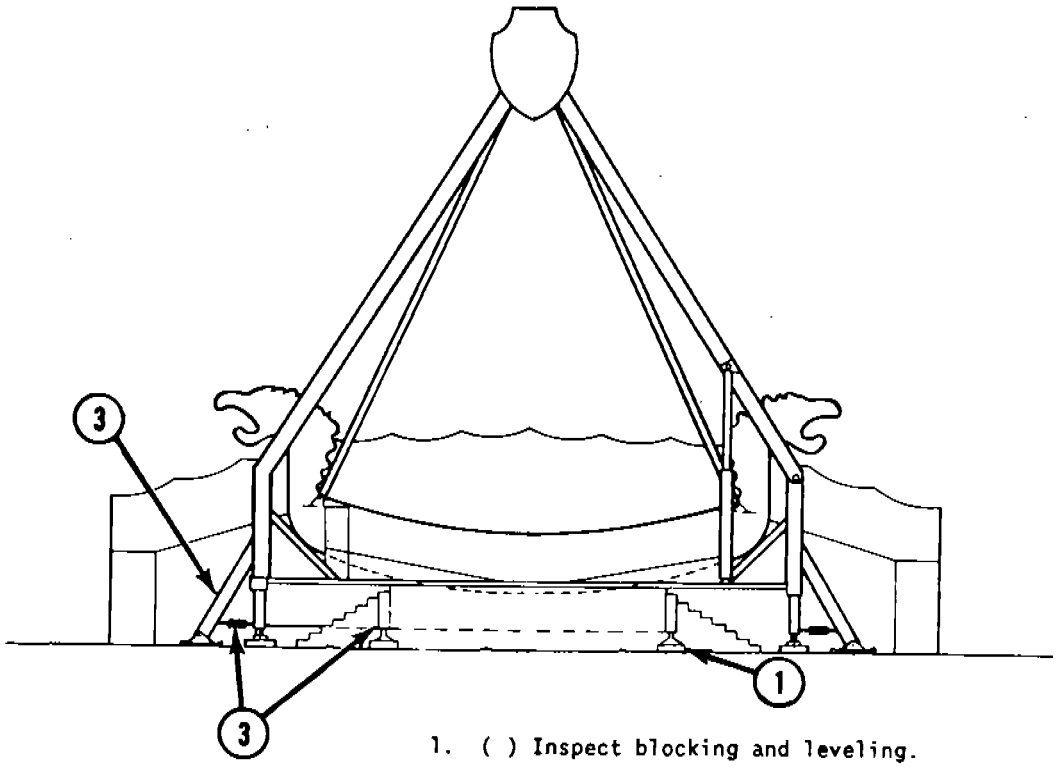
20. ( ) Inspect drive tire pivot bearings for lubrication and end play.

21. ( ) Inspect maximum swing, braking, emergency stop and cycling performance of ride.

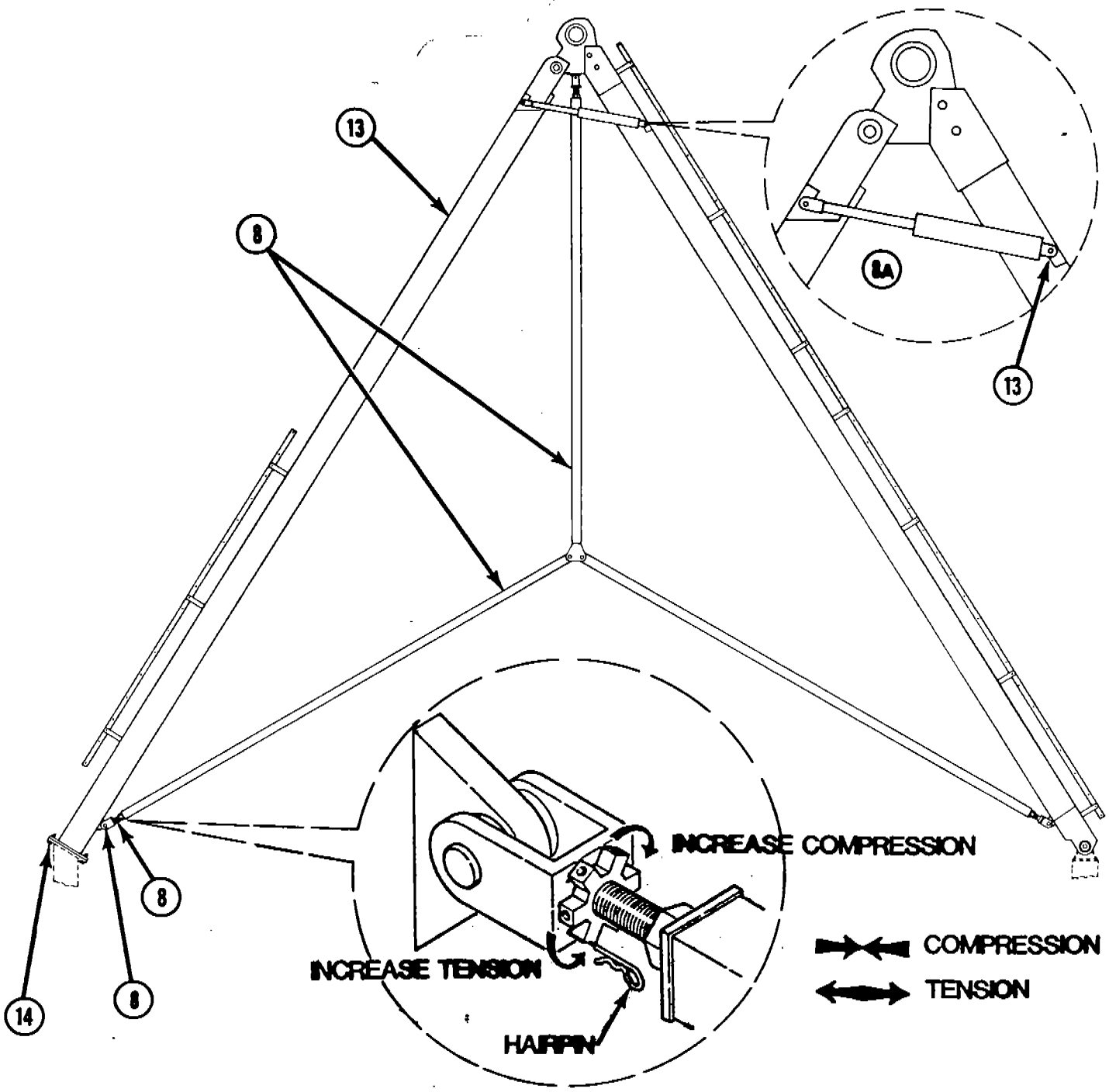
22. ( ) Inspect lap bar controls and indicator lights.

23. ( ) Inspect operating controls.





1. ( ) Inspect blocking and leveling.
2. ( ) Inspect trailer-to-trailer trusses and turnbuckles.
3. ( ) Inspect load sharing of 16 trailer jacks, 2 wind braces and 4 outriggers as described in operation manual. Outrigger turnbuckles must be tight.

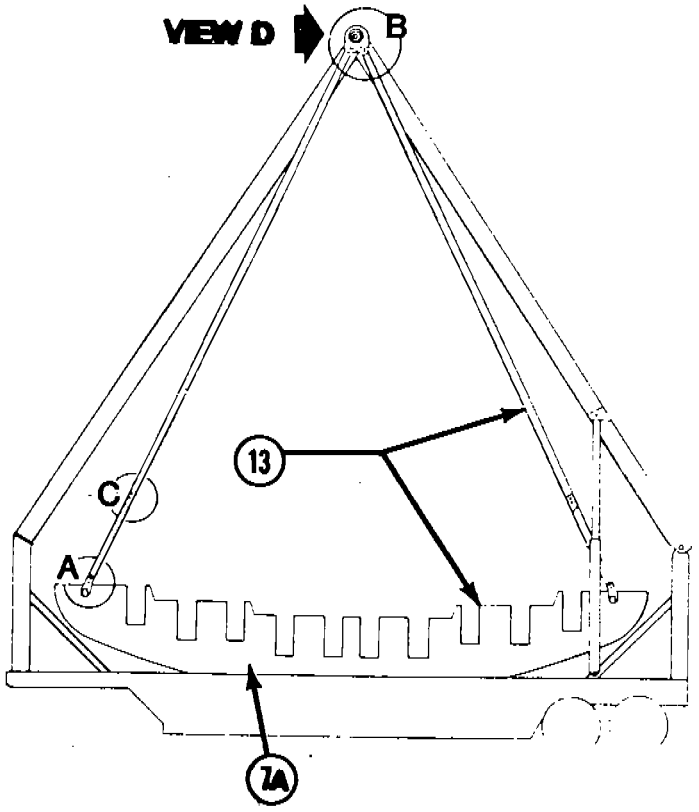


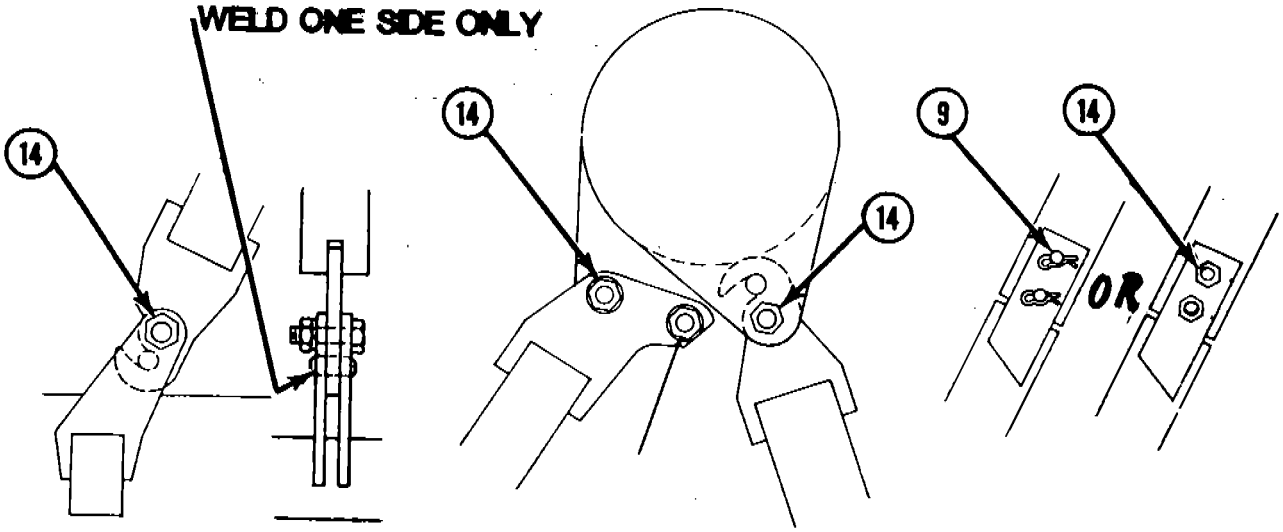
8. ( ) Inspect tightness of "K" brace clevis adjustment and safety pins in clevis nuts to prevent nut turning.

8A. ( ) Inspect tower spread cylinder ears and bearing.

13. ( ) Inspect trailer, tower, axle, sweep and boat structures for visible cracks (Bulletin B72-0211-00).

14. ( ) Inspect ASTM A325 capscrews and nuts (with hardened washers) for torque on boat, sweep, axle and towers (Bulletin B090R1075-0).





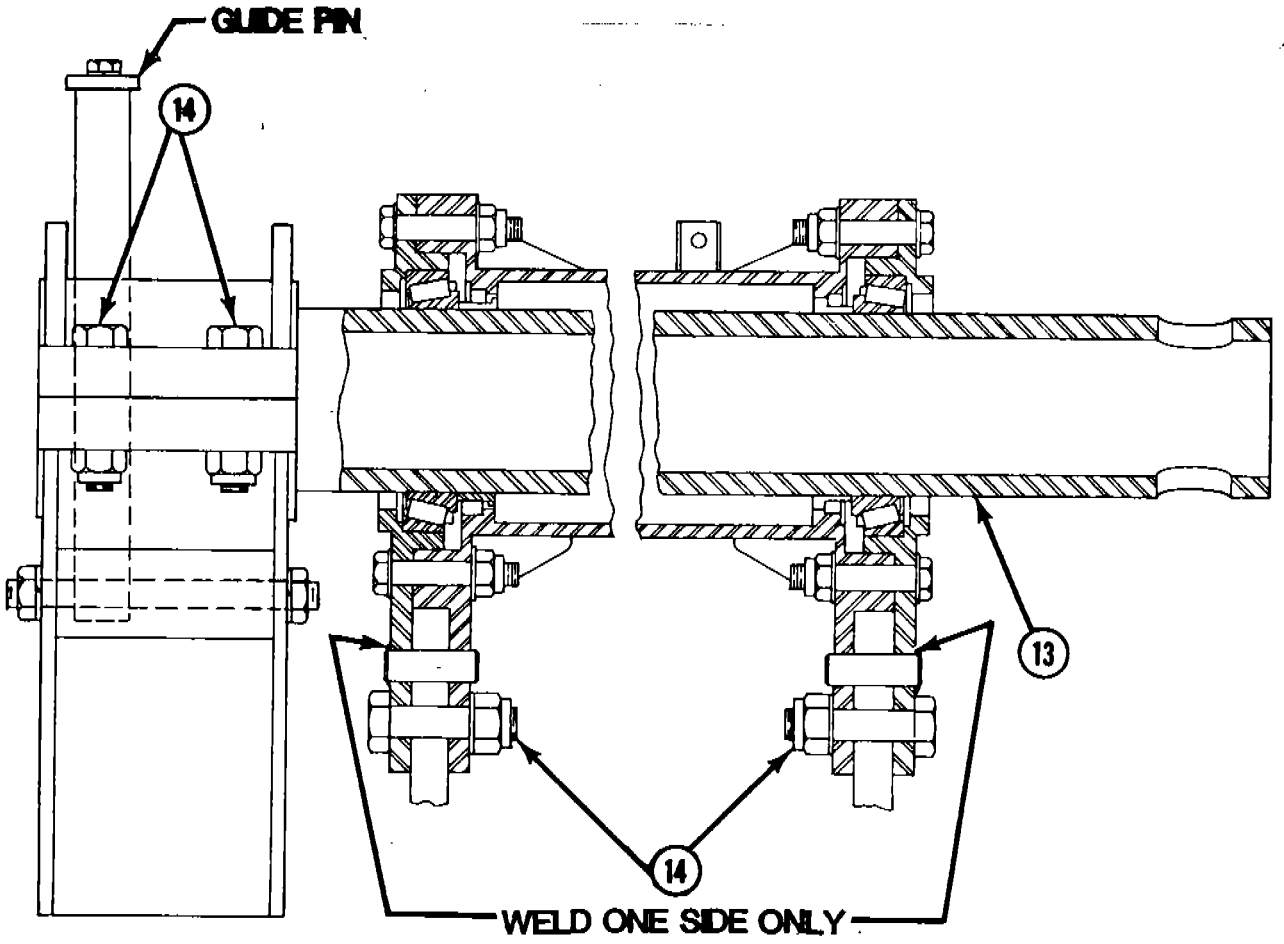
DETAIL A

7A. ( ) Inspect vehicle and platform step areas and safety decals (Bulletin B387R1082-0).

9. ( ) Inspect pins in all areas for safety pins.

13. ( ) Inspect trailer, tower, axle, sweep and boat structures for visible cracks (Bulletin B72-0211-00).

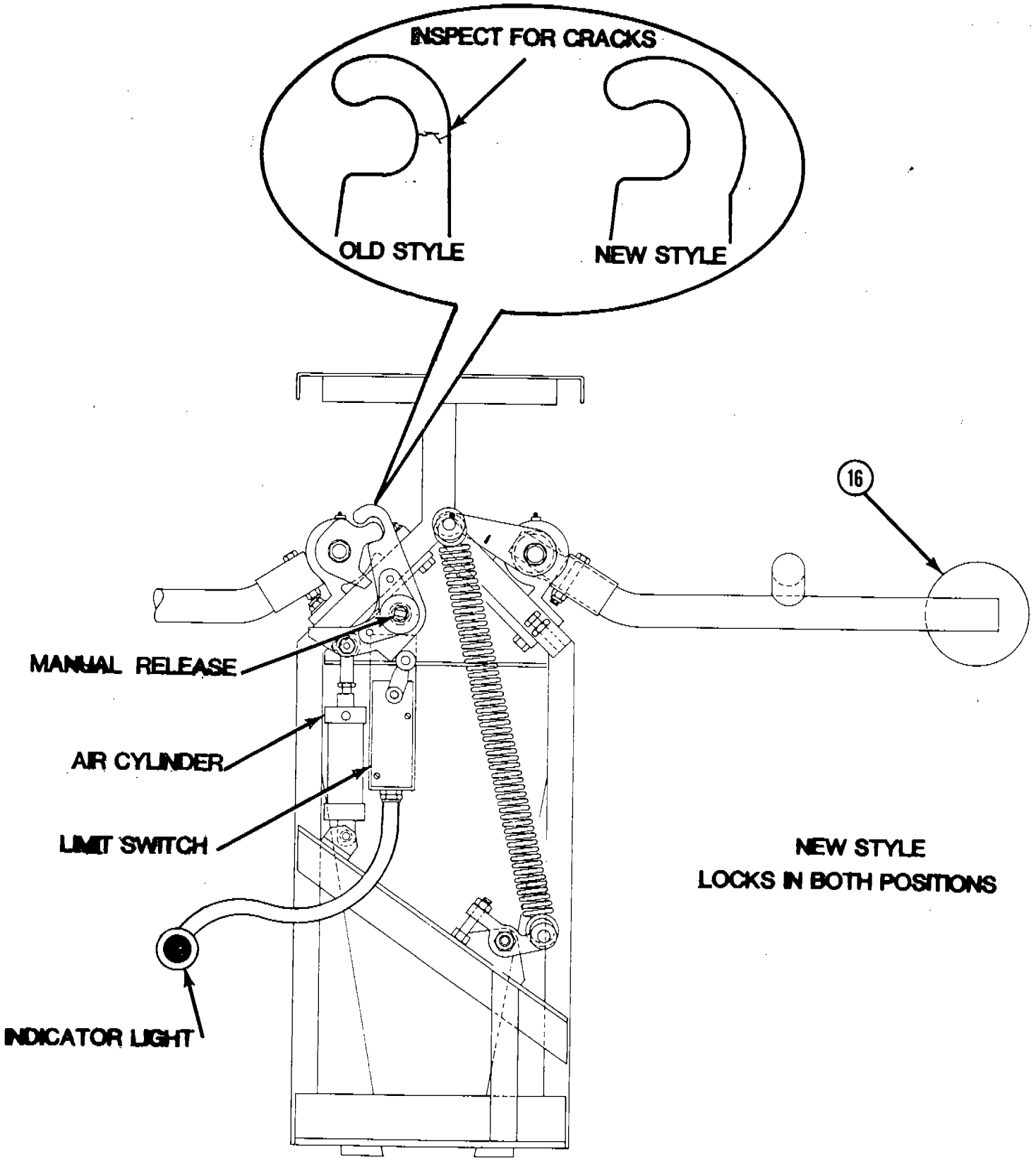
14. ( ) Inspect ASTM A325 capscrews and nuts (with hardened washers) for torque on boat, sweep, axle and towers (Bulletin B90-0148C-00).



VIEW D

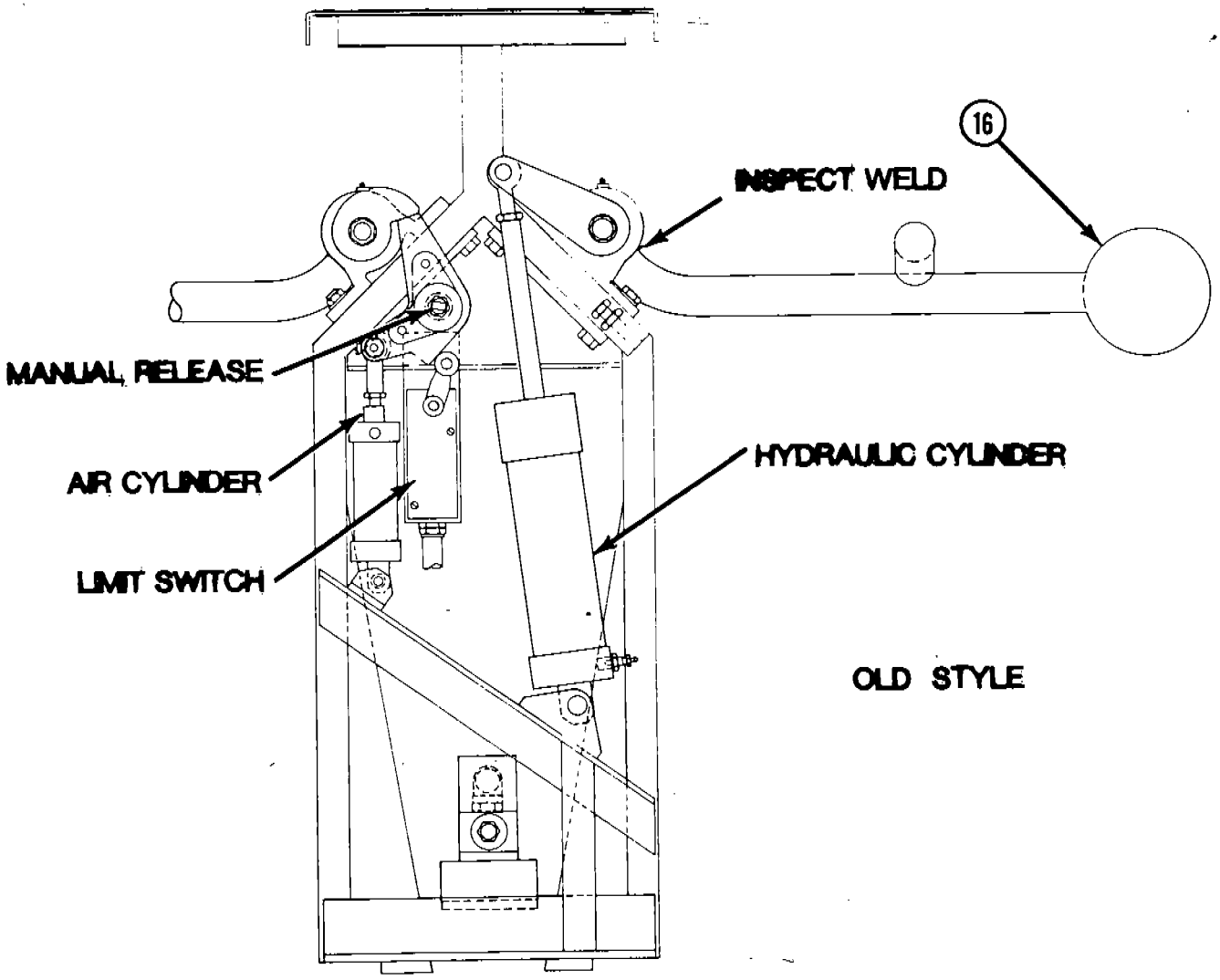
13. ( ) Inspect trailer, tower, axle, sweep and boat structures for visible cracks (Bulletin B72-0211-00).

