



CHANCE
MANUFACTURING CO., INC.

Number: B73-0223-00

Date: 5-12-81

Supersedes:

America's Largest Manufacturer of Amusement Rides

Service Bulletin

Effective Serial Numbers: ALL UNITS

Ride: SPACE SHUTTLE Subject: WELD INSPECTION OF CYLINDER MOUNT

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

Chance Manufacturing Co., Inc. is recommending that all Space Shuttle owners perform an inspection of the welds in the area of the erection cylinder ear where it mounts to the trailer.

Using FIGURE A, inspect welds around and along "6 x 10" cross tube of trailer, along and around cylinder mounting ear and along each of the two doubler plates located on top and bottom of cross tube.

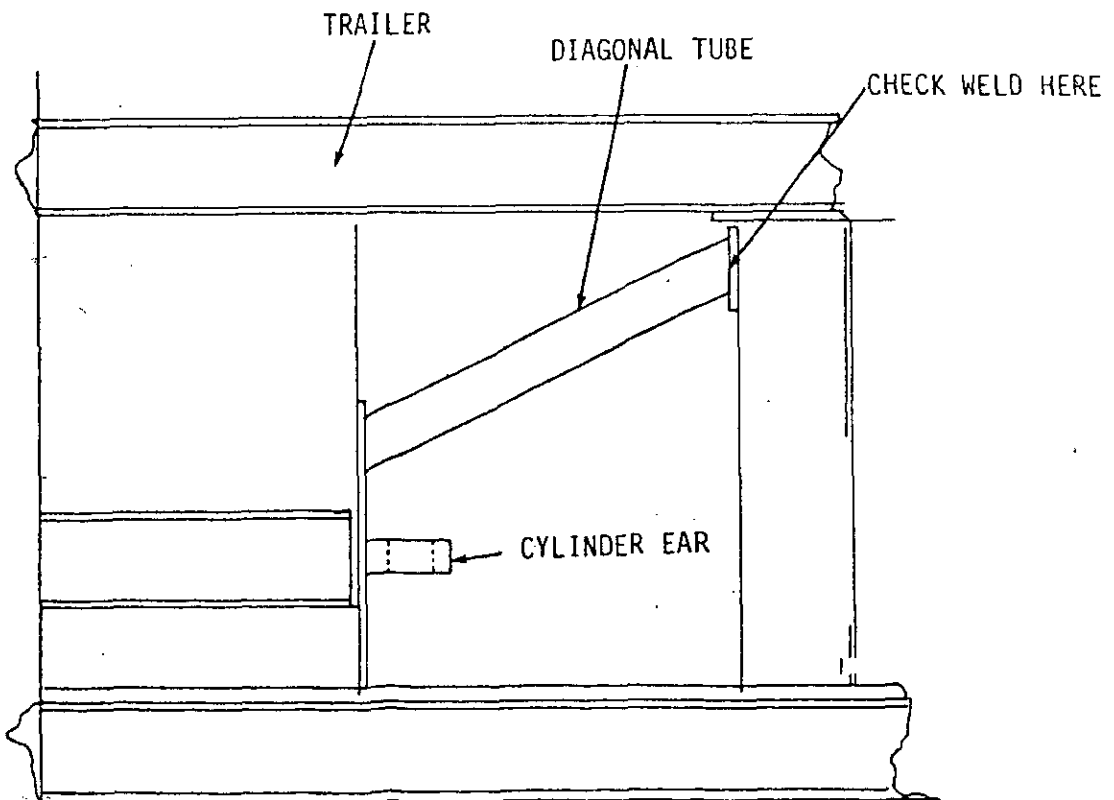
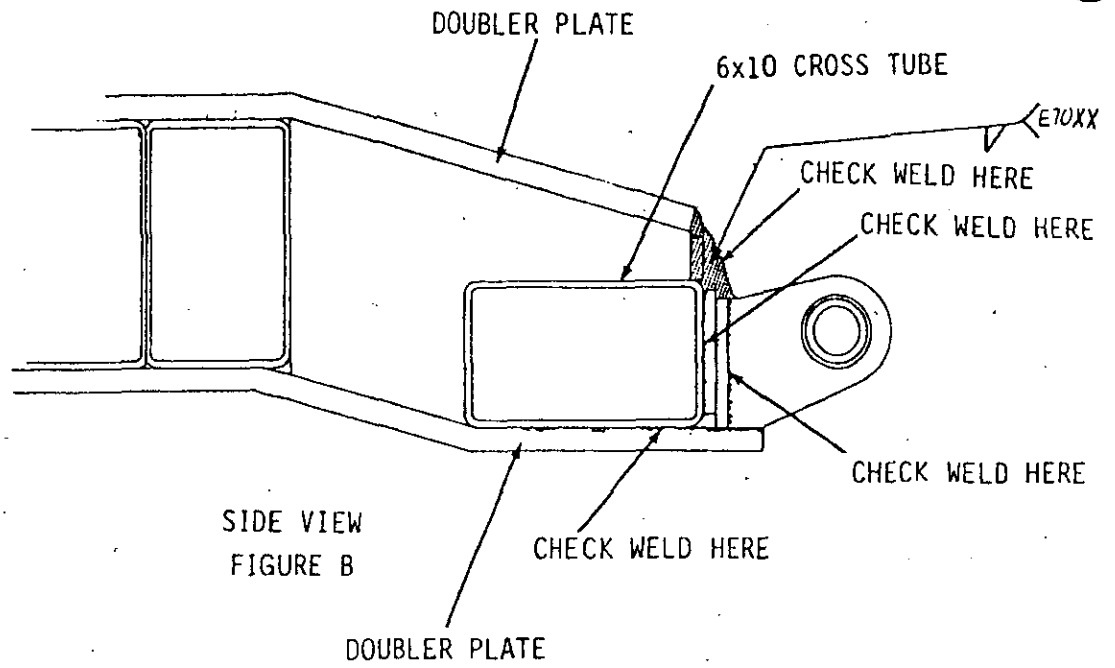
Check that all welds are intact and that no cracks are visible. Check welds around diagonal tube making sure there are no visible cracks.

