

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

14,975.00

THE 1960

Twister

CHANCE

ALLAN HERSCHELL
 COMPANY, INC.
Amusement Rides



The 1960 TWISTER has the same excitement . . . three motions blended into one . . . plus great new features. Each of the 8 cars now holds 5 passengers instead of 4, a 25% increase in capacity. The entire center drive is trailer-mounted, greatly speeding up erection, dismantling and moving.

Individual air brakes lock each car in place for fast and safe loading. Ride is flashy at night with its cornice of brilliant lights.

These customers all have the 1960 TWISTER: Mac Duberges of Toronto, E. D. McCrary and Charles L. Martin, Fun Park of Memphis, Donald Fielding, Wasaga Beach, Ontario and Mario Pisani, 225 Lake St., Brooklyn. The orders from Mr. Duberges and Mr. McCrary and from Mr. Martin were repeat orders on the TWISTER.

You will liven things up with a 1960 TWISTER. See us now.

"World's Largest Manufacturer of Amusement Rides"

1165 CLINTON ST. • BOX 465 • BUFFALO 5, N. Y. • PHONE: TA 5-8300

THE TWISTER WITH FLUID DRIVE

Tremendous enthusiasm and amazing success stories keep rolling in from happy owners of Allan Herschell's Twister.

Theodore A. Kruse, owner of the Enchanted Forest, Chesterton, Indiana, says: "Our Allan Herschell Twister has out-grossed all other rides in our park and is certainly a winner for us. It has terrific appeal for both young and old and many of our patrons come back for their second and third Twister ride during their visit to our park. We are going into our fourth season and we feel that the Twister has done more to build patronage in our park than any other ride we have."

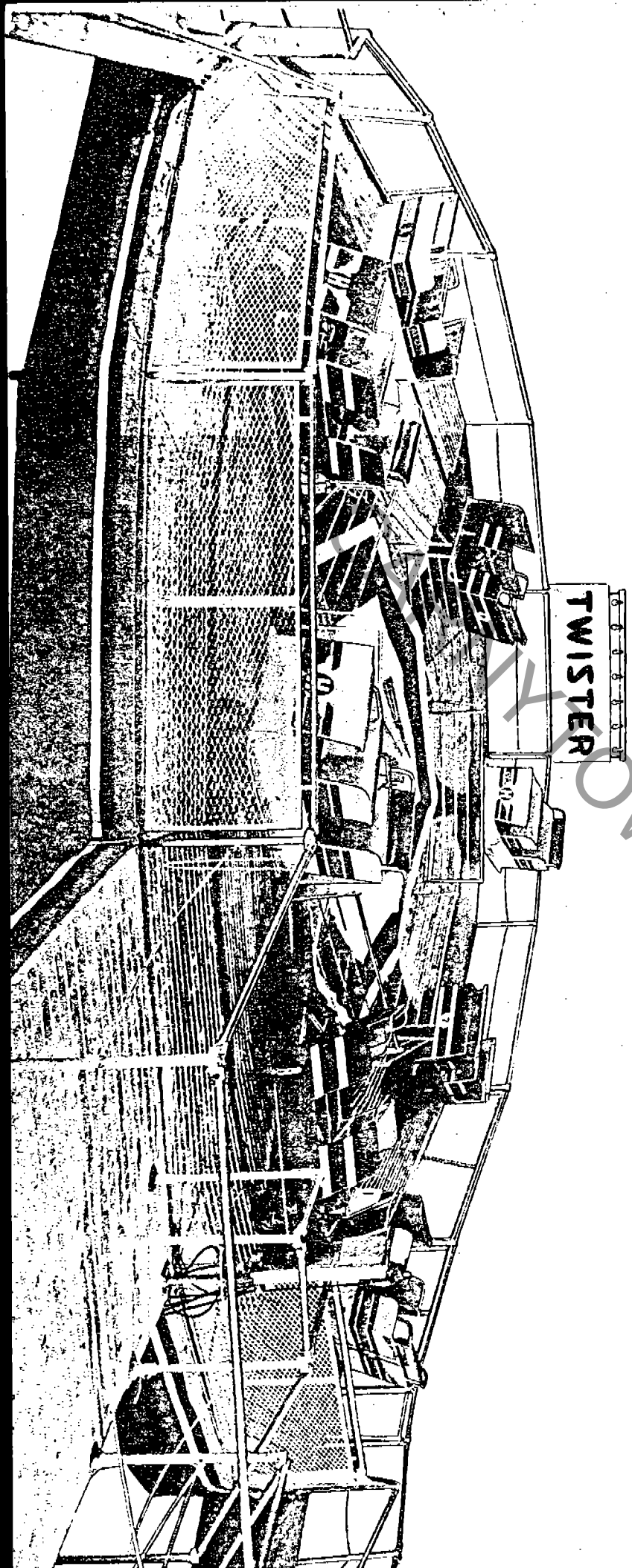
Mrs. Mildred Eldred, Clemons Lake Park, New Jersey, declares: "All ages stand in line to repeat on our Twister. It more than holds its own against strong competition from our 11 other major rides."
"Lots of repeat rides," writes James H. Mulhern, Lake