14. ( ) Inspect ASTM A325 capscrews and nuts (with hardened washers) for torque on boat, sweep, axle and towers (Bulletin B090R1075-0).



15. ( ) Check the operation and locking of lap bars (Bulletins B72-0209-00, B72-0214-00 and B387R1078-0).

16. ( ) Inspect lap bar padding and condition of seats and flooring. Inspect seat back grab rails and safety decals (Bulletin B387R1053-0).



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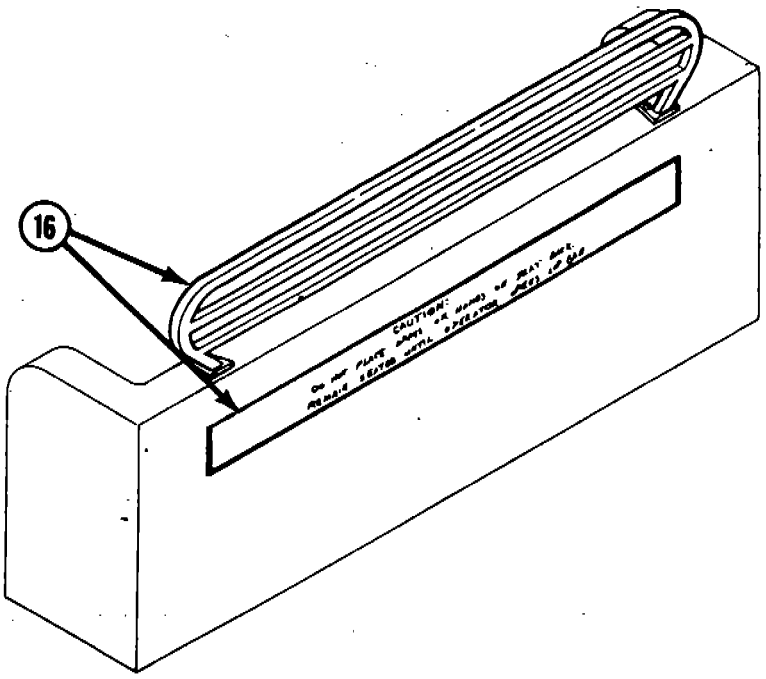
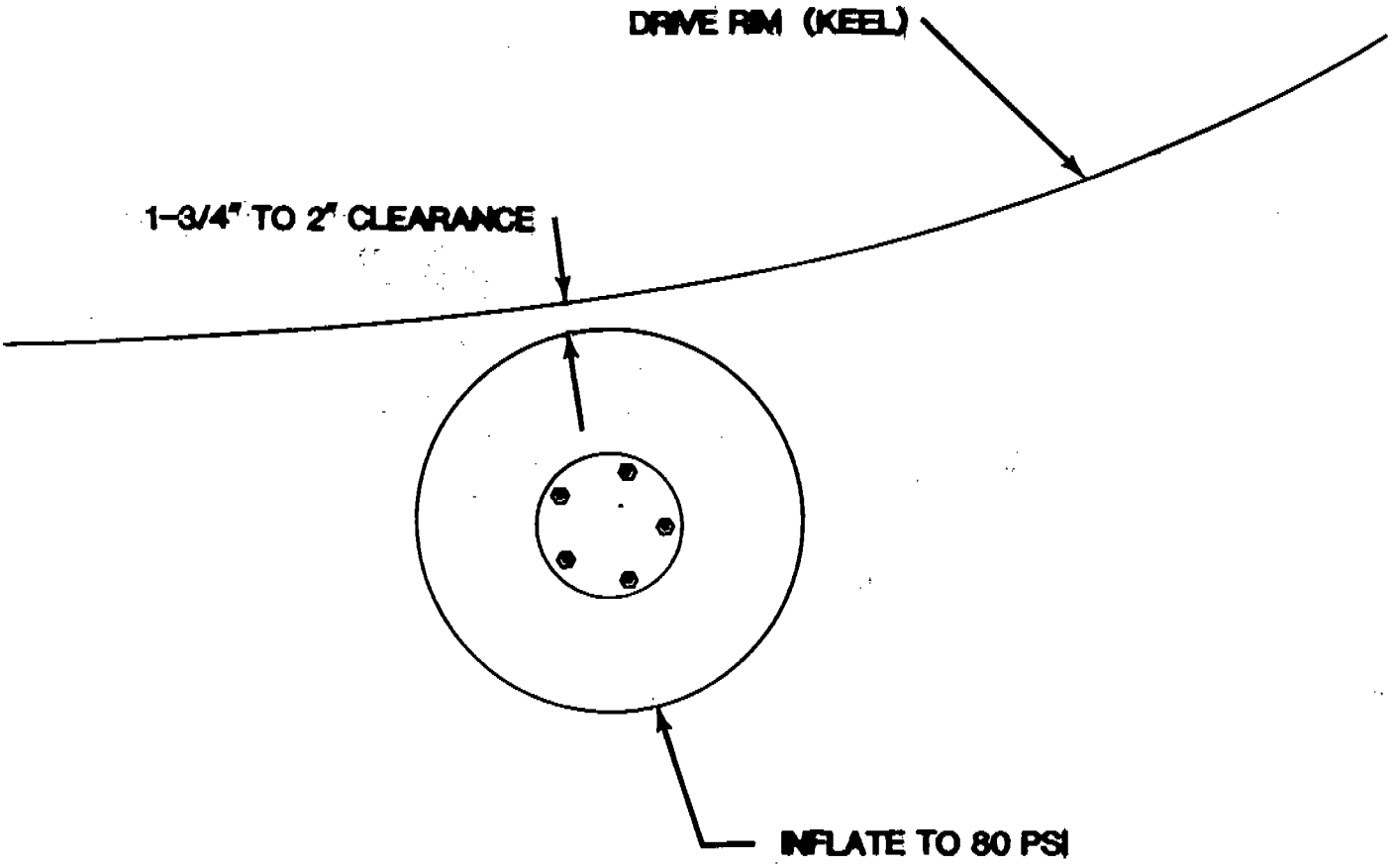
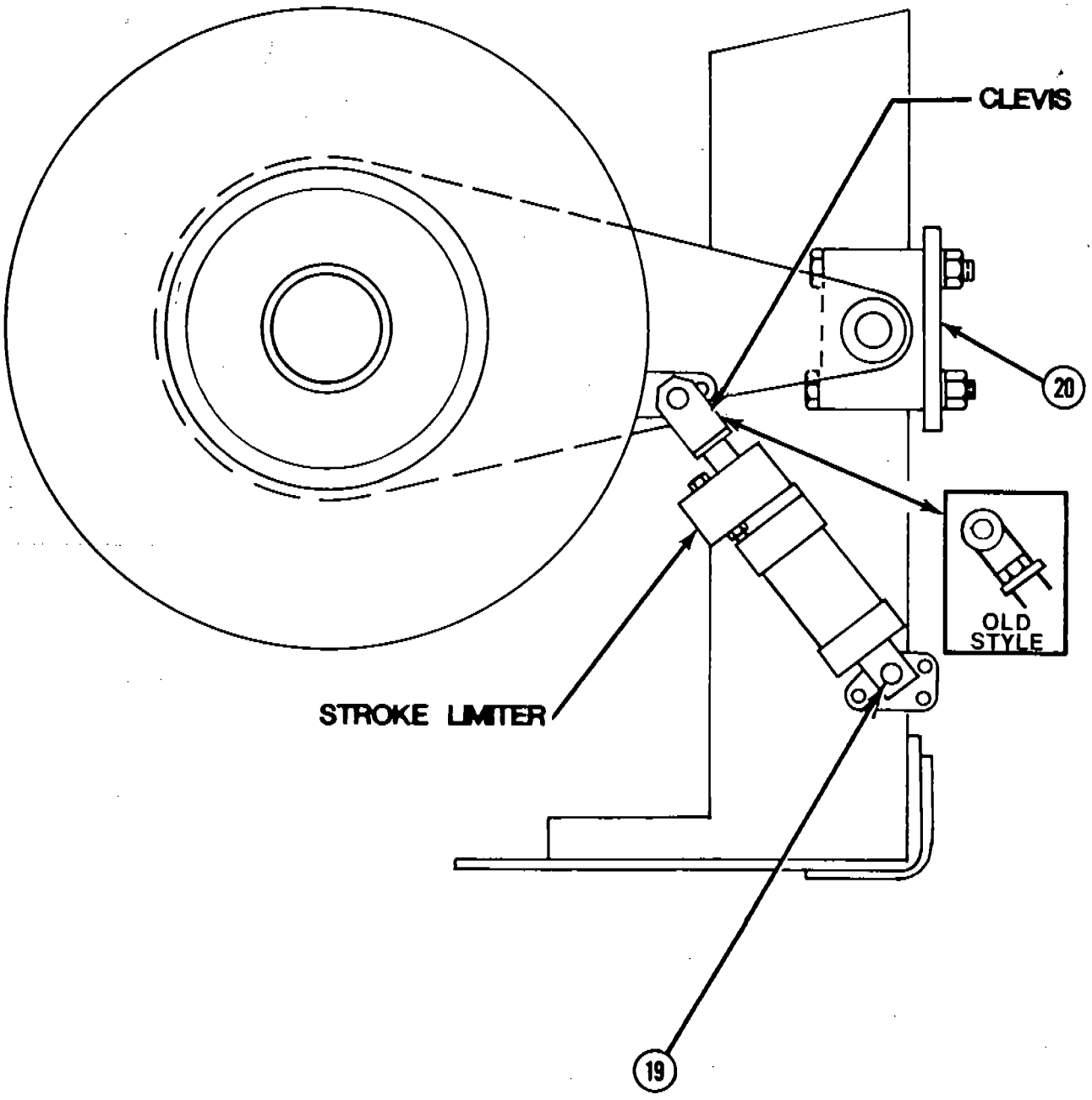


16. ( ) Inspect lap bar padding and condition of seats and flooring. Inspect seat back grab rails and safety decals (Bulletin B387R1053-0).

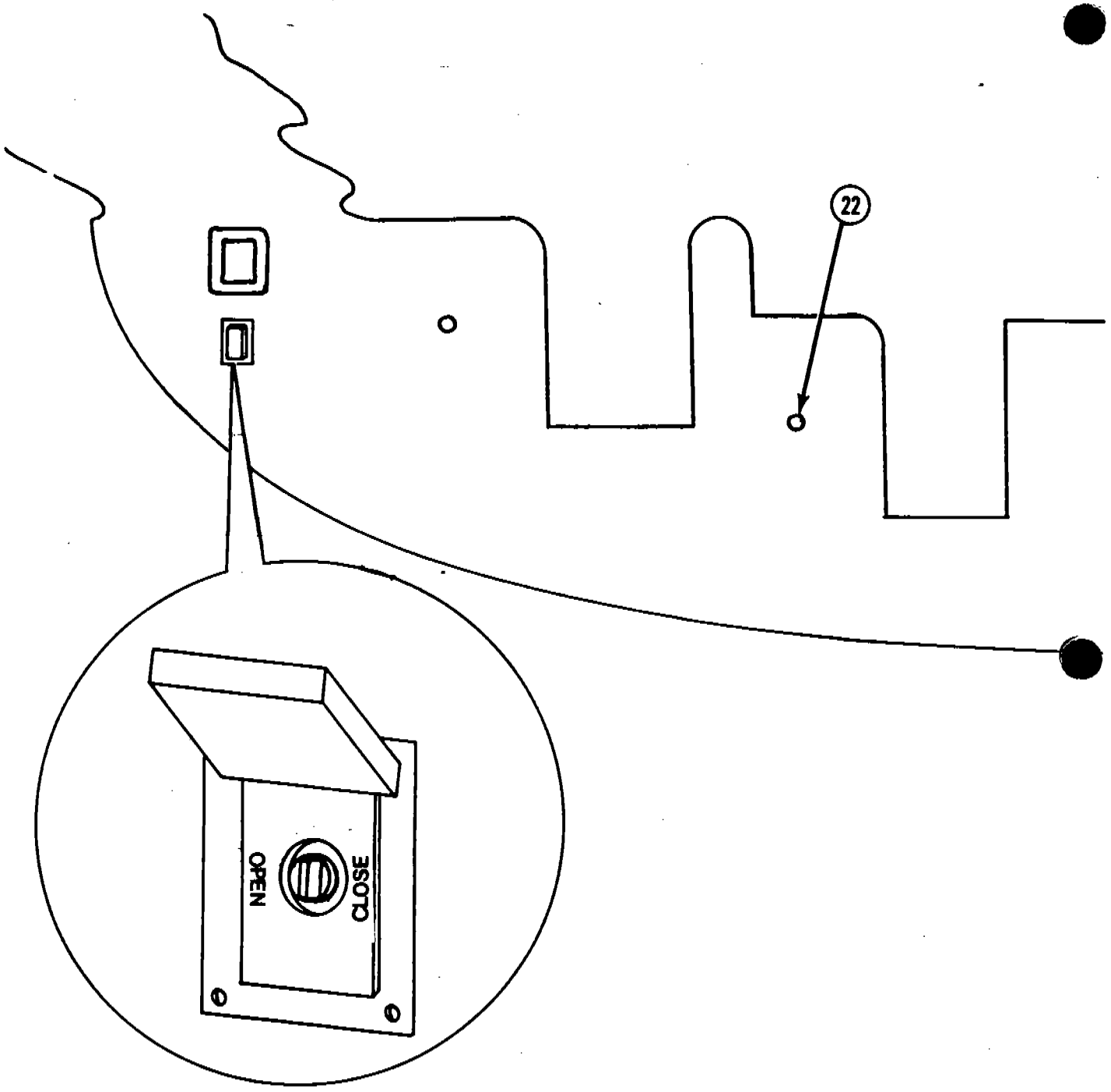


18. ( ) Inspect drive tire wear, inflation pressure and lug bolt tightness.

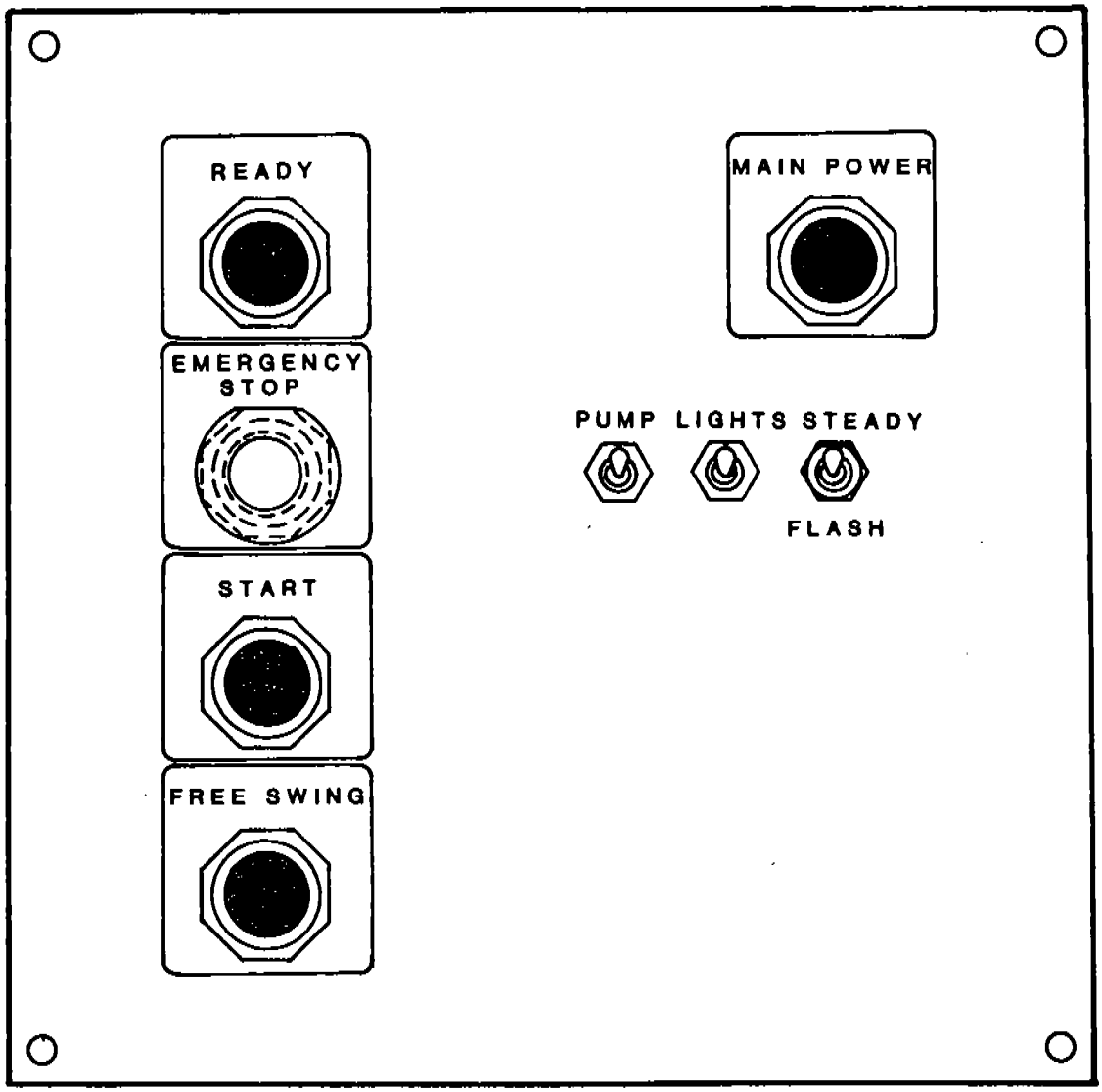


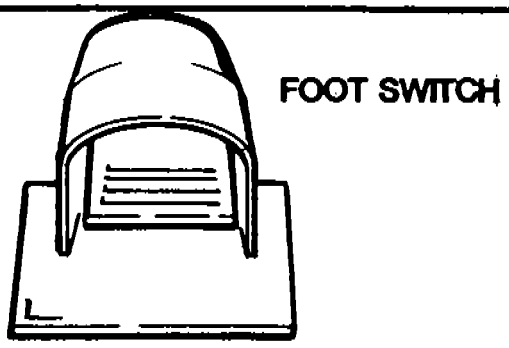
19. ( ) Inspect drive tire hydraulic cylinders for stroking, leakage, clevis tightness, and rod and base end bearing lubrication and condition.

20. ( ) Inspect drive tire pivot bearings for lubrication and end play.



22. ( ) Inspect lap bar controls and indicator lights.





23. ( ) Inspect operating controls.

NUMBER: B387R1099-0

DATE: MAY 24, 1991

SUPERSEDES:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: All Units - Chance Rides, Inc.

All Units - Chance Manufacturing Co., Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with rides produced by Chance Manufacturing Company, Inc.

Ride: SEA DRAGON Subject: Lap Bar Air Pressure

Chance Rides, Inc. has had reports of the bottom mounting eye of the lap bar air cylinders breaking. These cylinders activate the lap bar locks. The breaks occur at the point where the cylinder is pinned to the seat frame. All owner/operators of SEA DRAGON amusement rides are required to visually inspect the air cylinder attaching points for cracks. If any cracks in the cylinder attaching points are found, the cylinder must be replaced. This inspection must be done on an annual basis

If any cylinders have been replaced, due to either the above inspection or due to previous breakage in this area, adjustment to the air pressure may be required. It has been determined that failure of the cylinders may be due to improperly regulated air pressure. The air pressure at the boat should not exceed 45 psi.

All work must be performed by qualified personnel, capable of understanding the function of the parts and their proper installation.