Pay particular attention to the shaded area in FIGURE B. Make sure the weld is fillet weld filling in area $1\frac{1}{2}$ " x $1\frac{1}{2}$ ".

Once tower is erected and braces in position, exert a small amount of pressure on the erection cylinder, this should pull on the welds in the effected area and make any cracks present more visible.

NOTE: If any cracks or defective welds are found in any of these areas, contact Chance Manufacturing immediately for instructions in repair.

Fill out and return the attached Certificate of Compliance within seven (7) days of receipt of this bulletin.





CHANCE
MANUFACTURING CO., INC.

Number: 873-0224-00

Date: 5-13-81

Supersedes:

America's Largest Manufacturer of Amusement Rides

Service Bulletin

Effective Serial Numbers:

ALL UNITS

Ride: SPACE SHUTTLE

Subject: LAP BAR OPERATIONAL CHECK

Chance Manufacturing Co., Inc. is requesting that all SPACE SHUTTLE owners run a routine operational safety check of the lap bars.

Place lap bar control switch in "DOWN" position and make sure that all lap bars are down and locked.

Turn main circuit breaker to the "OFF" position.

All lap bars should remain down and locked.

If you find that your lap bars function differently than described above, contact Chance Manufacturing Co., Inc. for assistance.

Factory and General: 4219 Irving

P.O. Box 12328 Wichita, Kansas 67277

Area Code (316) 942-7411

Sales Office:

1103 Ross Ave., Dallas, Texas 75202

Area Code (214) 742-3802



CHANCE
MANUFACTURING CO., INC.

Number: B73-0227-00

Date: 8-24-81

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America's Largest Manufacturer of Amusement Rides

Service Bulletin

Effective Serial Numbers:

ALL UNITS

Ride:

SPACE SHUTTLE

Subject:

DRIVE TIRE CAGE

Chance Manufacturing Co., Inc. is making available a drive tire cage for the Space Shuttle drive tire, to ensure that should a drive tire come loose for any reason, it could not fall from its mounting position.

Chance is requiring that all Space Shuttle owners order and install this kit which will be furnished at no charge.

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 of 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.

PARTS LIST

QUANTITY	PARTS DESCRIPTION	PART NUMBER
1	COMPLETE KIT	K73-0227-00

CONSISTING OF:

1	- DRAWING #K73-0227-00	SHT 1
2	ARM WELDMENTS	373-02739
2	TUBE WELDMENTS	373-82830
1	TUBE WELDMENTS	373-82831
1	MOUNT	373-45034
1	COVER	373-20756
2	BOLT 3/4-10 x 3-1/2"	686-09528
4	BOLT 1/2-13 x 1"	686-08416
2	BOLT 1/2-13 x 3-1/2"	686-08436
6	LOCKWASHERS 1/2"	696-85378

INSTALLATION INSTRUCTIONS

1. Remove drive tire and 2 existing 3/4-10 x 2-3/4" bolts from motor mount.

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2. Install mount (373-45034), tube weldment (373-82831), cover (373-20756) to existing motor mount using 1/2-13 x 1" bolts.
3. Swing cover (373-20756) back and re-install drive tire using 3/4-10 x 3-1/2" bolts.
4. Install tube weldment (373-82830) to cover (373-20756) 2 places, using 1/2-13 x bolts and lockwasher, and arm weldment (373-02739) to tube weldment (373-82830) 2 places using 1/2-13 x 3-1/2" bolts and lockwashers.
5. Swing arm weldment (373-02739) into position shown and weld in place. (Shown on drawing)
6. Tighten all 1/2-13 bolts - 6 places.



Number: B73-0229-00 ✓

Date: 10-5-81

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers: ALL UNITS

Ride: SPACE SHUTTLE

Subject: COMPUTER CHECK

The following procedure for checking the computer on the Space Shuttle is a revised version from that appearing in the Space Shuttle Operations and Parts Manual.

Please insert this bulletin in that manual for future reference.