Quassapaug, Connecticut. "Some riders say it's more fun than a roller coaster. Grosses get better and better and they were wonderful to start."

In the Allan Herschell Twister, three different and distinct motions are blended into one thrilling ride with a pleasing sensation. The Twister cars rotate about a spindle on the ends of the sweeps while the sweeps revolve on a truck which is level in front and inclined to 16 degrees in the rear. By changing the speed of rotation, the operator can give the cars either a terrific spin or a gentle whirl, depending on the age of the riders.

Capacity of 32 adults mean top grosses. Passengers are loaded and unloaded quickly and easily because air brakes are used to steady cars.

You will be proud to own an Allan Herschell Twister and will enjoy profits and pleasure from it for years and years.



Twister

SPECIFICATIONS

SIZE & WEIGHT

Maximum Width 45'

Maximum Depth 50'

Gross Weight — Trailer mounted
center 6370#

Weight-balance of ride 33,890#

CAPACITY

8 cars carrying 40 adults or 56 children.

DRIVE MECHANISM

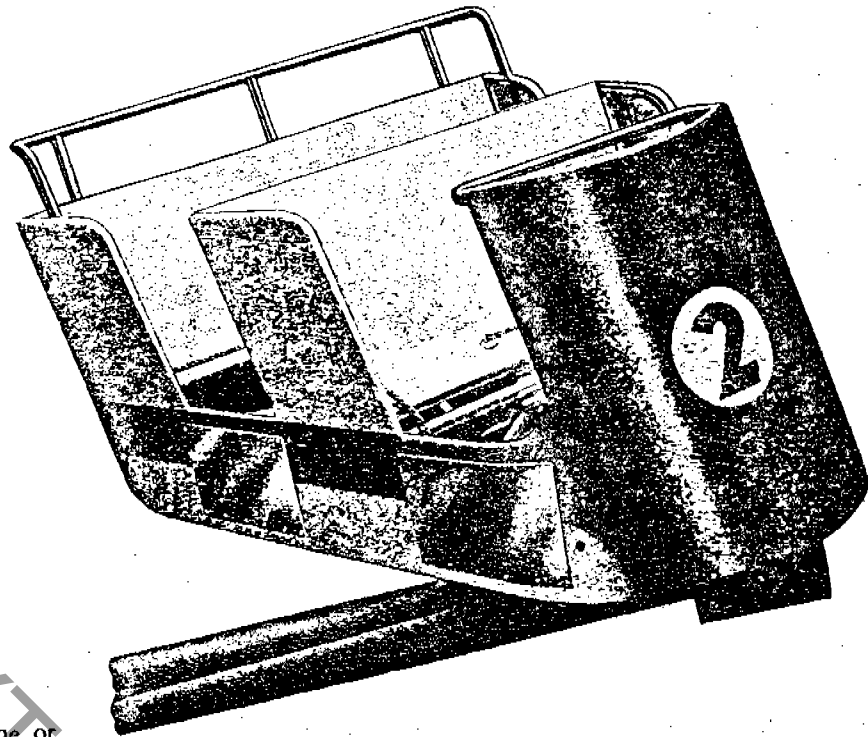
Heavy duty 40 H.P. industrial gasoline engine or 2-speed 10 H.P. 3 phase electric motor. Clutch is engaged and disengaged by an air cylinder. A switch applies and releases the electric brake. Both are operated simultaneously from the operator's station. Power transmission is through a fluid coupling for smooth starts and trouble-free operation. Electric timer indicates proper ride cycle.