NOTICE

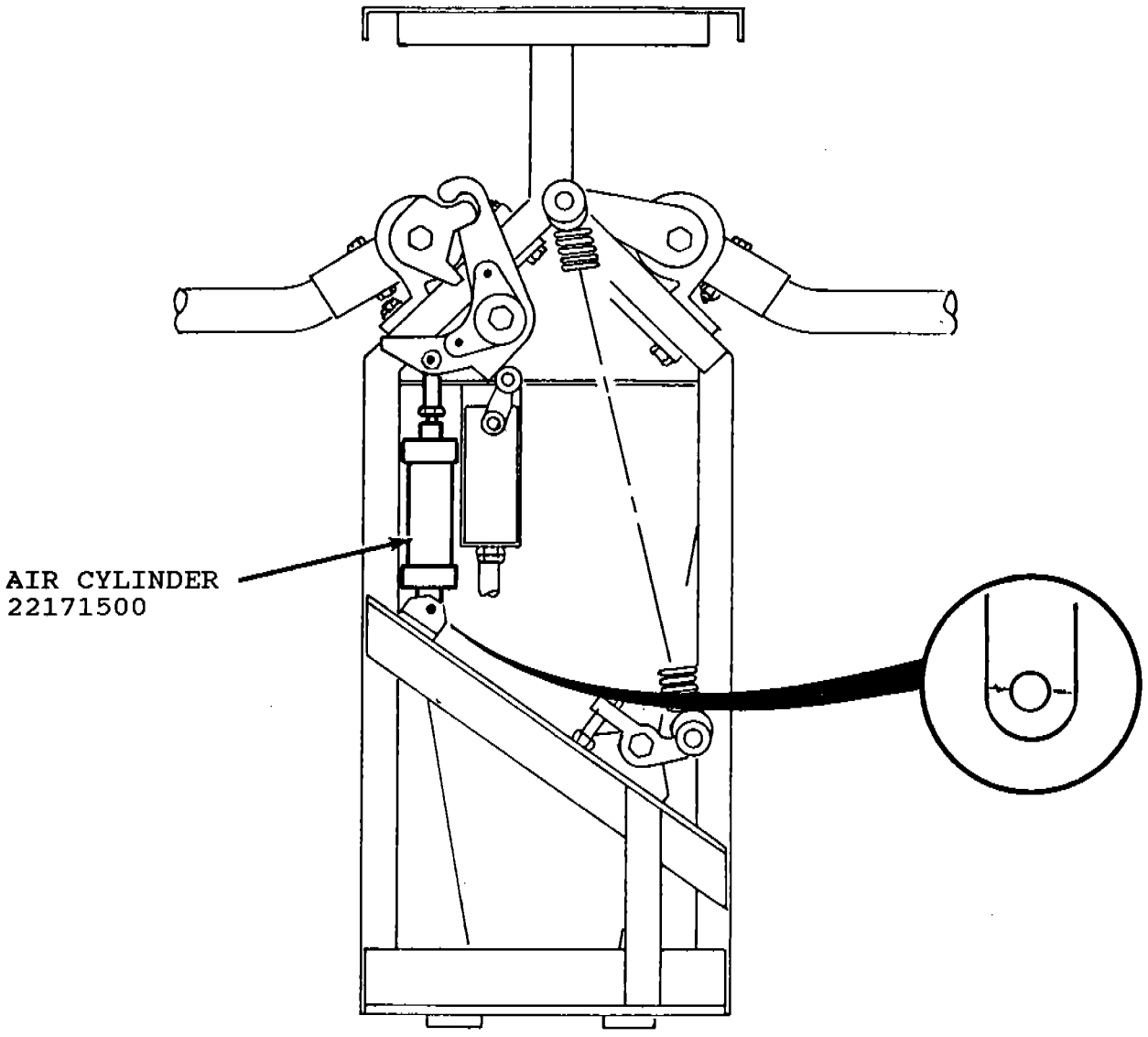
Use only those components authorized, specified or provided by Chance Rides, Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with any unauthorized alterations and/or modifications or additions and installations of unauthorized components.

Factory and Sales Office: 4219 Irving · P.O. Box 12328 · Wichita, Kansas 67277-2328 · (316) 942-7411 · FAX: (316) 942-7416

AIR CYLINDER INSPECTIONS

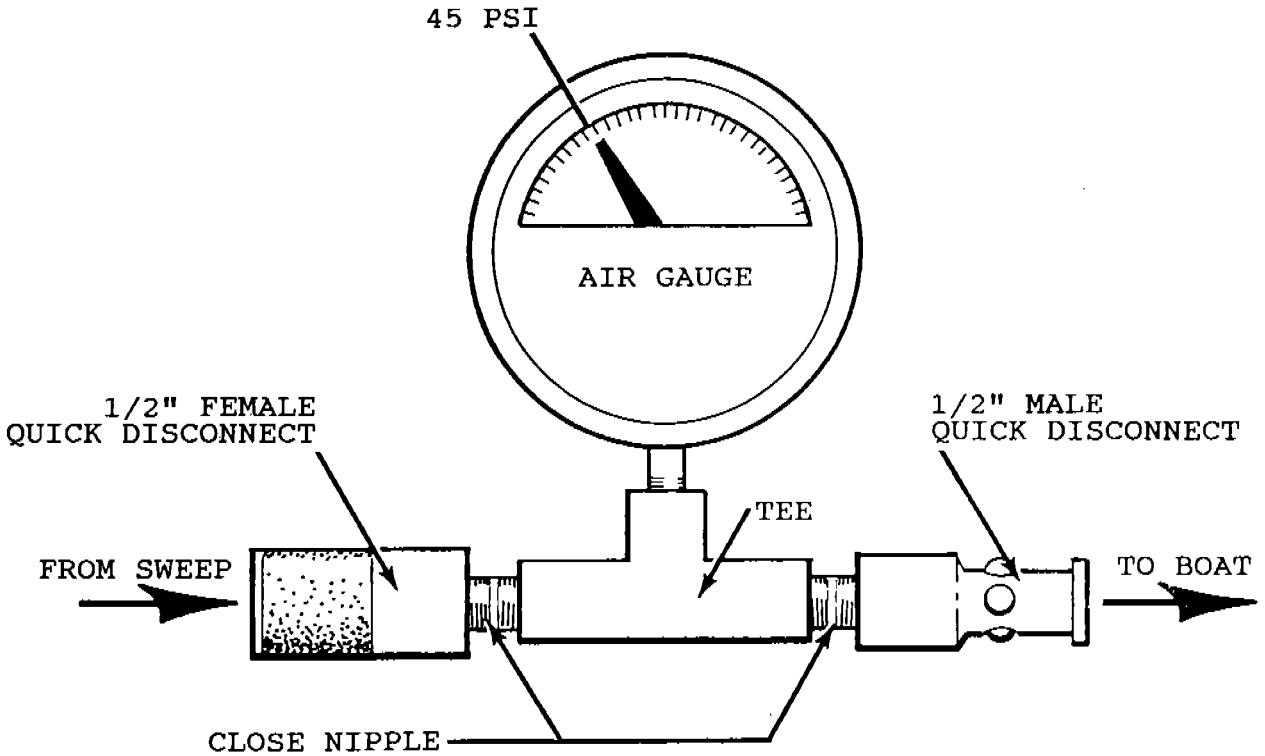
NOTE:	Lap bars must be in the up position and air cylinders unpinned at bottom in order to perform inspection. Cylinder must be repinned before operating ride.



SAMPLE GAUGE INSTALLATION

If regulation of air pressure is required the following instructions can be followed in order to determine the air pressure at the boat.

Connect one side of air gauge to the quick disconnect in the back side of the boat. Connect the air line coming down the sweep to the other side of the gauge.



NOTE:	Do <u>not</u> operate ride with this gauge connected to the boat. Remove gauge and reconnect air line to boat before operating ride.

NUMBER: B387R1097-0

DATE: MAY 17, 1991

SUPERSEDES:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: 387-02486 thru 387-03489 Excluding Park Models
Chance Rides, Inc.

79-46001 thru 84-4623 Excluding Park Models
Chance Manufacturing Co., Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with rides produced by Chance Manufacturing Company, Inc.

Ride: SEA DRAGON Subject: Spread Cylinder Support Weldment

Chance Rides, Inc. has become aware that if the spread cylinders on the tower legs of the SEA DRAGON are fully extended or retracted with pressure still being applied to the cylinder, that damage to the cylinder attaching weldment and injury to personnel may occur. Chance Rides, Inc. has developed a kit which when properly installed increases the welded area of the cylinder attaching weldment to the tower leg.

Chance Rides, Inc. requires all owners of the above noted SEA DRAGON amusement rides to order and install kit number K387R1097-0, using the instructions supplied with the kit. The Certification Of Compliance must be returned to Chance Rides, Inc. within 15 days from receipt of the kit. This kit includes all necessary parts to rework one ride.

In addition to this kit, proper set-up and tear-down procedures must be followed. Extend and retract the cylinders slowly, making sure that the cylinders and the clevises do not bind. Never extend or retract spread cylinders with tower legs resting on the stub towers. If the cylinders are fully extended or retracted the pressure to the cylinders must be stopped immediately. Never utilize more than 2500 psi when operating spread cylinder. Stay clear of tower legs when extending or retracting the spread cylinders. All owners of SEA DRAGON amusement rides are to order and install four (4) decals number 22193005 as shown on this bulletin, one per stub tower.

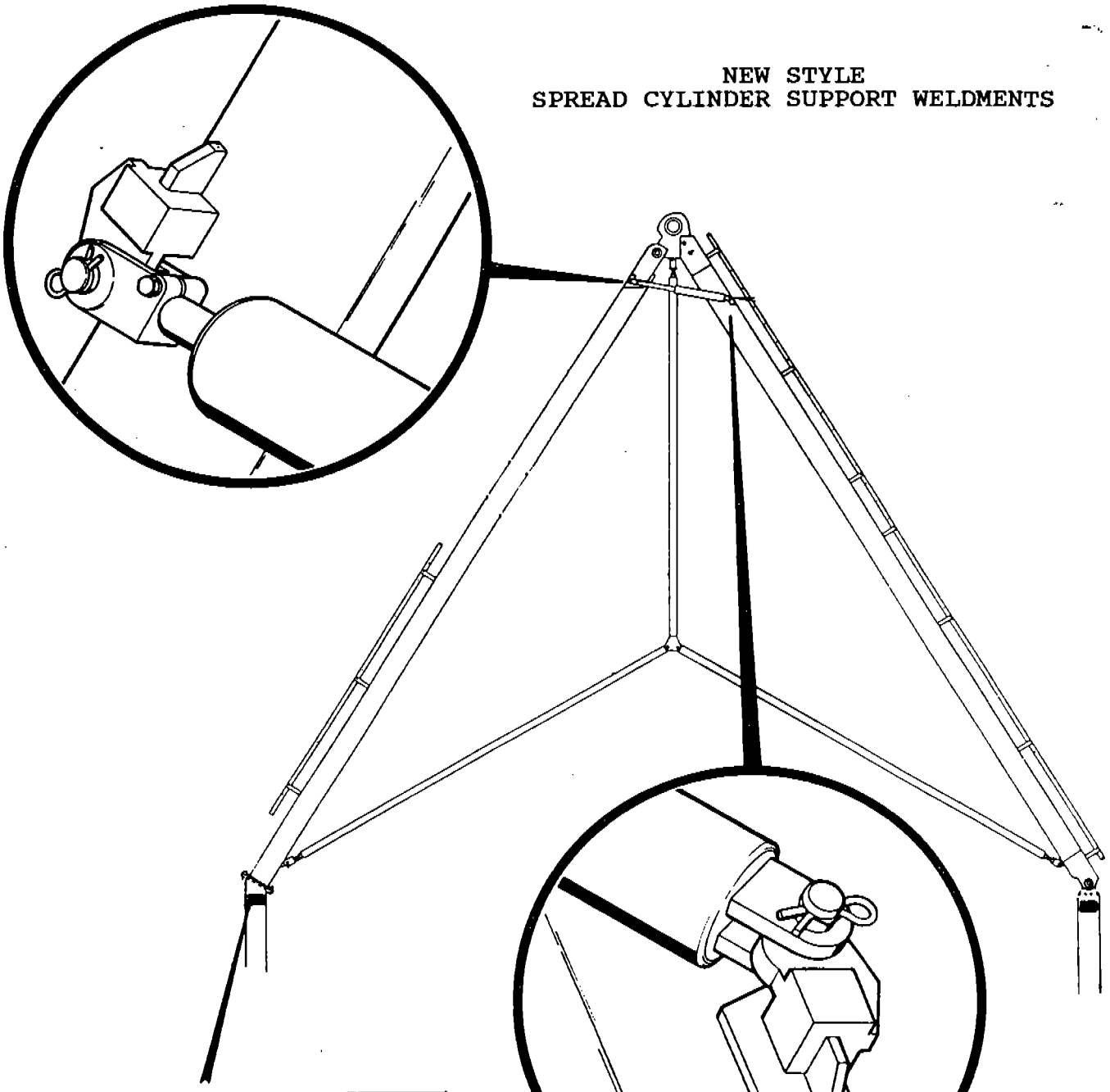
All work must be performed by qualified personnel, capable of understanding the function of the parts and their proper installation.

NOTICE

Use only those components authorized, specified or provided by Chance Rides, Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with any unauthorized alterations and/or modifications or additions and installations of unauthorized components.

NEW STYLE
SPREAD CYLINDER SUPPORT WELDMENTS



CAUTION

**MOVING OBJECTS
CAN CAUSE INJURY
STAY CLEAR
OF TOWER LEGS DURING
SET-UP AND TEAR-DOWN.**

APPLY DECAL TO STUB TOWERS
(4 PLACES)

NUMBER: B387R1082-0

DATE: JULY 27, 1990

SUPERSEDES:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: All Units - Chance Rides, Inc.

All Units - Chance Manufacturing Co., Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with rides produced by Chance Manufacturing Company, Inc.

Ride: SEA DRAGON Subject: Caution Step - Decals

Chance Rides, Inc. has become aware that it is possible for a person to step between the vehicle and the platform on the SEA DRAGON ride. This may result in injury to the person. **ALL OPERATORS MUST VERBALLY CAUTION PERSONS AS THEY STEP INTO AND OUT OF THE SEA DRAGON VEHICLE.**

The space between the vehicle and the platform is required in order to maintain a minimum safe clearance during operation. This clearance may vary due to wind or other external factors.

A safety decal kit has been developed to help alert persons as they enter and exit the vehicle. Chance Rides, Inc. requires all owners/operators of SEA DRAGON amusement rides to order the following kit and to install it as shown on the reverse side of this bulletin. Order kit number K387R1082-0 which contains the following decals. This kit is being offered free of charge, if ordered within 90 days of the date on this bulletin.

Item No.	Part No.	Description	Quantity Required
1	22197902	Caution - Watch Your Step	10
2	22197904	Caution - Step Down	10
3	22197903	Caution - Watch Your Step	10

Complete the attached Certification Of Compliance and return it to Chance Rides, Inc. within fifteen (15) days from the receipt of the kit.

Factory and Sales Office: 4219 Irving · P.O. Box 12328 · Wichita, Kansas 67277-2328 · (316) 942-7411 · FAX: (316) 942-7416

All work must be performed by qualified personnel, capable of understanding the function of the parts and their proper installation.

NOTICE

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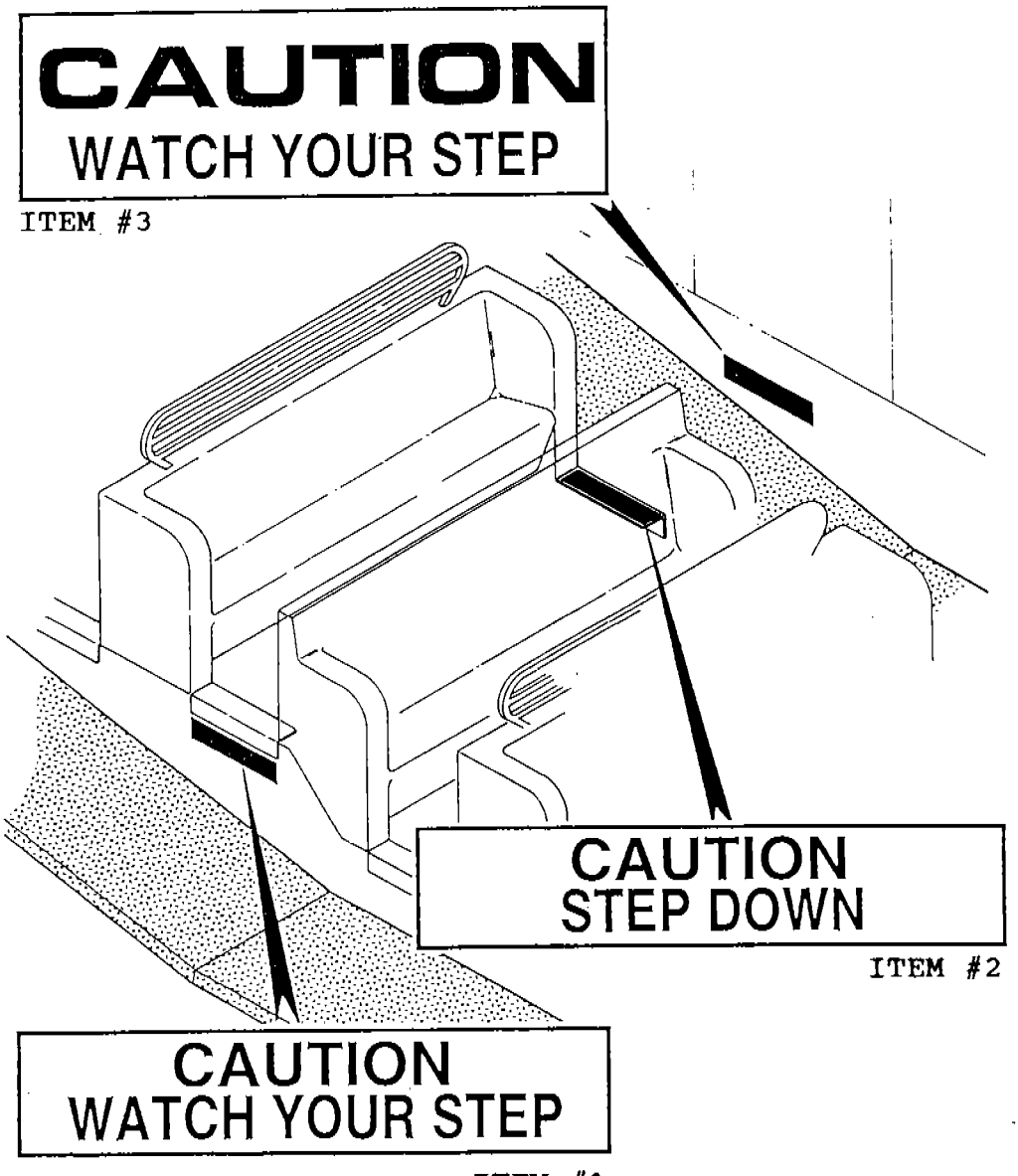
Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with any unauthorized alterations and/or modifications or additions and installations of unauthorized components.

Installation Instruction for Kit No. K387R1082-0.

1. Apply one CAUTION - WATCH YOUR STEP (ITEM #1) decal just below the step sill of each of the 10 entrances to the vehicle.

2. Apply one CAUTION - STEP DOWN (ITEM #2) decal on the top of the step sill of each of the 10 exits from the vehicle.

3. Apply one CAUTION - WATCH YOUR STEP (ITEM #3) decal on the back drop just opposite and in line with each of the 10 exits of the vehicle.



NUMBER: B387R1078-0

DATE: May 22, 1990

SUPERSEDES: B72-0238-00

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: All Units - Chance Rides, Inc.
All Units - Chance Manufacturing Co., Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with rides produced by Chance Manufacturing Company, Inc.

Ride: SEA DRAGON Subject: Lap Bar Adjustment

Chance Rides, Inc. requires all owners of SEA DRAGON amusement rides to inspect the lap bars for proper adjustment. If the lap bars are not adjusted properly cracks can develop adjacent to the weld joining the stainless steel lap bar to the main cross tube, as shown, as point "A" in the following illustration. If upon inspection it is found that the lap bars are out of adjustment, they must be inspected at both ends at point "A" for small cracks adjacent to the weld on the cross tube or the stainless steel tube. Report any cracks to Chance Rides, Inc.

Inspect the release of each lap bar to see that it does not slam into the "UP LOCK" position when released. Proper adjustment releases the bar from the "DOWN LOCK" position and lifts it upward so that it stops at approximately 45 degrees as shown in "C", allowing the passengers to move it on into the "UP LOCK" position.

Remove the left hand seat cover, "when sitting in the seat", to gain access to the return spring for adjustment.

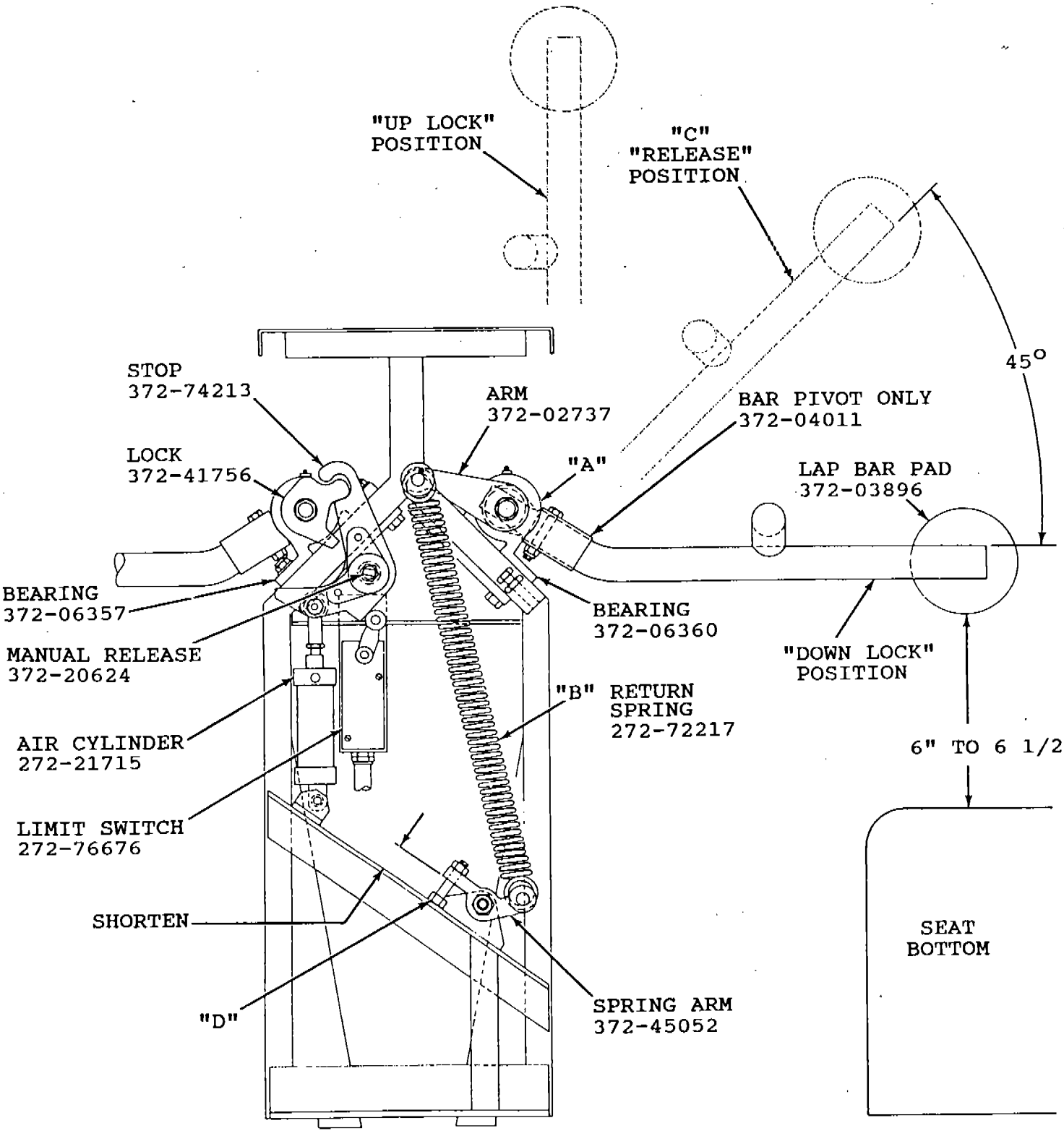
Shorten the length of the stop bolt "D" to reduce the tension on return spring "B" until release of the lap bar is reduced o that it does not move directly into "UP LOCK" but swings up and settles at approximately 45 degrees as shown at "C".