With power on - 115 volts AC must be present between terminals L1 and L2 on the terminal board of the programmer panel which is supplied from a 220/120 V step down transformer. The LED (Light Emitting Diode) on the power supply board will be illuminated.

With the lap bars in the down and locked position the READY light on the operators control panel and the output board will illuminate. LED's - LB (Lap Bar), INTLK (Interlock) will illuminate on the input board. LED (Stop) will also be illuminated.

NOTE: The READY light SHOULD NOT illuminate while the ship is in motion or until it has come to a complete stop, or if any Lap Bar is not down and locked.

With power on - the pump switch on - the lap bars in the down and locked position, depress and hold the foot switch on the operators control station. Momentarily press the START button on the operators control panel, S1, S2 and S3 timers will start timing (Indicated by a blinking LED on the timer board.) This will put the ship into a forward motion. V1 and B lights will illuminate on the output board.

After approximately 2.7 seconds, S1 timer will stop timing (Indicated by steady LED). S2 timer will continue to time for a total of approximately 5.2 seconds. The drive wheel will relax to the down position letting the ship free swing back.

After S2 timer stops timing, S3 timer will continue to time, D1 light on the output board will go out, the drive wheel will shift up driving the ship forward. S3 timer will continue to time for a total of 7.9 seconds.

After S3 timer stops timing, V2 light on the output board will illuminate. RS4 timer will start timing for approximately 2.6 seconds. The drive wheel will relax to the down position. RS4 timer will stop timing and RS5 timer will start timing for approximately 3.6 seconds. The drive wheel will shift up driving the ship forward. RS4 and RS5 timers will continue this repeat cycle for total of (10) drive periods from the start of the first drive period.

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After the 10th drive period V3 light on the output board will illuminate, RS7 timer will start timing for approximately 3.0 seconds. D1 light on the output board will illuminate, the drive wheel will relax to the down position letting the ship free swing back. RS7 timer will stop timing and RS8 timer will start timing for approximately 3.6 seconds. Start FS (Free Swing) timer and End FS timers will start timing. RS7 and RS8 will continue this repeat cycle for approximately 53.1 seconds until Start FS timer stops timing. End FS timer will continue to time for a total time of approximately 72.3 seconds when the start FS timer stops timing, D1 light on the output board will illuminate. V1, B, V2 and V3 lights on the output board will go out. The drive wheel will stop rotating and relax to the down position and the ship will free swing back and forward until the end FS timer stops timing.

When the End FS timer stops timing, the Brake timer will start timing and will continue to time for approximately 26.0 seconds. D1 light on the output board will go out. The drive wheel will shift to the up position slowing the ship down until it comes to a complete stop.

When the brake timer stops timing, the READY light on the operators control panel and the output board will illuminate indicating the ride is ready for another cycle.

PROGRAMMER TROUBLE SHOOTING CHECK-OUT

Set-up procedure - Power ON - Pump Switch OFF

1. To check the READY light on the output board, dial in No. 009 on the control board. With a pointed object depress "Push to energize wire no." on the control board. The READY light on the output board should illuminate.
2. To check "D1" light on the output board, dial in NO. 006 on the control board. With a pointed object depress "Push to energize wire no." on the control board. The D1 light on the output board should illuminate.
3. To check V1, B lights on the output board, dial in No. 010 on the control board. With a pointed object depress "Push to energize wire no." on the control board. The V1, B light on the output board should illuminate.
4. To check V2 light on the output board, dial in No. 020 on the control board. With a pointed object depress "Push to energize wire no." on the control board. The V2 light on the output board should illuminate.
5. To check V3 light on the output board, dial in No. 030 on the control board. With a pointed object depress "Push to energize wire no." on control board. The V3 light on the output board should illuminate.
6. To check S1 timer, dial in No. 016 on the control board. With a pointed object depress "Push to energize wire no." on the control board. The S1 timer should start timing.
7. To check S2 and S3 timers, dial in No. 010 on the control boards. With a pointed object depress "Push to energize wire No." on control board. The S2 and S3 timers should start timing.
8. To check RS4 timer, dial in No. 022 on the control board. With a pointed object depress "Push to energize wire no." on control board. RS4 timer should start timing.
9. To check RS5 timer, dial in No. 023 on the control board. With a pointed object depress "Push to energize wire no." on control board. RS5 timer should start timing.

10. To check RS7 timer, dial in No. 032 on the control board. With a pointed object depress "Push to energize wire no." on the control board. RS7 timer should start timing.
11. To check RS8 timer, dial in No. 033 on the control board. With a pointed object depress "Push to energize wire no." on the control board. RS8 timer should start timing.
12. To check start FS and End FS timers, dial in No. 027 on the control board. With a pointed object depress "Push to energize wire no." on the control board. Start FS and End FS timers should start timing.
13. To check brake timer, dial in No. 004 on the control board. With a pointed object depress "Push to energize wire no." on the control board. The Brake timer LED (Light emitting diode) should illuminate steady. After releasing pointed object from control board the Brake timer should start timing.