CONSTRUCTION

Cars, equipped with airplane type safety straps, have welded steel frame of 1¼" steel tubing, covered with heavy aluminum sheet. Cars twist and turn on heavy Timken and ball bearings mounted on rugged spindle welded to trussed tube steel sweeps. Sweep roller, under car, rotates on lubricated ball bearings and high carbon steel rail. Entire center drive, containing rugged reducer, engine or motor, air compressor and air tank, is mounted on trailer of durable steel beams. Strong tubular tie rods position and tie track and platform jackstands to trailer frame. Platforms consist of seasoned lumber, complete with inside and outside fence, handrails and ramps.

DECORATION AND LIGHTING

Cars are brilliantly finished with durable enamels. Platforms are covered with skid-resistant gray paint. Colorful bally cloth encloses outside of ride below platform. Ride center and sweep center covered with bright fire-resistant glass and plastic fibre.



Fifteen cornice panels each with 100-watt fluorescent tubes, 2 11-foot light towers with 10 150-watt floodlights, each mounted on either side of loading platform 35" x 110" electro-polished Rigid-Tex stainless steel TWISTER sign with 7 150-watt floodlamps.

ACTION

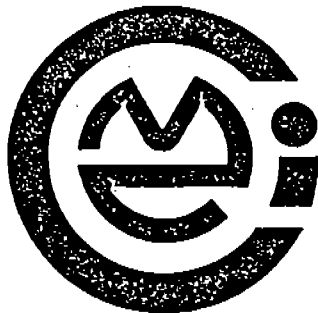
As cars revolve on rail track, they rotate unpredictably, producing varying series of twists and turns. Operator's throttle control allows gentle or very active motion. Individual air brakes lock cars in position for loading and unloading.

PORTABILITY

Ride center, engine or motor, reducer, air compressor and air tank are contained on a trailer ready for over-the-road hauling. Balance of ride easily loads on one 32-foot semi trailer. Can be set up easily in 4 hours.

STANDARD EQUIPMENT

Lighting, car covers, bally cloth, fabric center cover, trailer mounted center including tires, electric brakes, trailer hitch, required highway lights, and all necessary crates and tools.



ALLAN HERSCHELL

CHANCE
MANUFACTURING CO., INC.

Number:

Date:

30
12-7-72

Superceeds:

Number:

Date:

Service Information

Ride: TWISTER RIDE - MODEL "C"

Subject: ERECTION AND CARE

BLUEPRINT REFERENCES:

WB-325 Assembly Drawing (6 car ride)

WB-100PA Parts Number Drawing

KT-101 Foundation Drawing

WB-300 Electric Circuit Drawing (gas
drive)

WBC-101 Assembly Drawing (8 car ride)

WB-290 Air System Drawing

WB-58 Foundation Drawing

ERECTION AND CARE OF TWISTER RIDE MODEL "C"