All work must be performed by qualified personnel, capable of understanding the function of the parts and their proper installation.

NOTICE

Use only those components authorized, specified or provided by Chance Rides, Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with any unauthorized alterations and/or modifications or additions and installations of unauthorized components.



INSPECT FOR CRACKS AT "A"

Number: B387R1053-0

Date: March 23, 1990

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: All Units - Chance Rides, Inc.

All Units - Chance Manufacturing Co. Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with rides produced by Chance Manufacturing company, Inc.

Ride: SEA DRAGON

Subject: Seat Back Grab Rails and Safety Decals

A kit is now available to provide additional safety to passengers as they enter and exit the SEA DRAGON. Chance Rides, Inc. requires that each owner of SEA DRAGON amusement rides install this kit and return the attached Certification Of Compliance within 15 days from receipt of the kit.

Order kit number K387R1053-0, which includes all necessary parts and hardware for one complete ride. Install the kit using the instructions provided on the reverse side of this bulletin.

All work must be performed by qualified personnel, capable of understanding the function of the parts and their proper installation.

NOTICE

Use only those components authorized, specified or provided by Chance Rides, Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with any unauthorized alterations and/or modifications or additions and installations of unauthorized components.

Factory and Sales Office: 4219 Irving · P.O. Box 12328 · Wichita, Kansas 67277-2328 · (316) 942-7411 · FAX: (316) 942-7416

PARTS LIST

The following parts are included in Kit No. K387R1053-0:

Item Number	Part Number	Description	Quantity Required
1	3-7822300	Template	1
2	3-0378512	Support Braces	4
2	3-0378513	Support Braces	4
3	3-3096500	Grab Rail	4
4	6-1144300	1/4-20 x 1-1/4 P.H.	32
5	2-2193002	Safety Decal Seat Back (387-104-001)	10
6	2-2193003	Safety Decal Seat Back (387-104-002)	10
7	2-2193004	Safety Decal Seat Back (387-104-003)	10

INSTALLATION INSTRUCTIONS

1. Remove both seat sides from the seats indicated in Illustration A.

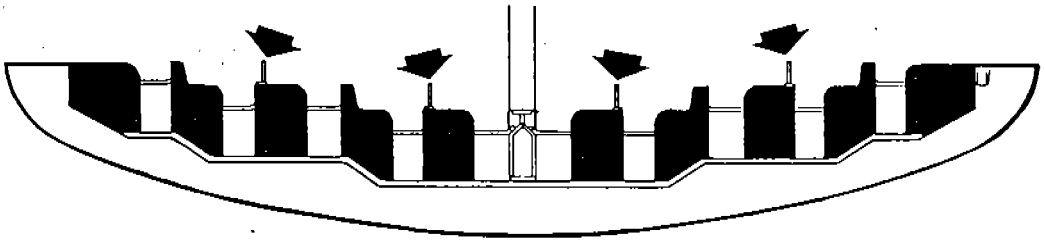


ILLUSTRATION A

2. Position template (Item #1) over seat back, as shown in Illustration B. Center template and drill holes (8 places) marked by template using a 9/32" drill bit.

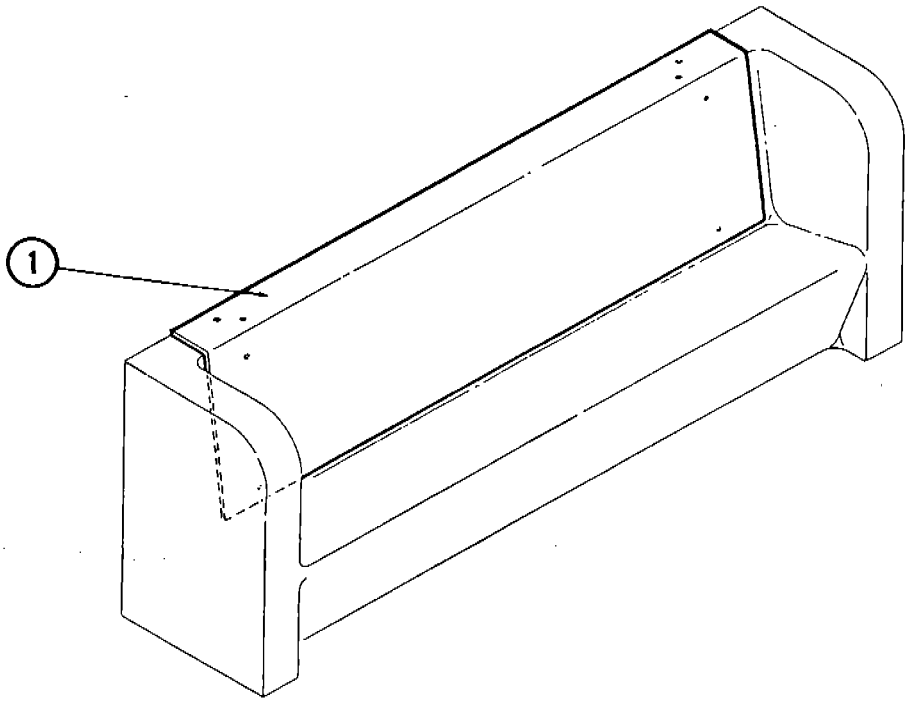


ILLUSTRATION B

3. Install grab rail support braces (Item #2) as shown in Illustration C, on inside of seats with 1/4-20 x 1-1/4 bolts supplied with the kit (Item #4). Braces have tapped holes. Remove any rivet which prevents brace from sitting flush with seat back.

4. Mount grab rail (Item #3) on top of seat back as shown in Illustration C. Use 1/4-20 x 1-1/4 bolts to secure in place.

5. Repeat this procedure on the other three remaining seats as identified in Illustration A.

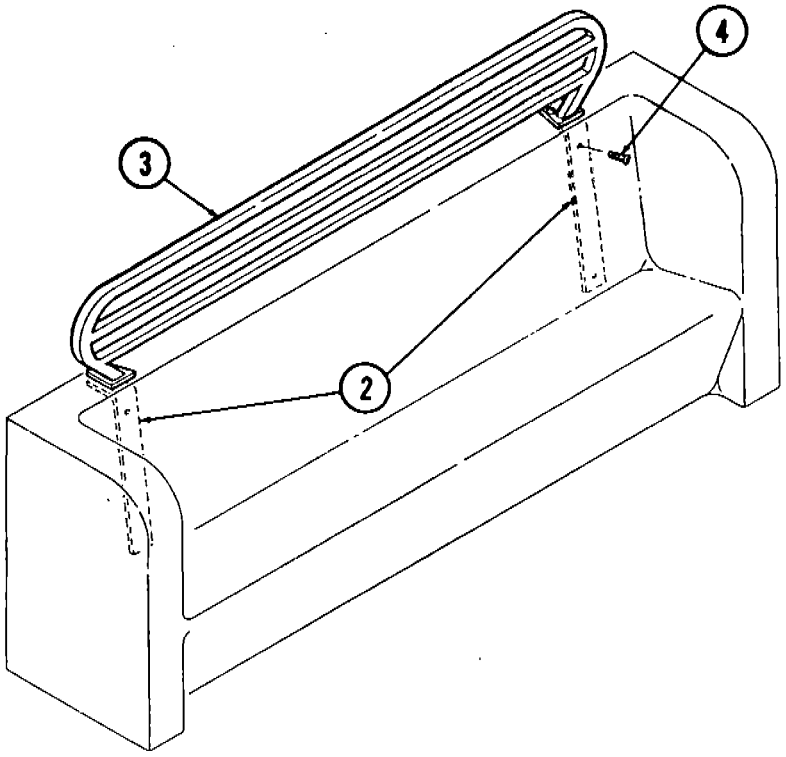


ILLUSTRATION C

6. Mount safety decals (Item #5, 6, and 7) over old decals on seat backs and at mast area so that it is visible to the passengers, as shown in Illustration D.

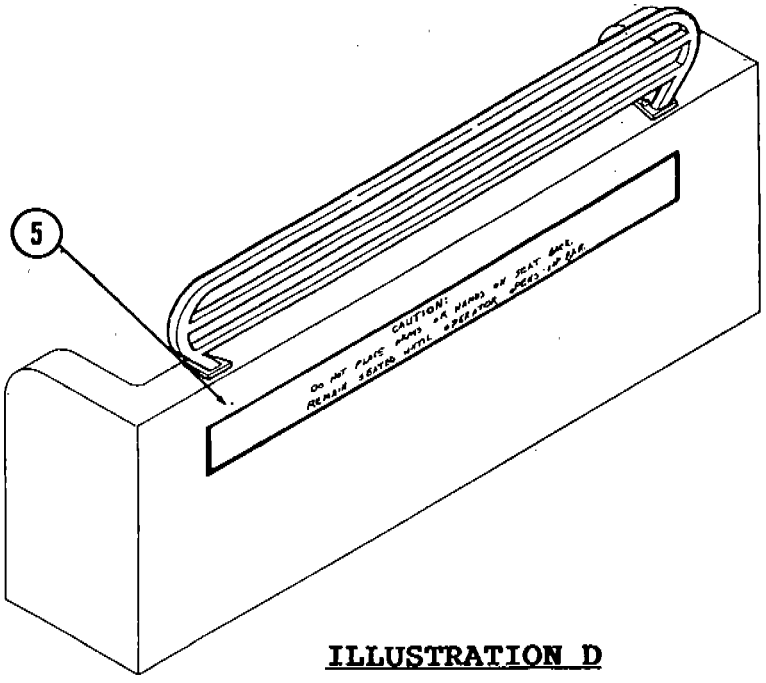


ILLUSTRATION D

NUMBER: B387R1155-A
DATE: MAY 9, 1994
SUPERSEDES: B387R1155-0

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: All Units - Chance Rides, Inc.
All Units - Chance Manufacturing Co., Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with rides produced by Chance Manufacturing Company, Inc.

Ride: SEA DRAGON Subject: Safety Notice

In an effort to maintain the highest level of safety, Chance Rides, Inc. has reviewed the action of the SEA DRAGON amusement ride and the standard operating safety practices. For the safety of all passengers, Chance Rides, Inc. has revised its standard operating policy for the SEA DRAGON. Chance Rides, Inc. requires all owner/operators of the SEA DRAGON rides to adopt the new safety policies, outlined in this bulletin, into practice.

All safety announcements given to passengers as they load should include, but not be limited to the following:

1. Watch your step while entering and existing vehicle.
2. Secure all lose articles.
3. Keep hand and feet inside vehicle.
4. To properly ride this ride, all passengers should be able to sit upright and hold onto lap bar.

In addition to the above safety announcement items, persons who are pregnant or have conditions that can be aggravated by this ride should view this ride for potential risks before riding. Persons who are visibly ill or under the influence of drugs or alcohol are not permitted to ride. Persons who cannot be properly secured are not permitted to ride.

Chance Rides, Inc. has also increased the height restrictions for passengers on the SEA DRAGON ride. **NO ONE UNDER 48 INCHES IN HEIGHT SHALL BE PERMITTED TO RIDE UNLESS ACCOMPANIED BY A RESPONSIBLE ADULT.**

Chance Rides, Inc. has developed a NOTICE TO PASSENGERS decal, part number 22181608, available at no charge if ordered within 90 days of the date on this bulletin. All owner/operators of the SEA DRAGON amusement rides are required to either order and install this decal on the entrance fence or to post signage of similar working in a predominate location.

Factory and Sales Office: 4219 Irving · P.O. Box 12328 · Wichita, Kansas 67277-2328 · (316) 942-7411 · FAX: (316) 942-7416

CHANCE RIDES INC.

RECEIVED
May 16 1994
BUREAU OF
FAIR RIDES INSPECTION

May 9, 1994

Dear Customer:

The enclosed bulletin, number B387R1155-A, supersedes bulletin B387R1155-0. Any copies of bulletin B387R1155-0 should be destroyed and all references to height restrictions on the SEA DRAGON amusement ride should follow the printed information contained in bulletin number B387R1155-A.

Bulletin number B387R1155-A is being issued for clarification purposes only. If you have any questions regarding this bulletin, please feel free to contact me.

Sincerely,

Steven Laycock
Product Safety Manager

SL:da

Enclosure(s)

P.O. Box 12328 • Wichita, Kansas 67277-2328 U.S.A.
For No. 1 in Customer Service Call 1-800 CHANCE-1 (1-800-242-6231)
Telephone 316-942-7411 • FAX 316-942-7416

NUMBER: B387R1155-0

DATE: APR. 29, 1994

SUPERSEDES:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: All Units - Chance Rides, Inc.
All Units - Chance Manufacturing Co., Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with rides produced by Chance Manufacturing Company, Inc.

Ride: SEA DRAGON Subject: Safety Notice

In an effort to maintain the highest level of safety, Chance Rides, Inc. has reviewed the action of the SEA DRAGON amusement ride and the standard operating safety practices. For the safety of all passengers, Chance Rides, Inc. has revised its standard operating policy for the SEA DRAGON. Chance Rides, Inc. requires all owner/operators of the SEA DRAGON rides to adopt the new safety policies, outline in this bulletin, into practice.

All safety announcements given to passengers as they load should include, but not be limited to the following:

1. Watch your step while entering and existing vehicle.
2. Secure all lose articles.
3. Keep hand and feet inside vehicle.
4. To properly ride this ride, all passengers should be able to sit upright and hold onto lap bar.

In addition to the above safety announcement items, persons who are pregnant or have conditions that can be aggravated by this ride should view this ride for potential risks before riding. Persons who are visibly ill or under the influence of drugs or alcohol are not permitted to ride. Persons who cannot be properly secured are not permitted to ride.

Chance Rides, Inc. has also increased the height restrictions for passengers on the SEA DRAGON ride. **NO ONE UNDER 48 INCHES IN HEIGHT SHALL BE PERMITTED TO RIDE.**

Chance Rides, Inc. has developed a NOTICE TO PASSENGERS decal, part number 22181608, available at no charge if ordered within 90 days of the date on this bulletin. All owner/operators of the SEA DRAGON amusement rides are required to either order and install this decal on the entrance fence or to post signage of similar working in a predominate location.

Factory and Sales Office: 4219 Irving · P.O. Box 12328 · Wichita, Kansas 67277-2328 · (316) 942-7411 · FAX: (316) 942-7416

NOTICE TO PASSENGERS

1. NO ONE UNDER 48 INCHES IN HEIGHT MAY RIDE.

2. PERSONS WHO ARE PREGNANT OR HAVE A CONDITION THAT COULD BE AGGRAVATED BY THIS RIDE SHOULD VIEW THIS RIDE FOR POTENTIAL RISKS BEFORE RIDING.

3. PERSONS WHO ARE VISIBLY ILL OR UNDER THE INFLUENCE OF DRUGS OR ALCOHOL ARE NOT PERMITTED TO RIDE.

4. KEEP HANDS AND FEET INSIDE VEHICLE.

5. TO PROPERLY RIDE THIS RIDE, ALL PASSENGERS SHOULD BE ABLE TO SIT UPRIGHT AND HOLD ONTO THE LAP BAR.

6. PERSONS WHO CANNOT BE PROPERLY SECURED ARE NOT PERMITTED TO RIDE.

22181508

Number: B72-0214-00

Date: 2-11-81

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers: UNITS 4 THROUGH 11

Ride: SEA DRAGON

Subject: LAP BAR SYSTEM

Chance Manufacturing Co., Inc. has developed a lap bar conversion kit (K72-0214-00) for the Sea Dragon. This kit replaces the air over hydraulic actuation of the lap bars to improve reliability and reduce maintenance. The new system retains the automatic locking features of the original system, but actuation of the bars is controlled by the passengers with a spring retraction for release.

The kit has been designed for field installation by the ride owner with no welding or cutting required. This kit is offered at no charge provided original components are returned to Chance.

The kit should be ordered from our parts department. Field service of factory installation will be available at a nominal cost.

LAP BAR CONVERSION KIT NUMBER K72-0214-00 CONSISTING OF:

QUANTITY	DESCRIPTION	D.P. NUMBER
1	SERVICE BULLETIN	B72-0214-00
10	AIR CYLINDER - SMT 1-1/8 x 1	273-21715
10	EXTENSION SPRING #68	272-72217
9	ADAPTOR CONNECTOR TEE #205106	685-01816
10	ADAPTOR CONNECTOR 90° #205522	685-01612
50	TUBING INSERT 3/8" #246089	685-01700
1	ADAPTOR CONNECTOR 90° #205102	685-01606
1	BUSHING REDUCER /1/2 x 1/4 NPT	688-27008
1	CLOSE NIPPLE 1/4 NPT	688-27658
10 FT	1/2" SYNFLEX, BLACK #3250-0810	490-80120
60 FT	3/8" SYNFLEX, RED #3250-0612	490-80102
6	TUBING INSERT 1/2" #246090	685-01702
10	LOCK, LAP BAR 387-040-1	372-41756
10	STOP, LAP BAR 387-041-1	372-74213
10	MOUNT 387-042-1	372-45052
10	ARM 387-043-1	372-02737
10	SLEEVED PILLOW BLOCK ASSY. 387-046-1	372-06357
10	HEX HEAD CAPSCREW 1/2-13 x 2-1/4"	686-08426

20.....SHIM 387-039.....372-66964
10.....PILLOW BLOCK ASSEMBLY 387-050-1.....372-06360
10.....HEX HEAD CAPSCREW 3/8-16 x 1-1/2".....686-07670
10.....HEX HEAD CAPSCREW 5/16-18 x 1".....686-07494
10.....WROT WASHER 1/2".....696-85316
10.....FLAT WASHER SAE 1/2".....696-85318
10.....CLEVIS PIN 1/2 DIA X 1-1/4".....290-52355
10.....CLEVIS PIN 1/2 DIA X 1-3/4".....290-52357
10.....HEX LOCK NUT 1/2-13.....691-47824
10.....HEX JAM NUT 3/8-16.....691-47604
10.....HEX LOCK NUT 5/16-18.....691-47812
20.....COTTER PIN 1/8 x 1".....699-51630
10.....BEARING #5202SBKFF.....272-04996
(INSTALL IN 387-041 BEFORE SHIPPING)
1.....OPERATOR 10250T-4011.....273-48416
1.....COVER 7420-B.....272-20794
1.....KNOB 10250T KB.....273-38976

1.....DRAWING K72-0214-00 SHEETS: 1,2,3,4,5,6 - SEAT KIT
1.....DRAWING 388-440 LAP BAR CONTROL INSTALLATION
1.....DRAWING 387-161B LAP BAR AIR SCHEMATIC

Before installing this kit, read the instructions completely and familiarize yourself with the parts in the kit. Make certain all parts have been received. If any parts are missing, notify Chance Manufacturing Co., Inc. immediately. Do not substitute an inferior grade or material or parts.

All work must be performed by competent, qualified mechanics capable of understanding the functions of these parts and their proper installation.

If any questions arise concerning the installation of this kit, please contact Chance Manufacturing Company for assistance.

INSTALLATION INSTRUCTIONS

To change from the self-operating air over oil lap bar system to air and manual system, use the following steps:

1. Remove the seat end covers and lower kick panels from all seats.

2. See Sheet #2 of K72-0214-00 for existing configuration of hydraulic and air components.

3. See Sheet #3 of K72-0214-00 and remove or disconnect all parts of hydraulic or air system not shown. Replace existing air cylinders with those provided in kit. Remove rod end and jam nut from old cylinders and reuse.

4. See sheet #4 of K72-0214-00 for new plumbing installation. Use parts provided in kit to plumb. See Drawing #387-161B, lap bar air schematic.

5. See Sheet #5 of K72-0214-00 and install all new component parts as shown. Only one end of center lap bar stand is shown, but installation is typical for all lap bar stands. If for any reason the spline shaft on either end of the lap bar has been twisted, it must be straightened, or a new lap bar installed. Lap bars may be returned to factory for straightening. After installation of new components, check height of lap bar in the down and locked position. From the bottom of the lap bar, to the top of the seat, measured vertically should be $5\frac{1}{2}" + \frac{1}{2}"$.

6. See Sheet #6 of K72-0214-00 for new electrical central switch mounting and conduit re-routing as well as new electrical schematic. See drawing #388-440-2 Assembly for Installation of New Switch and Cover.

7. Before replacing end panels and kick panels, cycle lap bars several times to be sure of proper operation.

8. Replace end panels and kick panels.

CHANCE MANUFACTURING CO., Inc.

Number: B72-0211-00

Date: 9-9-80

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers: ALL UNITS

Ride: SEA DRAGON

Subject: KEEL INSPECTION

A condition has occured on one ride in which cracks occured in the welds on the underside of the boat keel. We are requesting that all owners of Sea Dragons immediately inspect the areas described in the following illustration, and report your findings to Chance Manufacturing Co., Inc.

These areas should be established as "Special Care Areas" and given regular weekly visual inspections by qualified individuals.

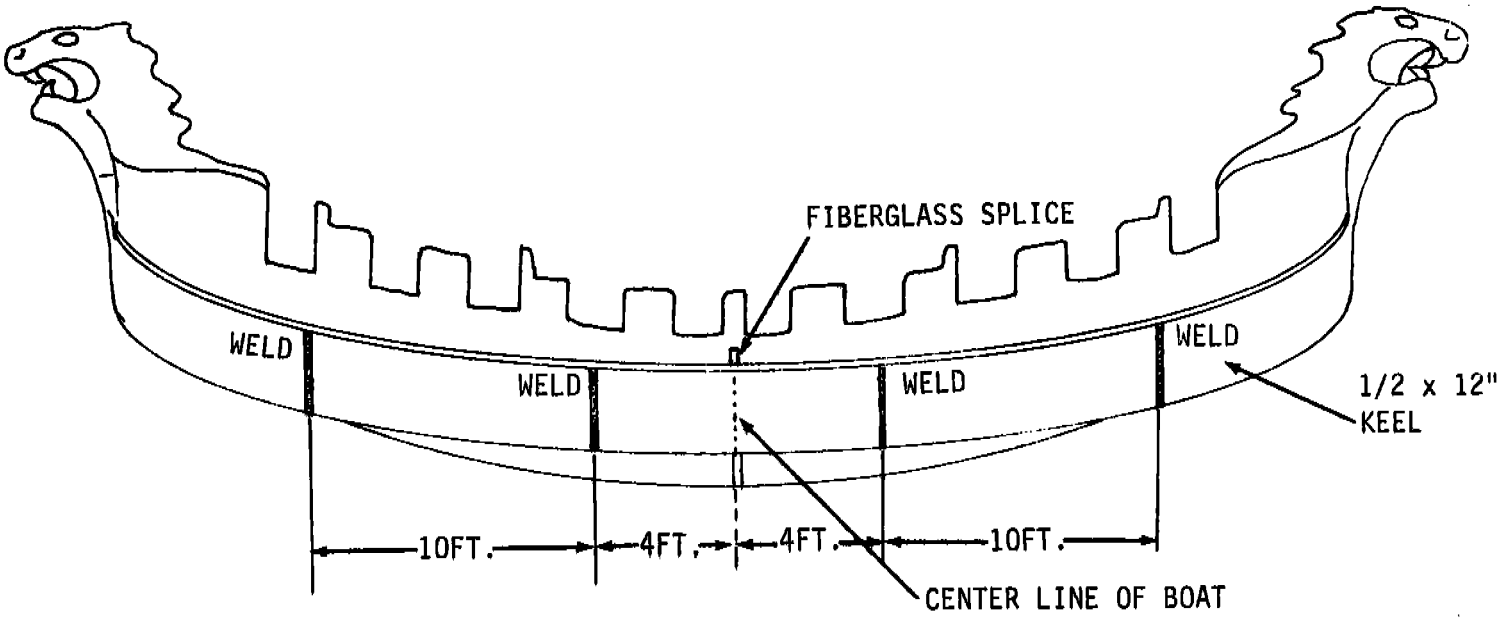
All inspections must be performed by competent, qualified mechanics capable of understanding the function of the parts.

The attached Certification of Compliance must be completed and returned to Chance Manufacturing Co., Inc. within seven (7) days of receipt of this bulletin.

If you have any questions concerning this bulletin, please contact Chance Manufacturing Co., Inc. for assistance.

Inspection of the four welds on the bottom of the keel should be made. Welds are located one to each side of center, approximately four (4) feet, and one approximately fourteen (14) feet either side of center (or ten (10) feet from first weld).

All welds should be visually inspected for cracks or signs of stress on a weekly basis.



BOAT TILTED TO SIDE FOR EASE OF ILLUSTRATION

CHANCE MANUFACTURING CO., Inc.

Number: B72-0209-00

Date: 7-22-80

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers: ALL UNITS

Ride: SEA DRAGON

Subject: LAP BAR CYLINDERS

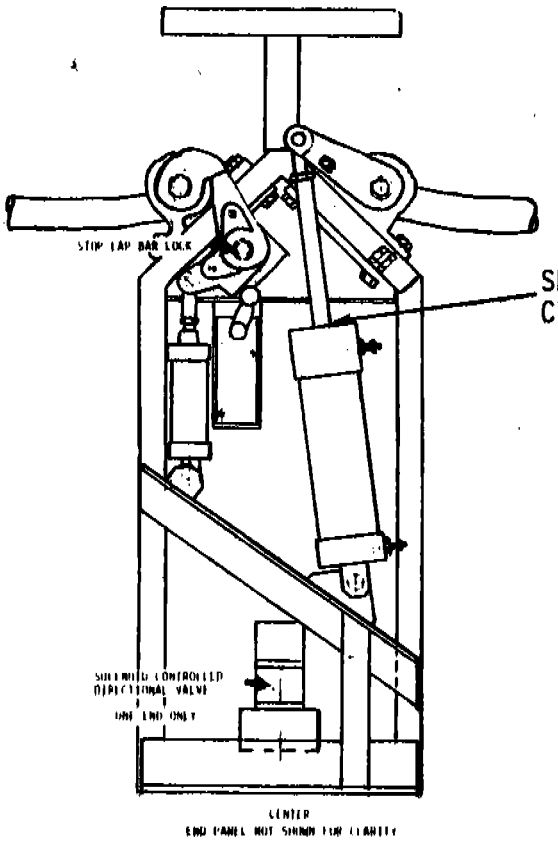
Chance Manufacturing Co., Inc. has been made aware of the fact that there may be defective seals on Sea Dragon lap bar cylinders.

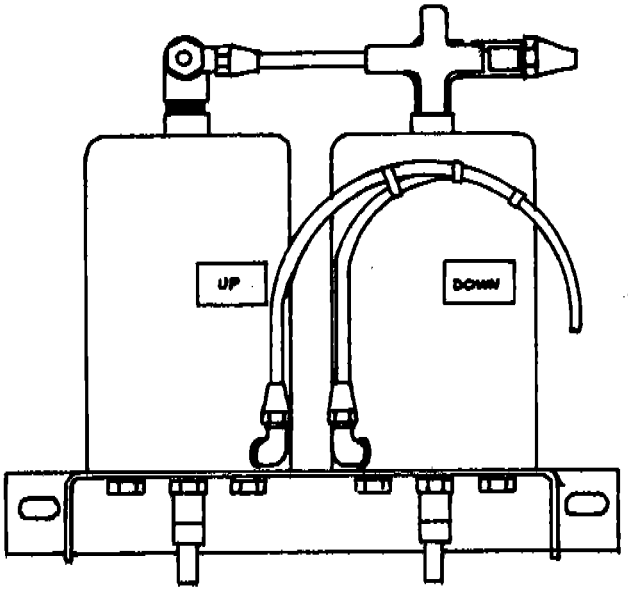
Therefore, we request all Sea Dragon owners make a thorough inspection of the lap bar cylinders and Bellofram diaphragms for hydraulic fluid leakage. This simple procedure is accomplished by removing seat end panels and checking for the presence of hydraulic fluid on or around lap bar components.

If fluid is present on either cylinders or diaphragms, Chance Manufacturing Co., Inc. has available through our parts department, replacement cylinders (#272-21708) or a diaphragm kit (which replaces a set of Bellofram diaphragms) #K72-0209-00.

Full credit will be issued upon return of defective parts, if returned to Chance Manufacturing Co., Inc. before 12-31-80.

If you have any questions concerning this inspection, please contact Chance Manufacturing Co., Inc.





BELLOFRAM DIAPHRAGMS

NOTE: This kit replaces one set only, 5 sets must be ordered for complete boat change.

PARTS LIST

QUANTITY	DESCRIPTION	PART NUMBER
1	DRAWING.(387-161A)	SHEET 2
1	DRAWING (K72-0209-00)	SHEET 1
4	1/2-20 x 3/4" HEX HEAD BOLTS	686-08274
4	1/2 to 3/8" REDUCER BUSHINGS	688-27010
1	3/8" CLOSE NIPPLE	688-27662
1	"UP" DECAL	272-21935
1	"DOWN" DECAL	272-21936
2	ADVANCE BRAND CYLINDERS	272-21713
2	1/2-13 HEX NUTS	691-47516
1	BLEED SCREW	685-64366
1	BLEED PLUG	372-54531
1	1/2 to 1/8" NPT BUSHING REDUCER	688-27006
1	DRILL TEMPLATE (ONE TO CUSTOMER)	372-78220

NUMBER: B387R1172-0

DATE: AUG. 11, 1995

SUPERSEDES:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: ALL PARK MODEL UNITS -
CHANCE MANUFACTURING CO., INC.
CHANCE RIDES, INC.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with rides produced by Chance Manufacturing Company, Inc.

Ride: PARK MODEL SEA DRAGON Subject: DRIVE ASSEMBLY

Chance Rides, Inc. has become aware that the drive assembly on some park model SEA DRAGON amusement rides may not be welded adequately. If the drive assembly was not welded adequately to the customer-furnished base plate, damage to the ride and injury to passengers or personnel may occur. This bulletin specifies the minimum length, size and location of weld required to secure the drive assembly.

Chance Rides, Inc. requires all owners of the above noted park model SEA DRAGONS to inspect the welds connecting the drive assembly to the customer furnished base plate. If the weld does not meet the specifications described in this bulletin, **DISCONTINUE OPERATION OF THE RIDE.** Inspect and weld per the instructions outlined in this bulletin. If you have any questions concerning this procedure, please contact the Chance Customer Service Department at 1-800-CHANCE1.

All work must be performed by qualified personnel, capable of understanding the function of the parts and their proper installation.

NOTICE

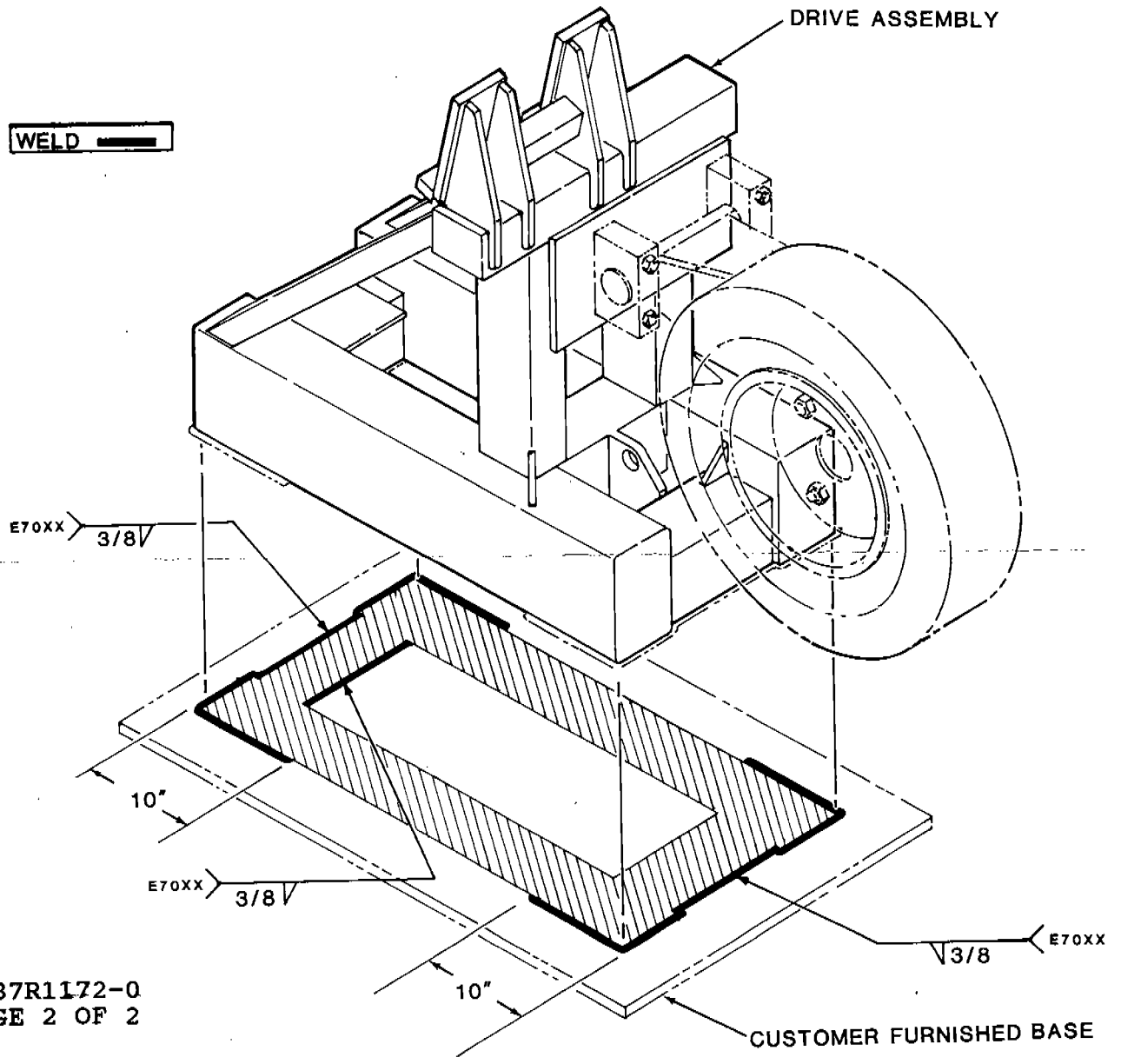
Use only those components authorized, specified or provided by Chance Rides, Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with any unauthorized alterations and/or modifications or additions and installations of unauthorized components.

INSTRUCTIONS

1. Check to determine if drive assembly has been welded per the specifications shown.
2. Visually inspect existing welds and drive assembly for cracks.
3. If no cracks are found and if the welding does not meet or exceed the specifications shown below, reweld as shown.
4. If cracks are found in existing welds, grind out welds and reweld per the specifications. If cracks are found in the drive assembly structure contact the Chance Rides, Inc. Customer Service Department.

NOTE: VIEW EXPLODED FROM BASE



SEA DRAGON

Field inspection and test guide

Manual number 24329305

SEA DRAGON

Field inspection and test guide

Contents

CHANCE RIDES, INC.
4219 Irving
P.O. Box 12328
Wichita, KS 67277-2328

phone (316) 942-7411
toll free 1-800-242-6231
fax (316) 942-7416

Introduction

Proper maintenance is essential to the safe operation of this ride. The tests and inspection points outlined in this field guide are not intended to replace the recommended maintenance schedule. This guide does not contain maintenance and repair procedures and should only be used as a ride inspection and test guide.

When repairs are necessary, use only those components authorized, specified or provided by the manufacturer. If any alterations, modifications and/or additions, installations of unauthorized components are made to the original design without the manufacturer's explicit written consent or without direct supervision by a manufacturer's representative, Chance Rides, Inc. makes no claims as to the integrity of the altered or modified ride (product).

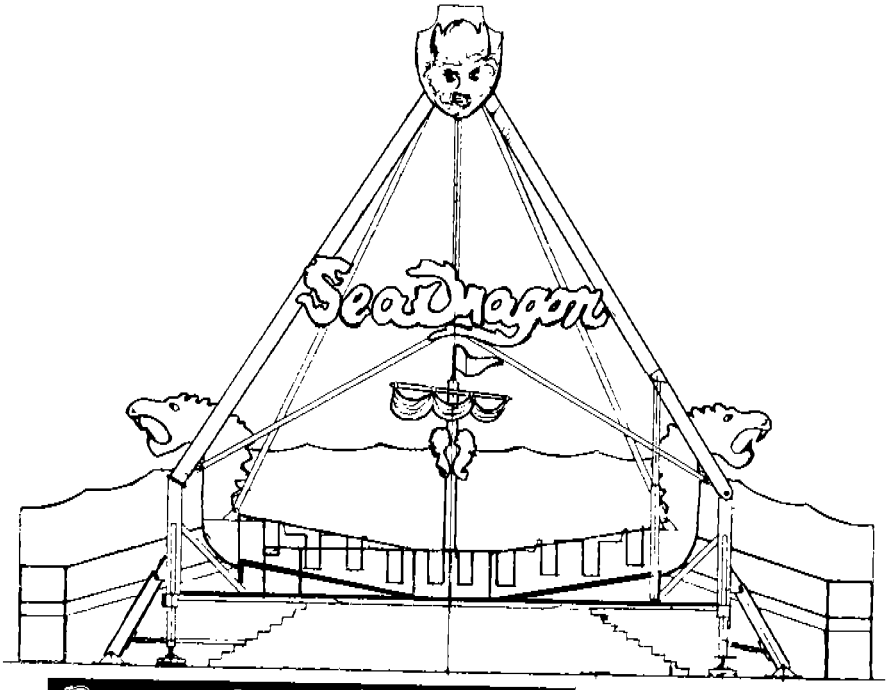
Information in this field inspection and testing guide applies only to products manufactured by CHANCE RIDES INC. built after January 1, 1986 (**Sea Dragon** serial number 387-02486 and on).

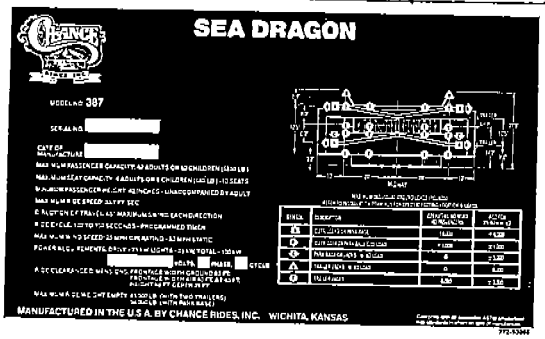
CHANCE RIDES INC., reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to such changes.

Ride description

The **Sea Dragon** is mounted on either two trailers (portable model) or a stationary base, anchored to the ground (park model). The ride has an electro-hydraulic drive system with hydraulic braking.

The ride information plaque is mounted to the stub tower brace next to the control house. It lists specifications, operating dimensions, ground loads, as well as model and serial number and date of manufacture.





The ride information plaque is mounted to the stub tower brace next to the control house. The ride information plaque shown is for example only. Always refer to the information plaque mounted to the ride being inspected.

The terms "right hand" and "left hand" as used in this manual are determined by standing in front of the ride and facing the ride.

Detailed operation and maintenance information is available in the *Sea Dragon Operation And Maintenance Manual* (manual number 24327500). For more information, or to order manuals, contact CHANCE RIDES, INC.

Operation

Operating controls

1. Main power switch - This switch turns off the three main power circuit breakers.

NOTE: Do not use this switch to stop the ride.

2. Ready indicator light - This green light indicates that the programmed drive is ready. It must be on before the start switch is operative.

3. Emergency stop switch - This switch interrupts the drive program. The ride will brake to a stop.

4. Start switch - Push this switch to start the programmed ride cycle. The following conditions must exist for the ride to operate:

- Ready indicator light must be on.
- Operator presence switch must be depressed.

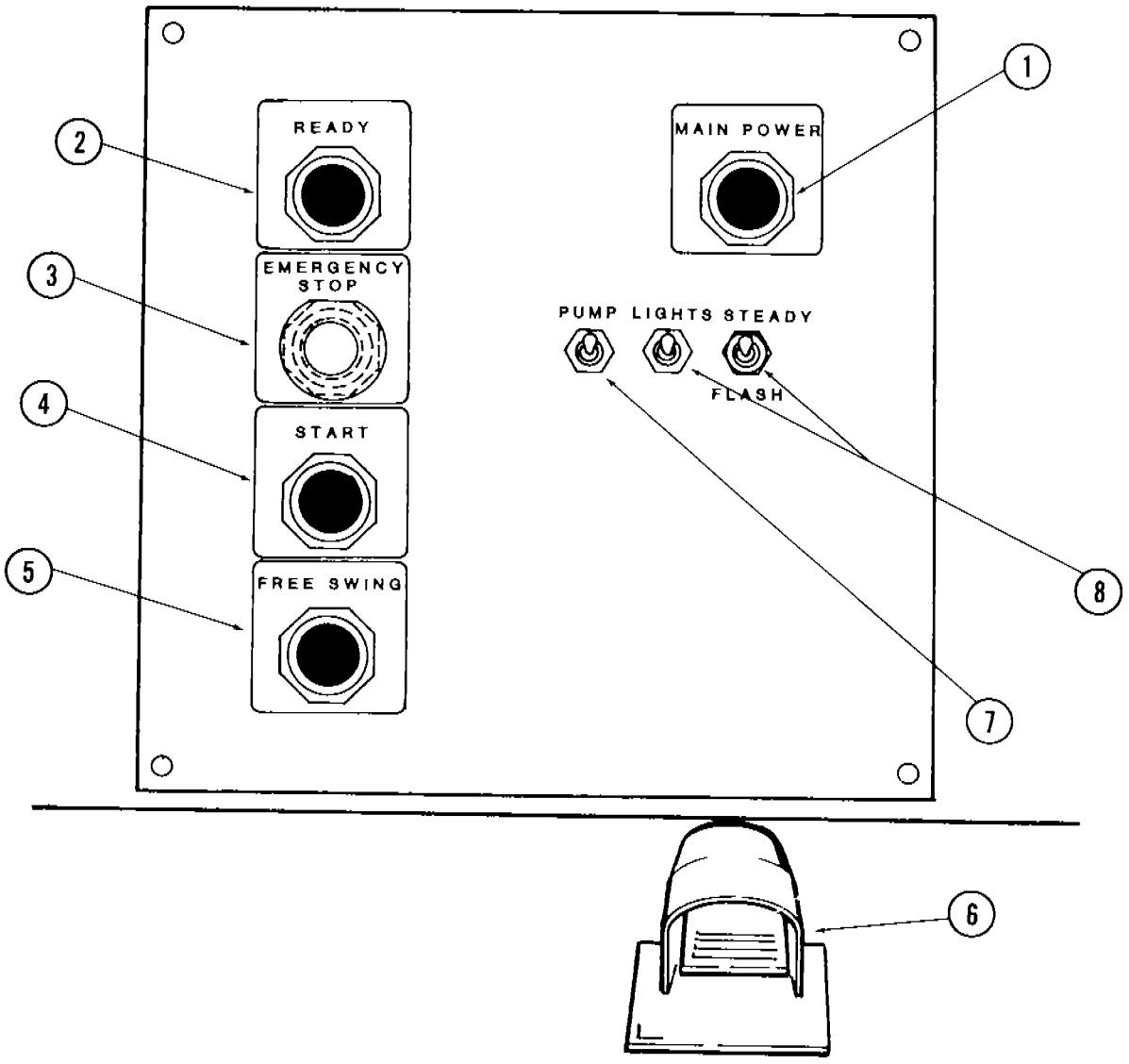
5. Free swing switch - This switch can be used to center the vehicle after the programmed ride cycle has ended, to load and unload passengers. During the programmed cycle, the switch can be held down to prolong the free swing portion of the program. As soon as the switch is release, the ride will brake to a stop.

6. Operator presence switch - This foot switch must be depressed to operate the start or free swing (jog) switches. If the switch is released, the drive program is interrupted and the ride will brake to a stop.

7. Pump switch - This switch controls the hydraulic pump. Turn the switch off before leaving the control house. Do not stop the ride by turning off the pump.

8. Lights switches - Two switches control the decorative lighting on the ride. One switch turns the lights on and off. The other switch controls the flashing of the lights.

Operator's control panel
1. Main power switch
2. Ready indicator light
3. Emergency stop switch
4. Start switch
5. Free swing switch
6. Operator presence switch
7. Pump switch
8. Lights switches.



9. Lap bar switch (not shown) - Use this switch (located on the boat) to lower and open the lap bars.

Operating the ride (Test cycle)

The operating procedure is provided in the *Sea Dragon Operation Manual and Parts Catalog*. Make sure that a copy of the manual is readily available. This ride requires two operators.

As the ride runs through the programmed cycle, check the ride profile for correct operation sequence, speed and swing angle. Check the overall performance of the ride based on previous operating performances of the individual ride.

General inspection and testing

Testing

Field performance testing of amusement rides[1]

The following specifications conform with ASTM F846 standard guide for *Testing Performance Of Amusement Rides And Devices*, in effect on date of ride manufacture.

Erection or installation testing

Each erection or installation of a ride shall be given an inspection prior to carrying passengers that shall include but not be limited to the following:

a. Determine that ride has been erected according to the set-up procedures in the operations manual.

b. Inspect field inspection points listed in the *Field Inspection Guide*.

c. Visual check of all passenger carrying devices including restraint devices and latches, and the pins and capscrews securing them.

d. Visual inspection of entrances, exits, stairways and ramps and devices securing them.

e. Test of all communications equipment necessary for operation of the ride or device.

f. Operate the ride to determine that direction of travel conforms to the information plate, ride manual field inspection guide of specification sheet.

g. Operate the ride for a minimum of three ride cycles to determine that the ride speed does not exceed the speed specified in the information plate, ride manual field inspection guide of specification sheet.

Daily pre-opening inspection

This inspection shall include a daily inspection of all items as specified in the previous item (erection or installation testing).

1. B090R1002-0 May 14, 1986

Documented field performance and operational testing
Documentation and certification shall be performed by a person who by demonstrated education and field experience is knowledgeable with construction, erection, operation, maintenance and repair of amusement rides.

Operational load testing
Any operational test including load testing performed on a ride shall be completely non-destructive in nature. Overload testing exceeding the rated limits listed on the information plate, operation manual, field inspection guide or specification sheet shall be deemed inappropriate. Where maximum total passenger weight is not readily available, passenger capacity multiplied by 170 pounds per adult and/or 90 pounds per child may be used.

Non destructive testing with inert loads can be accomplished only with special care as to placement of the load so that it is centered both vertically and horizontally as would be the load of the passenger it replaces. Extra seat reinforcement must be used to offset any load concentration created. Such tests shall be documented and certified as non-destructive by the person making the test and the agency requiring it. Results of all load tests shall be communicated to the factory upon completion by the certifying agency.

Conducting a non-destructive operational load test assures the testing agency only that it will carry a given load in a given way at a given moment and in no way assures future safety of the ride.

Conducting a destructive load or overload test also assures the testing agency that it will carry a given load in a given way at a given moment and in no way assures future safety of the ride. However, it also introduces the probability of inflicting serious irreparable damage to the ride that may or may not be apparent at the time of the test.

CHANCE RIDES, INC. considers inert load testing of any nature appropriate only for situations requiring experimental development of stress-strain testing during prototype development. A certificate of load test on the prototype and certification that each production ride met the design criteria when it was manufactured is available from the factory upon request.

Non-destructive testing[2]

REFERENCE STANDARD *1. ASTM-F24 Standard On Amusement Rides And Devices*
a. F846-86 Testing Performance Of Amusement Rides
b. F853-86 Maintenance Procedures For Amusement Rides And Devices
c. F893-87 Inspection Of Amusement Rides And Devices

CHANCE RIDES, INC., at the time of design and manufacture, determines by calculations and testing of a prototype amusement ride the appropriateness for use, of not only the parts, but the entire system of a newly designed ride. These calculations and tests are utilized to, as feasibly as possible, determine the requirements for expected design life of major components. Based on this design criteria, CHANCE RIDES, INC. does not identify critical components on amusement rides to be singled out for non-destructive testing.

If through field experience, there is an indication that a structural or mechanical problem may develop on rides currently operating, CHANCE RIDES, INC. will notify owners by bulletin of the recommended procedures to inspect and correct the possible problem. Any possible defect which could affect the continued safe or proper operation of the ride should be reported immediately to the manufacturer by the owner/operator. This information is necessary so that a determination can be made for either the repair or replacement of the possible defective parts.

Field repairs should not be undertaken without the approval and proper instructions from the manufacturer and should be performed by qualified personnel. These persons should have a complete understanding of both the component's function and the manufacturer's instructions.

It is the responsibility of the individual inspector to thoroughly inspect the ride as he deems necessary based on his knowledge and field experience and manufacturer's recommendations. If the inspector finds an area or component that could be a problem, structural or otherwise, the factory should then be notified. It is then the responsibility of the inspector to ensure that the manufacturer's recommendations for repair,

replacement or otherwise have been completed and are in compliance with the required specifications.

Load testing is a destructive form of testing and is not recommended by the manufacturer, as per previous topic "Field performance testing of amusement rides."

Fasteners

Capscrews

Capscrews used by CHANCE RIDES, INC. are classified as functional load-carrying capscrews if:

- They are used as tension members in the erection or operation of the ride

and/or

- The are required to resist shear through friction-type connections in the erection or operation of a ride.

Capscrews are selected with consideration to grade, size and quantity, using joint capacities based on tightness torques of 60% rated yield and group joint efficiencies of 62.5%

Torque requirements[6]

Capscrews must be tightened to the torque values listed in the torque chart. These values were selected to produce a tightening torque range of 60% to 70% of proof load, when tightened with a hardened washer under the nut or capscrew head (whichever is accessible for tightening). When the capscrew is tightened from the head end, apply anti-seize lubricant to the shank end of the capscrew. When the threads are lubricated, use 10% less torque to tighten the capscrew.

DO NOT TIGHTEN CAPSCREWS OVER THE RECOMMENDED TORQUE. This can damage the capscrew, due to variances in coefficients of friction and torque wrench accuracy.

Always use a torque wrench. It is impossible to accurately measure the tightness of a capscrew by other methods. Torque wrenches must be checked for accuracy twice each operating season.

Size Diameter - Threads/inch	Foot pound torque range (see notes 1 and 2) with locknut and hardened washer	
	SAE J429 Grade 5 ASTM A325	SAE J429 Grade 8 ASTM A490
1/4 - 20	5-6	7-8
1/4 - 28	6-7	8-10
5/16 - 18	11-13	15-18
5/16 - 24	12-15	17-21
3/8 - 16	19-24	27-33
3/8 - 24	22-27	31-38
7/16 - 14	30-35	45-55
7/16 - 20	35-40	50-60
1/2 - 13	50-60	65-80
1/2 - 20	55-65	75-90
5/8 - 11	95-115	130-160
5/8 - 18	105-130	150-180
3/4 - 10	165-200	235-285
3/4 - 16	185-225	260-320
7/8 - 9	270-325	380-460
7/8 - 14	295-360	415-505
1 - 8	400-490	565-690
1 - 12	440-535	620-755
1 1/8 - 7	495-600	800-975
1 1/8 - 12	555-675	900-1095
1 1/4 - 7	700-850	1135-1380
1 1/4 - 12	775-940	1255-1525
1 1/2 - 6	1215-1480	1975-2395
1 1/2 - 12	1370-1660	2220-2700

Torque chart

Torques for functional load carrying cold finished hex head capscrews with dry rolled threads, used with locknuts (see note 3), and tightened with an ASTM A325 hardened washer under the capscrew or locknut head (whichever is accessible for tightening).

This torque range will develop 60% to 70% of proof load.

Refer to ***Replacement of capscrews and locknuts*** *for conditions requiring replacement*

NOTES

1. Use anti-seize lubricant on capscrew shank when tightened from head end.

2. Use 10% less torque when anti-seize or other lubricant is used on threads.

3. Use same torque range for holes tapped in steel.

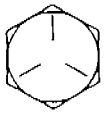
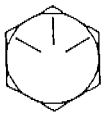
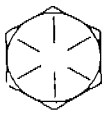
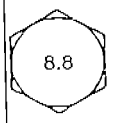
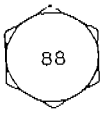
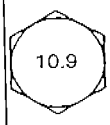
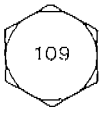
Capscrew grades

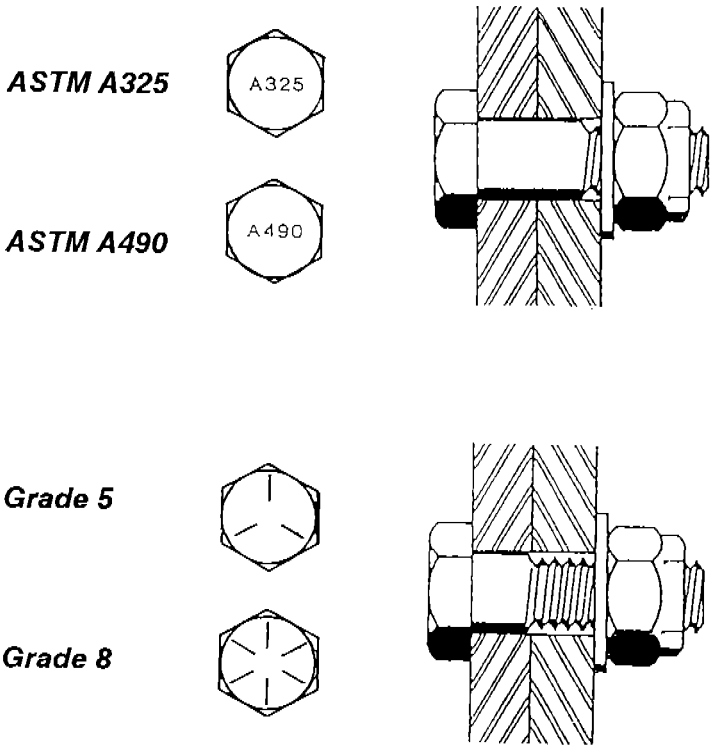
CHANCE RIDES, INC. uses only grade 5 or better capscrews and grade 8 locknuts, with A325 hardened washers for functional loads. The *Grade markings chart* shows the capscrew markings to be found on CHANCE rides. The manufacturer's identification symbols must be present on all functional load carrying capscrews.

CHANCE RIDES, INC. requires the use of cold-formed hex head capscrews with rolled threads. Hex bolts and hot formed hex head capscrews are not recommended because they may have machined threads and can have die seams along the shank.

NEVER REPLACE CAPSCREWS OR NUTS WITH PARTS OF A LESSER GRADE, OR DIFFERENT LENGTHS THAN THOSE SHOWN IN THE CHANCE PARTS CATALOG.

Grade markings for functional load carrying capscrews
Manufacturer's identification symbols must be present on all capscrews

Correct markings	Examples of unacceptable markings
SAE J429 Grade 5 Medium carbon 81,000 yield 	 **Grade 5.1** Low carbon  **Grade 5.2** Low carbon martensitic
ASTM A325 Type 1 Medium carbon Longer shank and shorter thread length than Grade 5 81,000 yield  **ASTM A325 Type 3** Corrosion resisting Longer shank and shorter thread length than Grade 5 81,00 yield 	 **ASTM A325 Type 2** Low carbon martensitic
SAE J429 Grade 8 Medium carbon 130,00 yield 	 **ISO R898** Class 8.8 Medium carbon 92,000 yield 
ASTM A490 Alloy steel Longer shank and shorter thread length than Grade 8 130,00 yield 	 **ISO R898** Class 10.9 Alloy steel 130,000 yield 



Capscrew comparison
ASTM A325 and A490 capscrews have longer shanks and shorter threads then Grade 5 and Grade 8 capscrews of the same size.

Replacement of capscrews and locknuts
When permanently installed capscrews and locknuts are disassembled for repair or adjustment, they must be replaced if they have been in service over five (5) years, or corrosion, or other damage requires over-torquing for removal. If a torque wrench is not used to measure excessive removal torques, the capscrews and locknuts must be replaced.

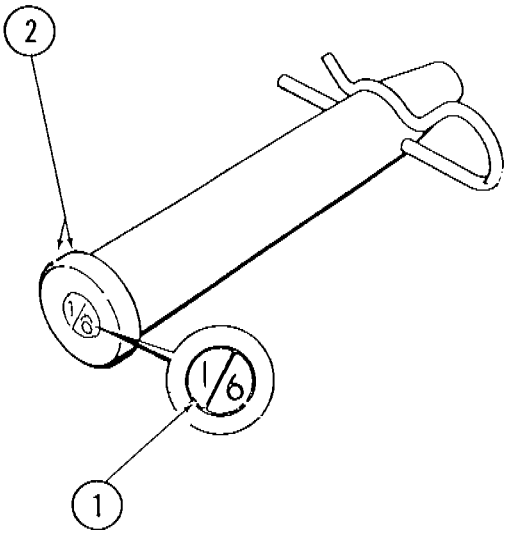
Capscrews and locknuts which are frequently disassembled for portability must be replaced each operating season. If the capscrews and locknuts become damaged, corroded or require excessive torque for removal, they must be replaced. If a torque wrench is not used to measure excessive removal torques, the capscrews and locknuts must be replaced.

Pins[4]

Tapered pins used on amusement rides are subject to deterioration due to improper use and wear. CHANCE RIDES, INC. specifies certain pins for certain applications on amusement rides. These pins have been developed over a period of years, taking into account size, design, material and hardness characteristics.

Use only the pins specified by CHANCE RIDES, INC. These pins are identified as shown in the following illustration. Always use the correct hairpin.

Pin identification
1. Date of manufacture
2. Rounded edges

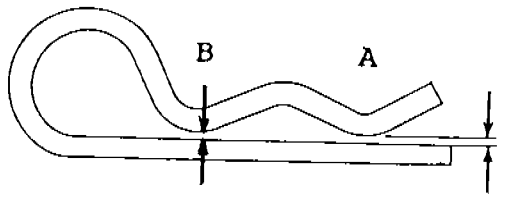


Use care when installing and removing tapered pins. Since these pins are hardened (as are hammers and punches) care must be taken to strike the pin straight on. Striking a pin at an angle can cause the pin to chip, resulting in personal injury. For this reason APPROVED SAFETY GLASSES OR GOGGLES MUST BE WORN AT ALL TIMES when tapered pins are being installed or removed. If a tapered pin is chipped, bent, or "mushroomed" on either end, discard it and replace it with a new pin.

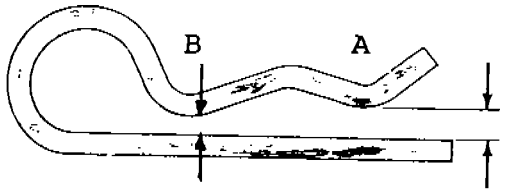
Pin keepers

All keepers (R-keys, hair pins, lynch pins, etc.) must be inspected for wear. If a keeper is bent out of shape or "sprung", it must be replaced.

Hairpins are expendable parts. After repeated use, they become worn and "sprung" as shown.



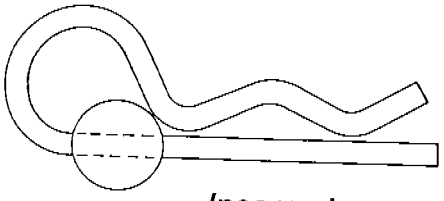
Acceptable hair pins
Dimension "A" equals dimension "B" in a relaxed position



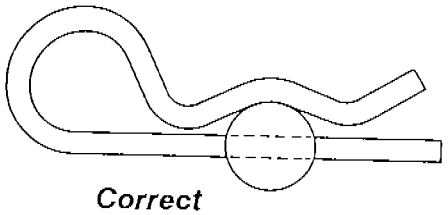
Unacceptable hair pins
Dimension "A" is greater than dimension "B" in a relaxed position

NEVER ATTEMPT TO BEND A HAIR PIN BACK INTO SHAPE. REPLACE IT WITH A NEW PART.

The correct installation of a hairpin is shown. Incorrectly installed hairpins are more likely to fail, and will distort after only a few uses.



Incorrect



Correct

CHANCE RIDES, INC. recognizes and recommends the safety procedures specified in *ASTM Standards F770 Operation Procedures for Amusement Rides and Devices and F853 Maintenance Procedures for Amusement Rides and Devices.*

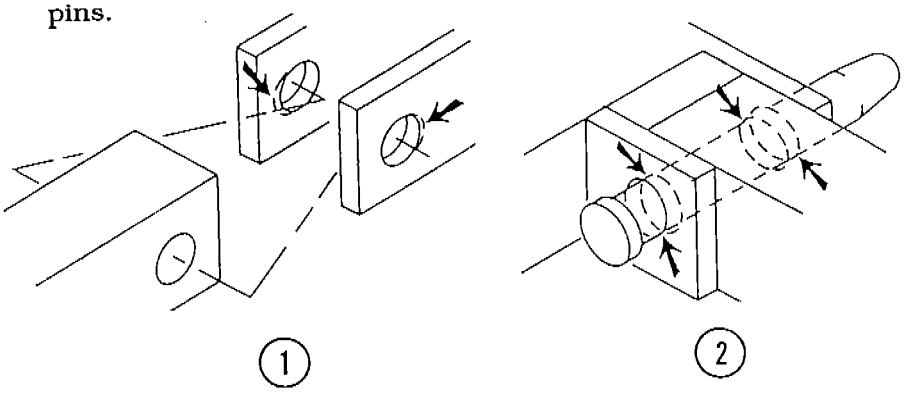
Inspection

Joint inspection

Some joints will appear to wear rapidly on new rides. This is usually a result of the holes not aligning in the mating parts. When this condition occurs it results in "point contact". A joint with this condition will generally wear rapidly until the load is distributed evenly over the fastener and the parts.

If in doubt about the condition of a bolt, pin or hole on a new ride consult CHANCE RIDES, INC., and replace as required.

1. Inspect stationary joints for "egg-shaped" wear and loose pins.



1. Stationary joint wear
2. Stationary joint-misaligned holes resulting in point contact

2. Inspect moving joints for wear and lubrication.

3. Inspect welded structural joints for cracking or fatiguing.

4. Inspect bolted structural joints for cracking, fatiguing and proper bolt tightness.

5. Inspect pins and keepers on all pin joints for wear and proper installation.

6. Inspect all pins for proper CHANCE identification marks.

Cable inspection[5]

Replace cables if any of the following conditions exist. If more than one cable is used, cables must be replaced as a set.

1. Severe corrosion
   a. Rust appearing to stem from interior of cable.
   b. Cable appears clean but previous corrosion is evident from pitted condition in wires.

2. Severe stretching occurring in a short section of cable, indicated by a marked reduction in the diameter of the cable.

3. Severe physical damage such as kinking, crushing or "bird caging".

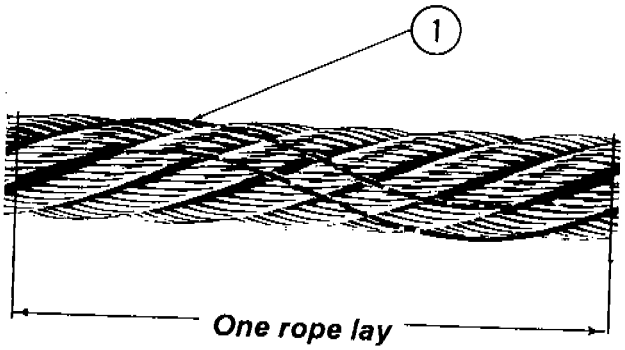
Kinking

Crushing

Bird caging

4. One strand being 75% broken through.

5. A number of wires, equal to the number in a strand, broken in the length of one rope lay.



"Lay" as a unit of measure

1. One strand

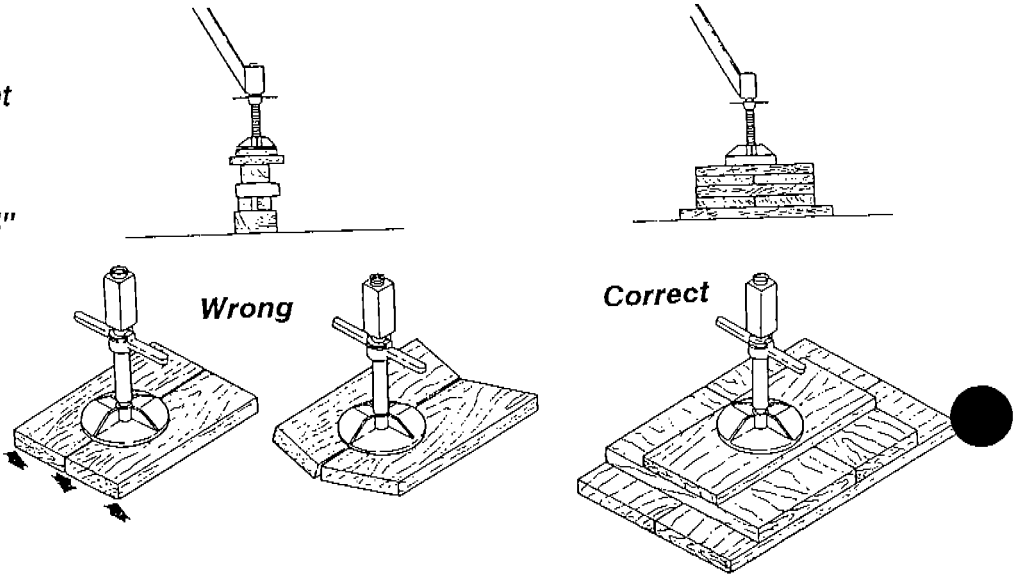
Leveling and blocking (portable models)

1. Inspect leveling and blocking at each set up and at the start of each day (rides erected in soft locations require more frequent inspection).

2. Inspect for proper cross blocking or crib blocking. Cross blocking distributes weight evenly.

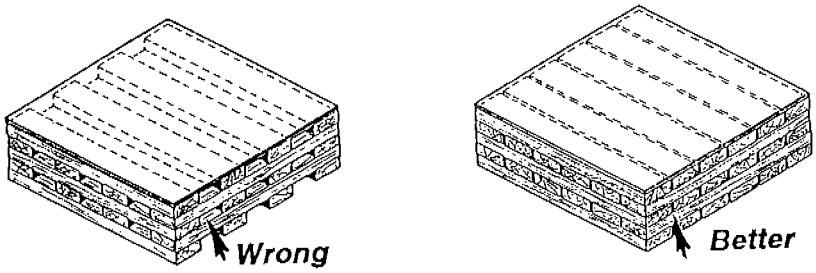
Always cross block
Cross blocking distributes weight evenly.

Recommended blocking:
3 X 12 X 36" and 3 X 12 X 24" unless otherwise noted.



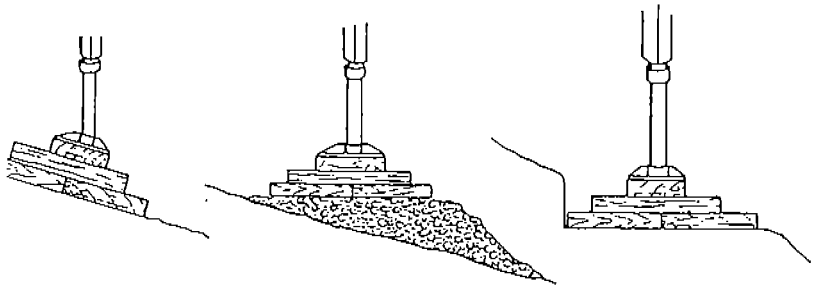
To avoid crushing under load "crib" blocking should be spaced no more than 1/4" for drainage.

"Crib" blocking
Large voids can let blocking crush under load. 1/4" spaces allow adiquate drainage.



3. Inspect blocking for proper contact with ground.

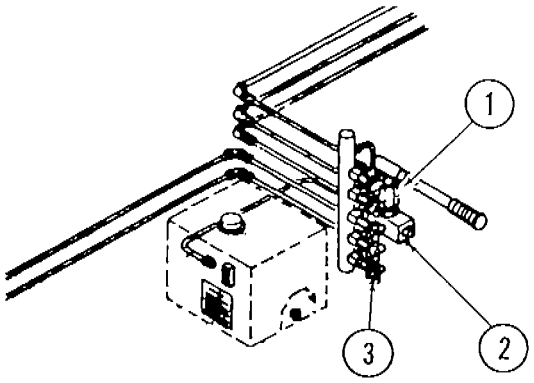
4. Level ground under blocking.by digging where possible, instead of filling. Fill dirt will be soft and allow settling.



No ! *Poor* *Better*

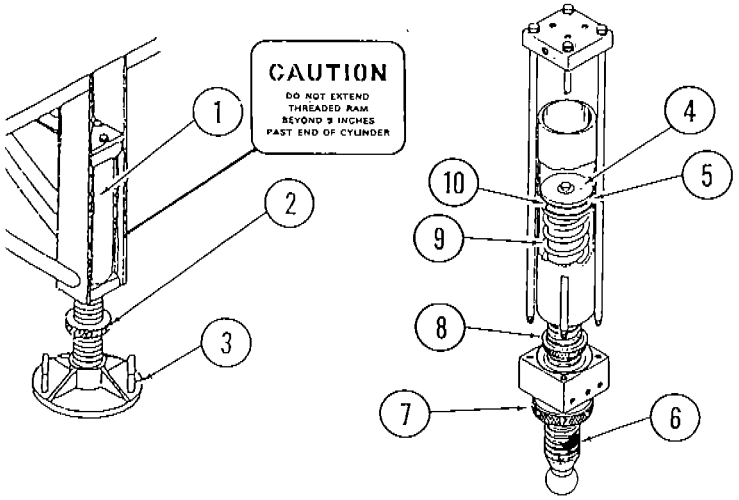
Blocking on a slope
Level the ground beneath blocking by digging where possible. Don't fill, the fill dirt will be soft allowing the ride to tilt

5. Inspect hydraulic leveling jacks for leaks at every set-up. The hydraulic jacks are for leveling purposes only. After the ride is leveled and all locking rings have been tightened, open the needle valves and the hand pump valve to relieve hydraulic pressure on the leveling jacks.



Open shut-off valve to release pressure
1. Hand pump
2. Hand pump valve
3. Needle valve

6. Check the lock rings on all screw jacks for tightness.



1. Leveling cylinder
2. Locking ring
3. Base
4. Piston
5. Block vee packing
6. Ram
7. Lock ring
8. Nut
9. Ram spring
10. Back up washer

General safety guidelines

The following is a list of general safety rules to which everyone should adhere.

1. All work must be performed by competent, qualified mechanics, capable of understanding the function of the parts and their proper installation.

2. Inspect the ride before each day of operation to determine that no portion of the ride is damaged, missing or worn in such a manner that unsafe conditions can develop.

3. Perform the manufacturer's recommended maintenance procedures at the intervals and in the manner specified in the operation and maintenance manual.

4. Study each job carefully to determine all hazards so that necessary safety precautions can be taken.

5. Examine safety devices (tools, ladders, etc.) before they are used to make sure they are in good condition. Use only OSHA approved safety items. Ladders must be clean and unpainted.

6. Use the proper tool or equipment for each job. All hand electric power tools must be properly grounded.

7. Wear close fitting, comfortable clothing when working on or near moving parts or live electrical circuits. Avoid finger rings, jewelry or other articles which can be caught in moving parts or come in contact with electrical circuits.

8. Protect your eyes by wearing approved safety glasses or goggles.

9. Wear a hard hat at all times. When working in elevated areas, use a safety belt.

10. Where work performed is hazardous, never work alone.

11. If guards are removed from equipment, make sure they are replaced before leaving the job.

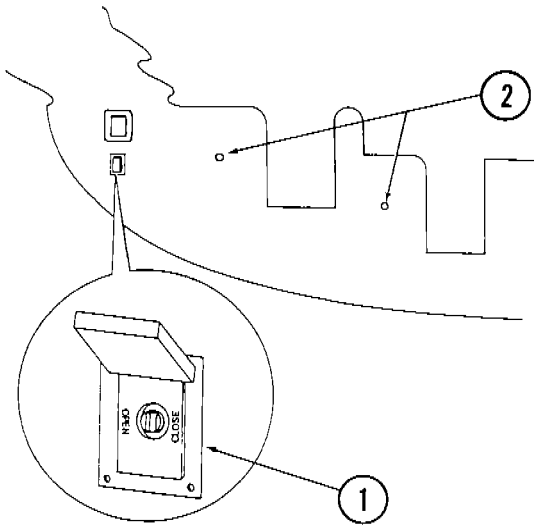
12. Clean up after each job, disposing of surplus materials.

13. Keep a record of parts replaced and the date of replacement. Inform the manufacturer of any replacement requirements which are frequent or cause unsafe conditions.

14. Make modifications and additions only as outlined in manufacturer's service and safety bulletins.

Vehicle inspection

1. Check the operation and locking of the lap bars use the operational check procedure on pg. 24. Inspect the lap bar control and indicator lights.



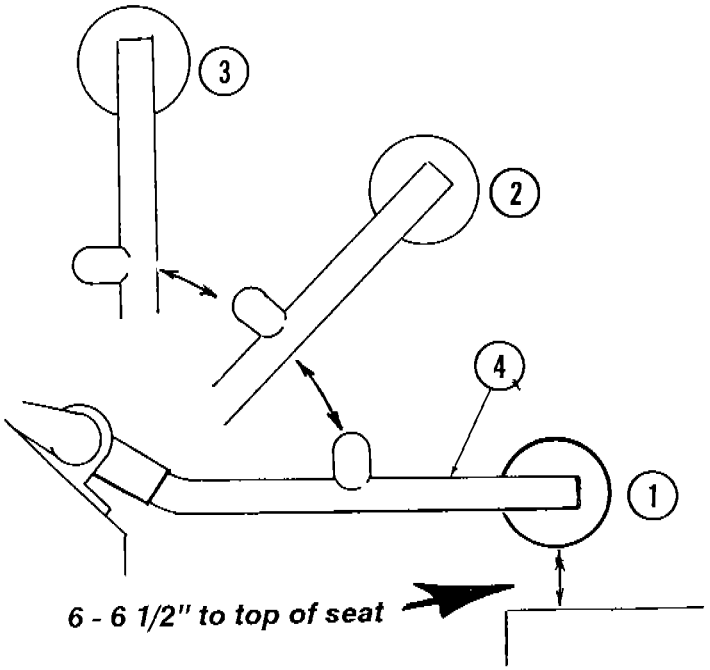
1. Lap bar control
2. Indicator lights (yellow)

2. Check the lap bar air system for leaks. Check the air jumper lines at the tower, axle, sweeps and vehicle. Air pressure must be 100 psi at the reservoir, and must not exceed 45 psi at the boat[11].

3. Inspect the bottom mounting eye of the lap bar air cylinders for cracks annually[11].

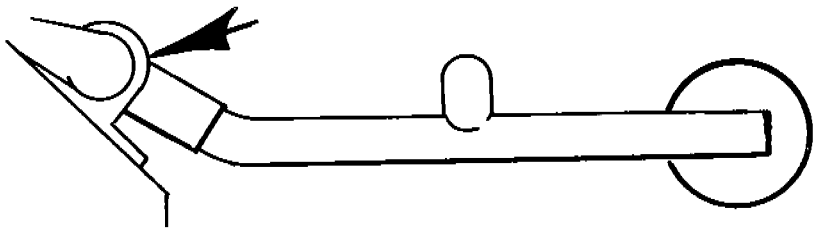
4. Check the adjustment of each lap bar[7]. When each lap bar is released, make sure it does not slam into the up-lock position. When properly adjusted, the lap bar will release from the down-lock position, swing up and settle at approximately 45 degrees. From this position, the passengers move the lap bar to the up-lock position. With the lap bar in the down lock position, there should be 6 to 6 1/2 inches of clearance between the lap bar pad and the seat.

1. Down lock position
2. Release position
3. Up lock position
4. Lap bar



5. If any lap bar is found to be out of adjustment, it must be inspected for cracks adjacent to the weld on the cross tube or the stainless steel tube[7].

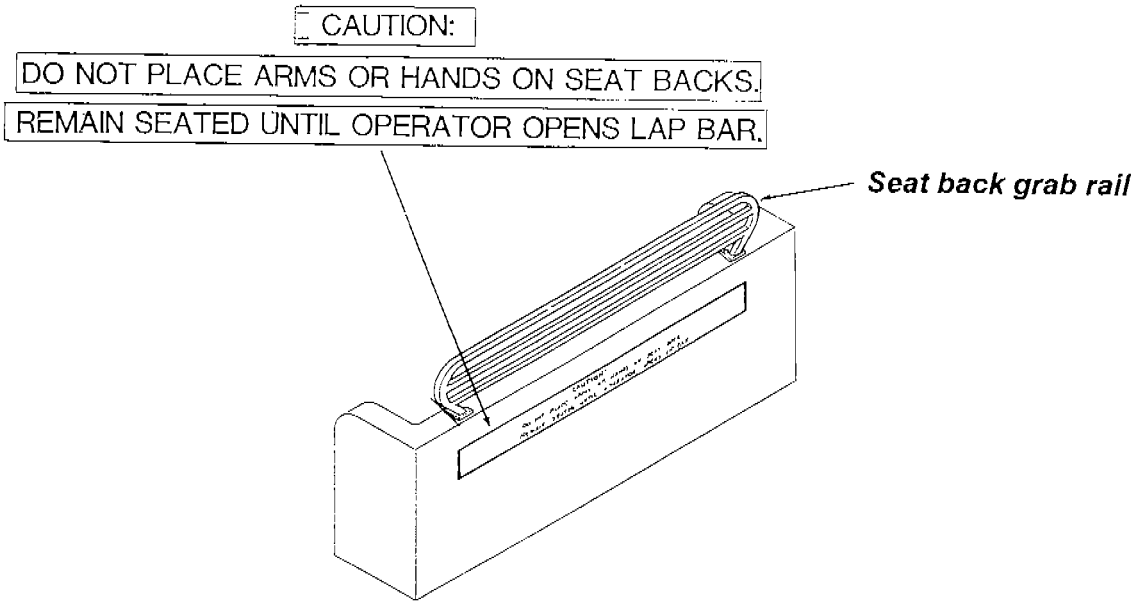
Inspect these areas of the lap bar for cracks.



7 B387R1078-0 May 22, 1990
11 B387R1099-0 May 24, 1991

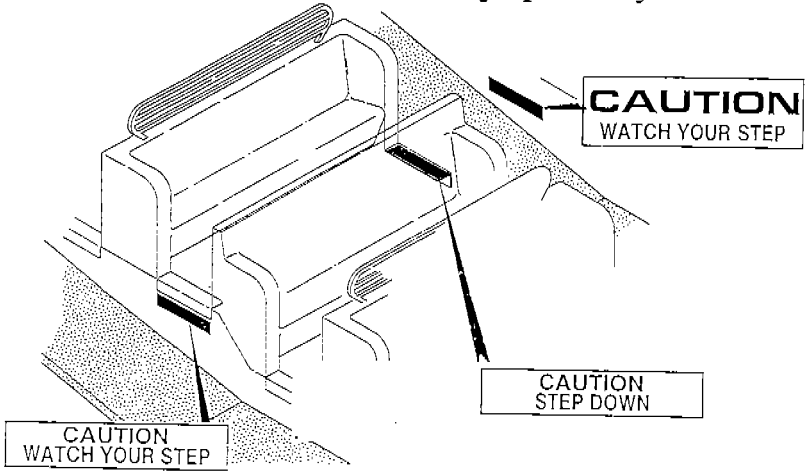
6. Inspect the lap bar padding.

7. Check the installation of the seat back grab rails[3].



8. Check for proper installation of lap bar safety decals[3].

9. Vehicle step areas must have the proper safety decals[8].



10. Inspect the overall condition of the vehicle seats and flooring.

3 B387R1053-0 March 23, 1990
8 B387R1082-0 July 27, 1990

Lap bar operational check

A lap bar interlock system prevents the ride from being started if any lap bar is not down and locked. Check the interlock system and the operation of every lap bar daily.

WARNING: Checking the lap bar interlock system requires two people. Extreme care must be taken during the procedure, in the event that the ride starts with the lap bar unlocked. Serious personal injury can result.

1. Move the lap bar switch to "Close" to lower the lap bars. Manually lower and lock each lap bar. All lap bar indicator lights on the vehicle must go off, the "Ready" will come on.

2. Depress the "Operator presence switch" and start the ride. It should start and run normally.

3. Stop the ride and move the lap bar switch to "Open" to release the lap bars. The lap bars can then be manually raised. All indicator lights should come on.

4. Have a helper sit in a seat and hold the lap bar just high enough that it will not lock.

WARNING: The helper must be prepared to immediately push the lap bar down into its locked position, in the event the ride starts. Serious personal injury can result.

5. Move the lap bar switch to "Close", lower and lock all other lap bars. The indicator should stay on for the unlocked bar and all other indicators must go out.

6. Depress the operator presence switch and push the start button. The ride MUST NOT START OR RUN when the lap bar is not down and locked.

WARNING: If the ride starts with the lap bar up when testing the lap bar interlock system, STOP THE RIDE IMMEDIATELY to avoid serious injury to the passenger.

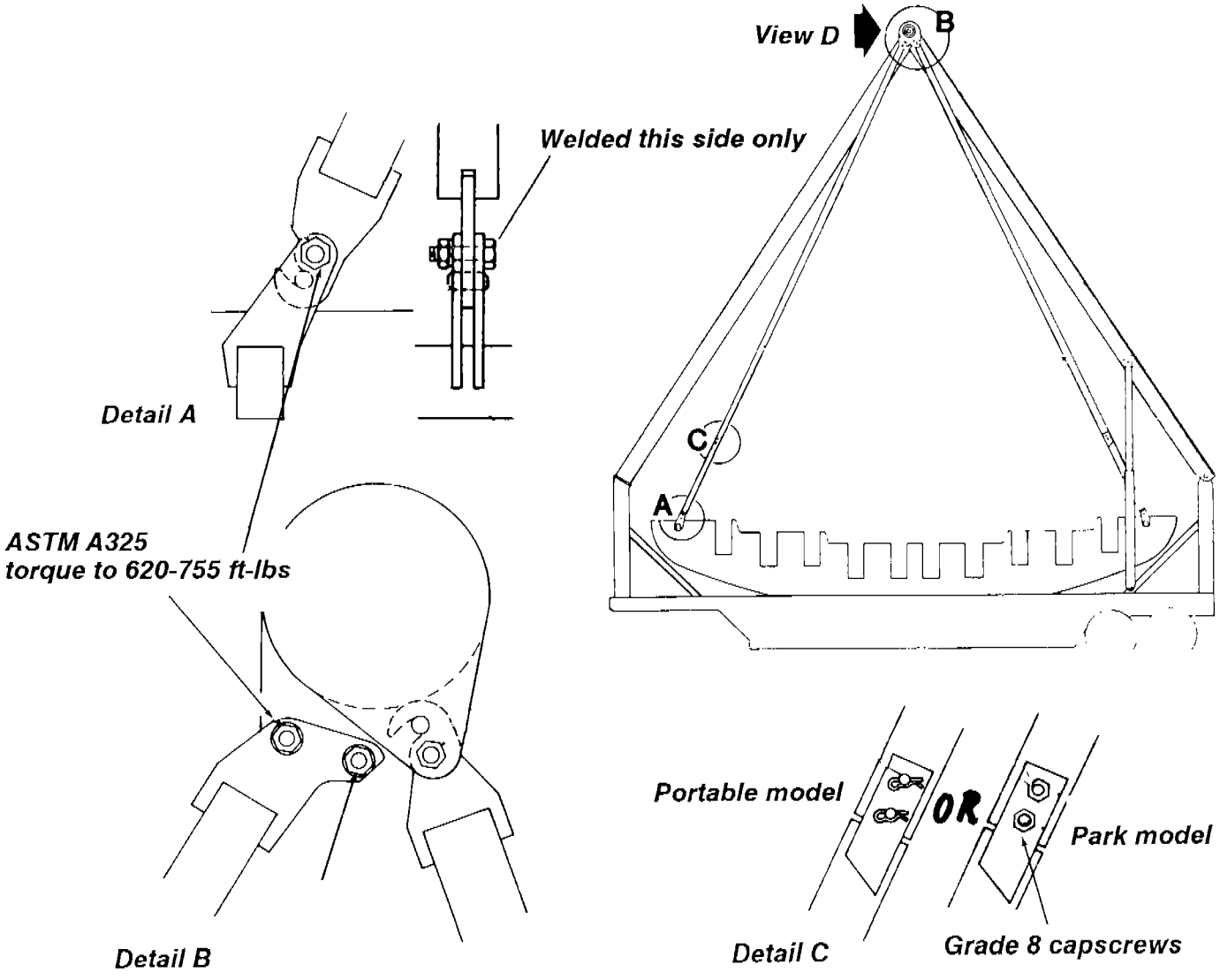
7. If the ride starts, adjustment or repair of the lap bar interlock system is necessary. DO NOT OPERATE THE RIDE UNTIL REPAIRS ARE MADE.

If the ride does not start, the lap bar interlock for that seat is working properly. Lower and lock the lap bar after the helper exits the seat.

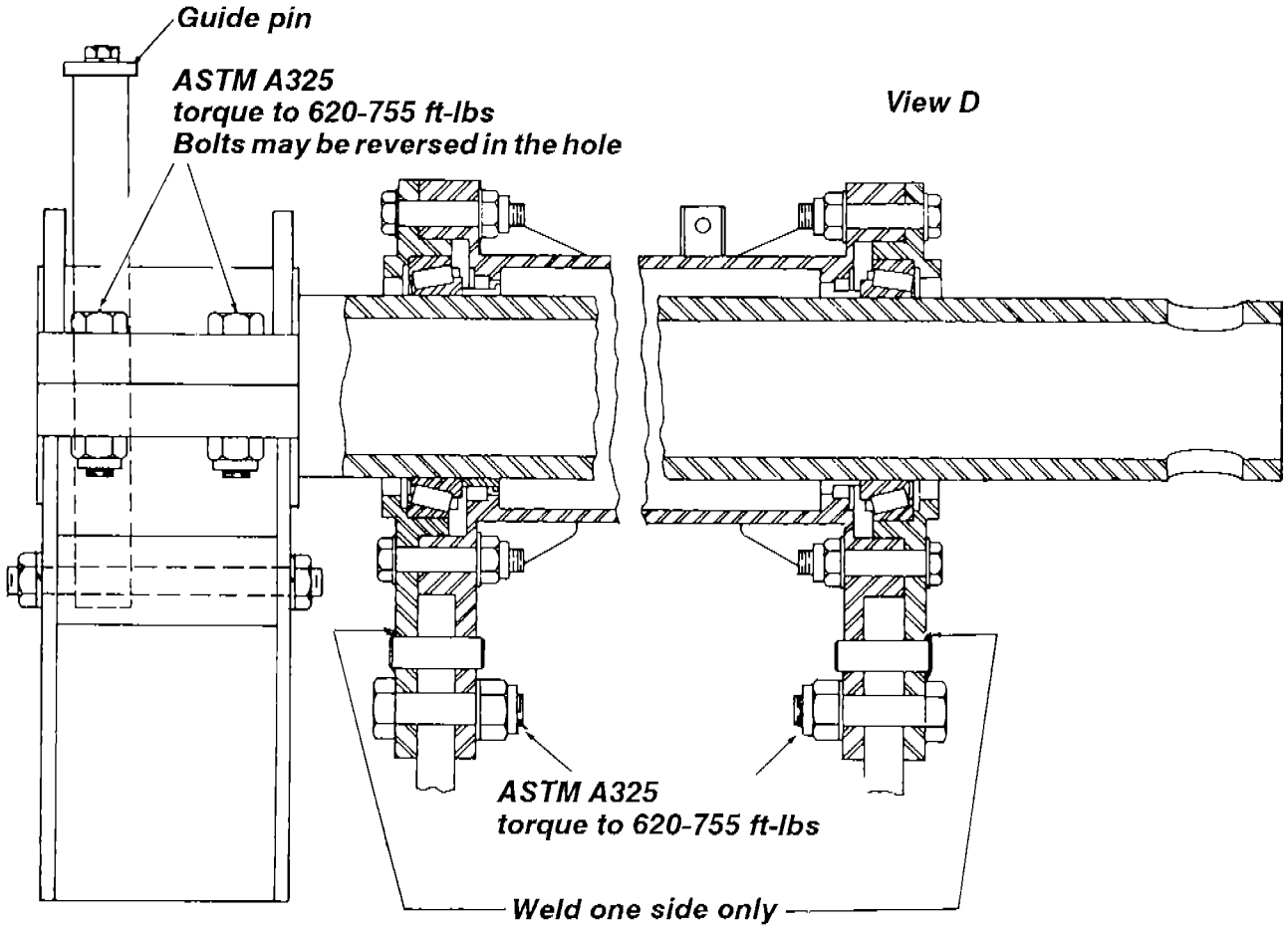
8. Proceed to the next seat and repeat Steps 4, 5, 6 and 7 until all the lap bars have been tested, one at a time.

Sweep and axle inspection

1. Check the capscrews which attach the sweeps at the axle and at the vehicle. These are ASTM-A325 capscrews and must be installed and tightened per the torque chart at the front of this section[6].



2. Check the capscrews at the axle and hubs. These are ASTM-A325 capscrews and must be installed and tightened per the torque chart at the front of this section[6].



3. Inspect pins and safety pins which attach sweep components.

4. Inspect the sweeps and axle structures for visible cracks or damage.

Electrical and lighting inspection

1. Inspect cable leads, electrical connections and grounding per local code.

2. Inspect the electrical jumper cable connections at the tower, axle, sweeps and vehicle.

3. Test the operator controls, including emergency stop switch and main power switch.

Drive, hydraulic and air system inspection

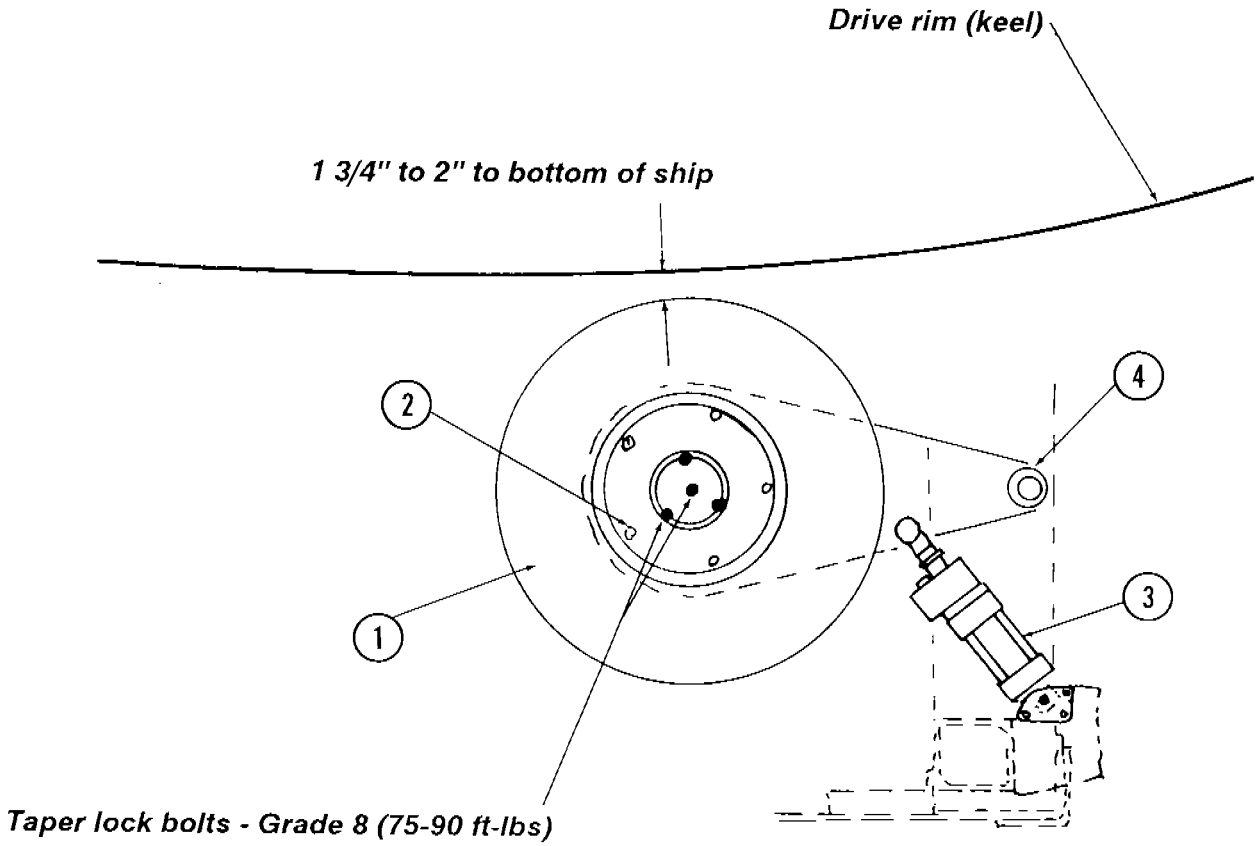
1. Inspect the entire hydraulic system including hoses, tubes, fittings and other components for leaks.

2. Inspect the hydraulic cylinders for the drive tires. The clevis must be tight. Inspect the rod end and base bearings for proper lubrication and condition. Cylinders must operate smoothly. Check for oil leakage.

3. Inspect drive tire pivot bearings for proper lubrication and end play.

4. Check drive tires for proper inflation pressure, lug bolt torque and wear. Check the four bolts in the taper lock hubs of the drive tires.

5. Inspect the entire air system for leaks. Check the air jumper lines at the tower, axle, sweeps and vehicle.



1. *Drive tire (80 psi)*
2. *Lug nut (260-320 ft-lbs)*
3. *Drive tire hydraulic cylinder*
4. *Drive tire pivot bearings*

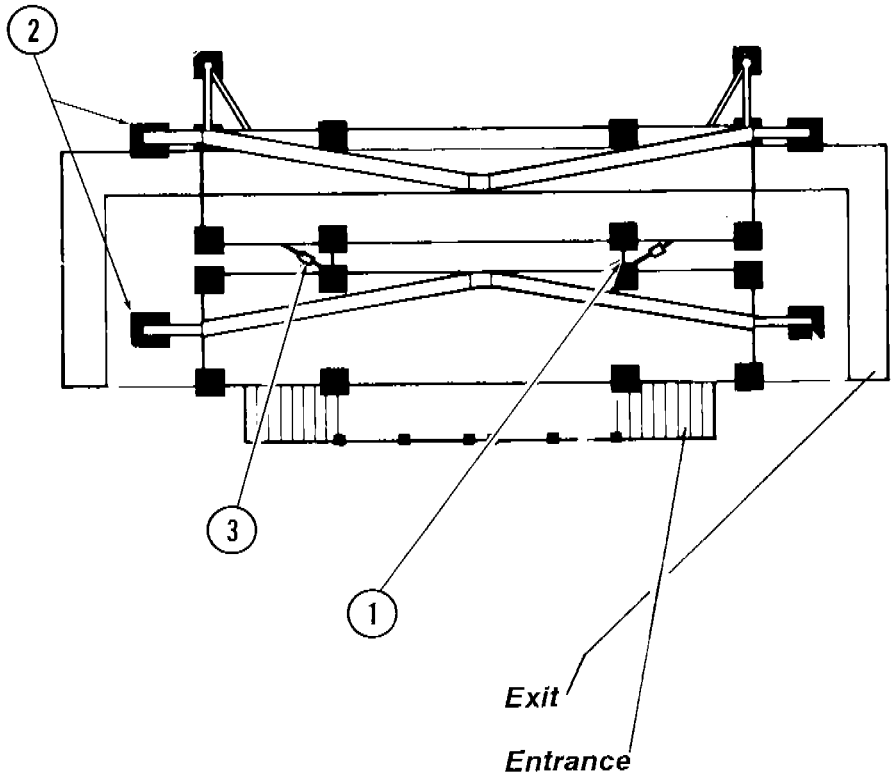
Trailer and base inspection

1. Inspect the mounting locations on park model rides at regular service intervals.

2. Inspect the trailer-to-trailer trusses. All turnbuckles must be tight.

3. Inspect trailer outriggers. Turnbuckles must be tight.

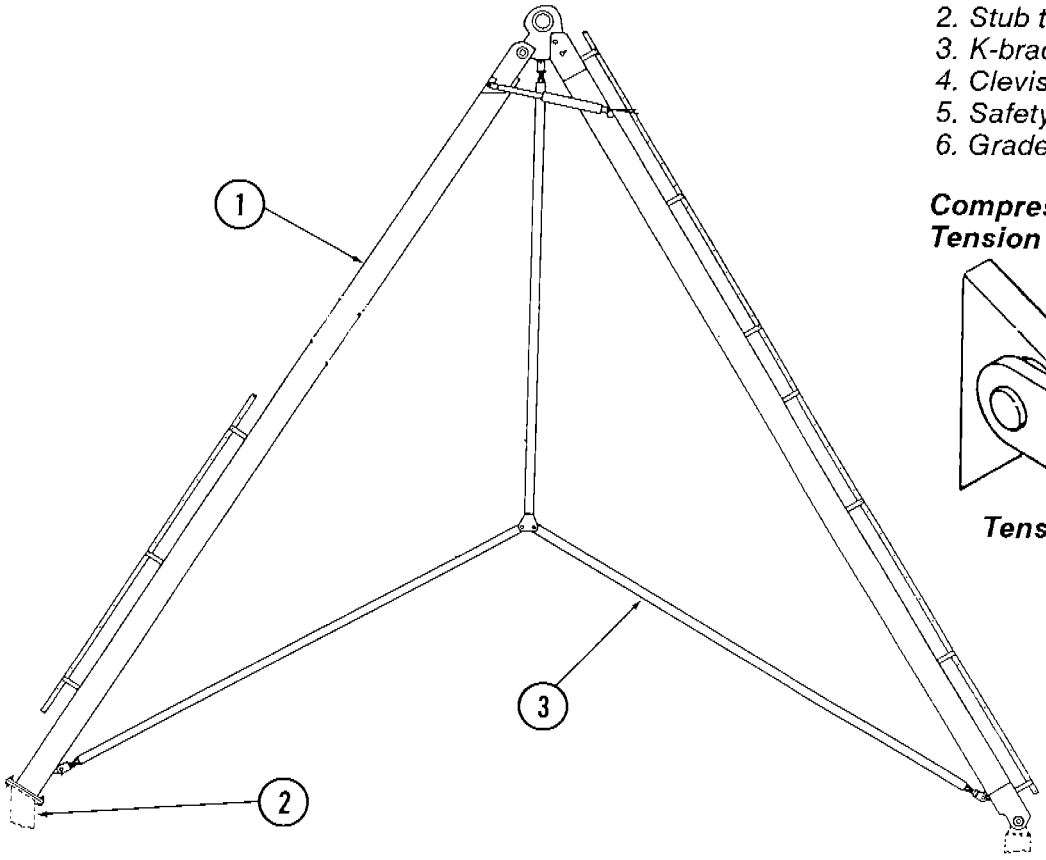
1. Trailer-to-trailer truss
2. Trailer outriggers
3. Turnbuckles



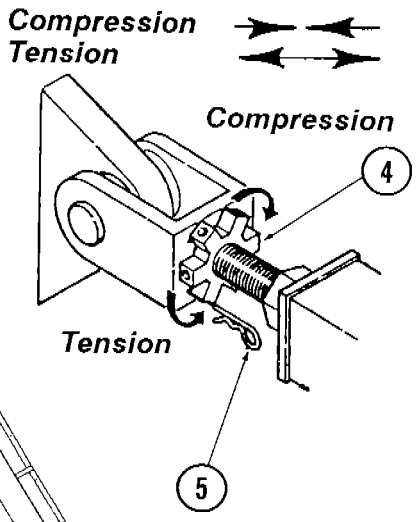
4. Inspect the trailer or park base structures for visible cracks or damage.

Tower inspection

1. Check the capscrews which attach the tower legs to the stub towers. These are Grade 5 capscrews and must be installed and tightened per the torque chart at the front of this section.



1. Tower leg
2. Stub tower
3. K-brace
4. Clevis adjuster
5. Safety pin
6. Grade 5 capscrews



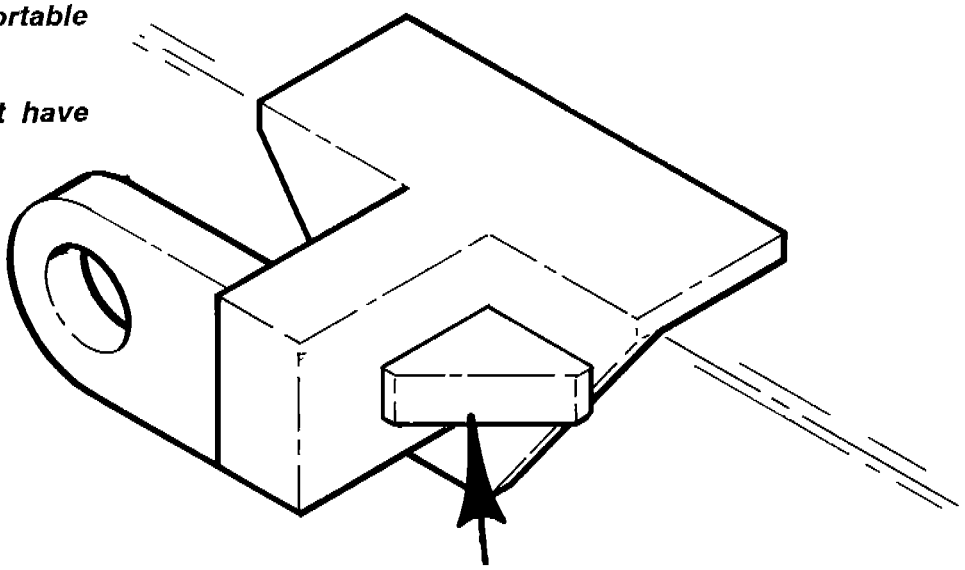
2. Check for tension in tower K-brace. The clevis adjusting nut must be tight.

3. Check for safety pin in clevis adjuster to prevent turning.

4. On portable units inspect the tower spread cylinder ears and bearing. Insure that the proper spread cylinder ears are installed[10].

Spread cylinder ears on portable units must have gusset.

Park model units do not have spread cylinders



5. Inspect tower leg structures for visible cracks or damage.

6. Inspect safety signs and placards[10].

Platform and fence inspection

1. Inspect hand rails, ramps, steps and walkways.

2. Inspect all gates and queue line chains. Self-closing gates must operate properly.

3. Check all entrance and exit signs.

4. Inspect floors and jackstands for proper installation and leveling.

Bibliography

The following service bulletins and manuals are referenced in the preceding text. Service bulletins issued after publication of this guide are located at the back of each section. Any future bulletin releases affecting a ride will be provided by CHANCE RIDES, INC. Bulletins received after receipt of this guide should be considered updates to this guide.

Sea Dragon Operation And Maintenance Manual
24327500
January, 1985

1. *Field Performance Testing Of Amusement Rides*
   B090R1002-0
   May 14, 1986

2. *Non-destructive Testing*
   B090R1022-0
   March 21, 1988

3. *Seat Back Grab Rails And Safety Decals*
   B387R1053-0
   March 23, 1990

4. *General Safety - Taper Pins*
   B090R1056-0
   February 9, 1990

5. *Cable Inspection*
   B090R1071-0
   May 25, 1990

6. *Replacement And Torque Requirements For Functional Load Carrying Capscrews*
   B090R1075-0
   May 25, 1990

7. *Lap Bar Adjustment*
   B387R1078-0
   May 22, 1990

8. *Caution Step - Decals*
   B387R1082-0
   July 27, 1990

9. *Safety Decal*
   B090R1083-0
   August 17, 1990

10. *Spread Cylinder Support Weldment*
    B387R1097-0
    May 17, 1991

11. *Lap Bar Air Pressure*
    B387R1099-0
    May 24, 1991

NUMBER: B387R1097-0

DATE: MAY 17, 1991

SUPERSEDES:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: 387-02486 thru 387-03489 Excluding Park Models
Chance Rides, Inc.

79-46001 thru 84-4623 Excluding Park Models
Chance Manufacturing Co., Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with rides produced by Chance Manufacturing Company, Inc.

Ride: SEA DRAGON Subject: Spread Cylinder Support Weldment

Chance Rides, Inc. has become aware that if the spread cylinders on the tower legs of the SEA DRAGON are fully extended or retracted with pressure still being applied to the cylinder, that damage to the cylinder attaching weldment and injury to personnel may occur. Chance Rides, Inc. has developed a kit which when properly installed increases the welded area of the cylinder attaching weldment to the tower leg.

Chance Rides, Inc. requires all owners of the above noted SEA DRAGON amusement rides to order and install kit number K387R1097-0, using the instructions supplied with the kit. The Certification Of Compliance must be returned to Chance Rides, Inc. within 15 days from receipt of the kit. This kit includes all necessary parts to rework one ride.

In addition to this kit, proper set-up and tear-down procedures must be followed. Extend and retract the cylinders slowly, making sure that the cylinders and the clevises do not bind. Never extend or retract spread cylinders with tower legs resting on the stub towers. If the cylinders are fully extended or retracted the pressure to the cylinders must be stopped immediately. Never utilize more than 2500 psi when operating spread cylinder. Stay clear of tower legs when extending or retracting the spread cylinders. All owners of SEA DRAGON amusement rides are to order and install four (4) decals number 22193005 as shown on this bulletin, one per stub tower.

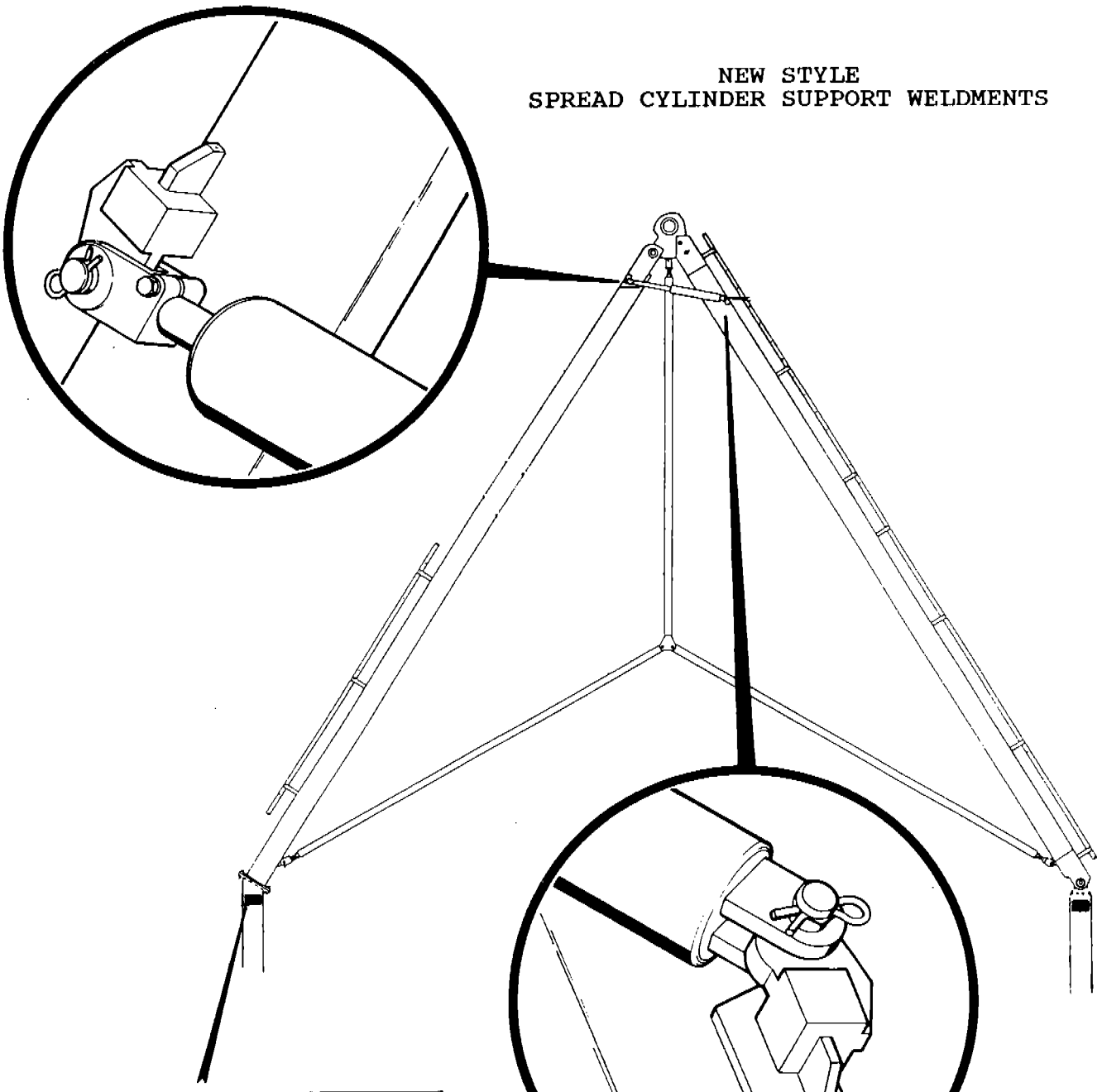
All work must be performed by qualified personnel, capable of understanding the function of the parts and their proper installation.

NOTICE

Use only those components authorized, specified or provided by Chance Rides, Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with any unauthorized alterations and/or modifications or additions and installations of unauthorized components.

NEW STYLE
SPREAD CYLINDER SUPPORT WELDMENTS



CAUTION

**MOVING OBJECTS
CAN CAUSE INJURY
STAY CLEAR
OF TOWER LEGS DURING
SET-UP AND TEAR-DOWN.**

APPLY DECAL TO STUB TOWERS
(4 PLACES)

CERTIFICATE OF COMPLIANCE

FOR

SERVICE BULLETIN

B378R1097-0

We hereby certify the procedure outlined in the above-mentioned service bulletin has been performed on the SEA DRAGON, serial number - _____, in accordance with the instructions and specifications supplied by Chance Rides, Inc.

Date Bulletin Received _____

Date Procedure Performed _____

Name and Address of Person Performing Procedure:

_____

_____

Attested:

Owner _____ Maintenance Supervisor _____

Address _____ Address _____

City _____ State _____ City _____ State _____

By _____

Date _____ Date _____

Results _____

_____

_____

This certification must be completed and returned to **CHANCE RIDES, INC., P.O. BOX 12328, WICHITA, KS 67277-2328**, within fifteen (15) days of receipt of the kit.