1. Refer to assembly drawing WB-325 or WBC-101 for six or eight vehicle ride. Determine location of loading platform area.
2. Roll center drive and power unit assembly onto location so that the front or hitch end points directly to the loading platform area. Make allowance for 32' from front edge of loading platform to center of drive and 24' from each side of ride to center drive for location spotting.
- 3A. Carefully level center drive and power unit with screw adjusting legs located on each corner. Legs should be adjusted so that top front of drive unit frame is 27" off ground and rear is 48" off ground. Use handbubble level on red painted steel leveling pads on left and right sides in rear section of drive unit and also across front and rear pads of unit for final adjustment. ANY LOOSE EARTH UNDER SCREWJACK LEGS OF DRIVE SECTION MUST BE REMOVED TO OBTAIN A SOLID FOOTING AND PREVENT SETTLING OF RIDE. When drive unit is exactly level in all directions the lock nuts on screwjack legs must be tightened.
- 3B. Starting with #1 and #2 Jackstands which support the loading platform, assemble all jackstands clockwise 1-16 in position and install spacer pipes between all jackstands and center drive unit by matching painted numbers. Secure with the 5/8" pins and keys. Note that all numbers painted on jackstands, spacer pipes and center drive unit must match. Secure spacer pipes between all jackstands according to painted numbers.
4. All jackstands must be made level to center drive unit. Use long bubble level furnished and level between top of trailer ball hitch to red painted leveling pad on #3 and #16 jackstand. #9 and #10 jackstands are leveled to red painted leveling pads on the rear of drive unit frame.

Factory and General Office, 4219 Irving, Box 2397 Wichita, Kansas 67201

Area Code (316) 942-7411

Sales Office:

103 Ross Ave., Dallas, Texas 75202

Area Code (214) 742-3802

5. Level all jackstands with adjustable screws. Make certain all ground plates are resting on solid ground and tighten lock nuts on all 32 screw legs of the jackstands.
6. Insert each numbered piece of track section into jackstand top plates and drive tapered pin tight and secure with safety pins. Note: On permanently installed park rides, it is better to fasten all track sections to jackstands with the thin-self-locking nuts instead of taper pins. Assemble nut before completely driving each track stud in place on hill portion of ride using pipe wrench furnished.
7. Assemble the two numbered pipe truss units under curved sections of track, drive taper pins and install safety pins.
8. Assemble two stiff arms and the four platform supporting pipes between jackstands #5, #6, #13 and #14 and tighten pipe locks.
9. Assemble ride platform sections, loading platform and ramps by matching numbers stamped in platforms with corresponding jackstand numbers. Refer to drawing WBC-101 Assembly Drawing for Arrangement.
10. Assemble the sweep arms to the driving head by matching painted numbers. Secure sweep arms to driving head with pins and safety cotter pins.
11. Assemble numbered vehicles to sweep arms. BE VERY CAREFUL NOT TO DROP VEHICLE ONTO SPINDLE OR DAMAGED BEARINGS WILL RESULT. Vehicle numbers are mated with same numbered sweep. It is important not to tighten the large slotted head cap screw at top of each vehicle spindle. These are safety screws only and should be loosened to the nearest slot and hole before assembling the cotter pin. After this is done assemble spindle over plates and tighten cap screws. Attach upholstered panels to rear of each car and secure running boards.
12. Assemble ride railings, screen panels, chain guards, control station, sign and sign lights, bally cloth and center cover as shown on blueprint WBC-101. Assemble throttle linkage from control station to gasoline engine. Center cover is fastened to cable with springs hooked into eyes on sweep arms.
13. Assemble cornice lighting and light poles and connect twist-lock cords.
14. ELECTRICAL. See circuit diagram. Connect various twist-lock connectors and install power line to control box to suit stamped instructions at rear of control box, at electric brake and at electrically controlled air valves (if gas engine drive). If electric motor drive, connect to power supply of same voltage and cycle as motor nameplate. Connect power supply to air compressor to suit voltage and cycle on motor nameplate. Start air compressor motor to build up 125 lb. air pressure.
15. AIR SYSTEM. See drawing WB-290. Connect eight quick acting couplers at sweep arms and two quick acting couplers at control station. Open air valve at storage tank. Pressure should show between 100 lbs. and 125 lbs. on gauge at control box.
16. Operating the three way normally closed air valve lever at control station will apply or release brakes on all eight cars. Thus, cars will not sway during loading and unloading operations. Release air pressure on brakes before stopping ride, apply car brakes to prevent cars swaying at unloading and loading operations.

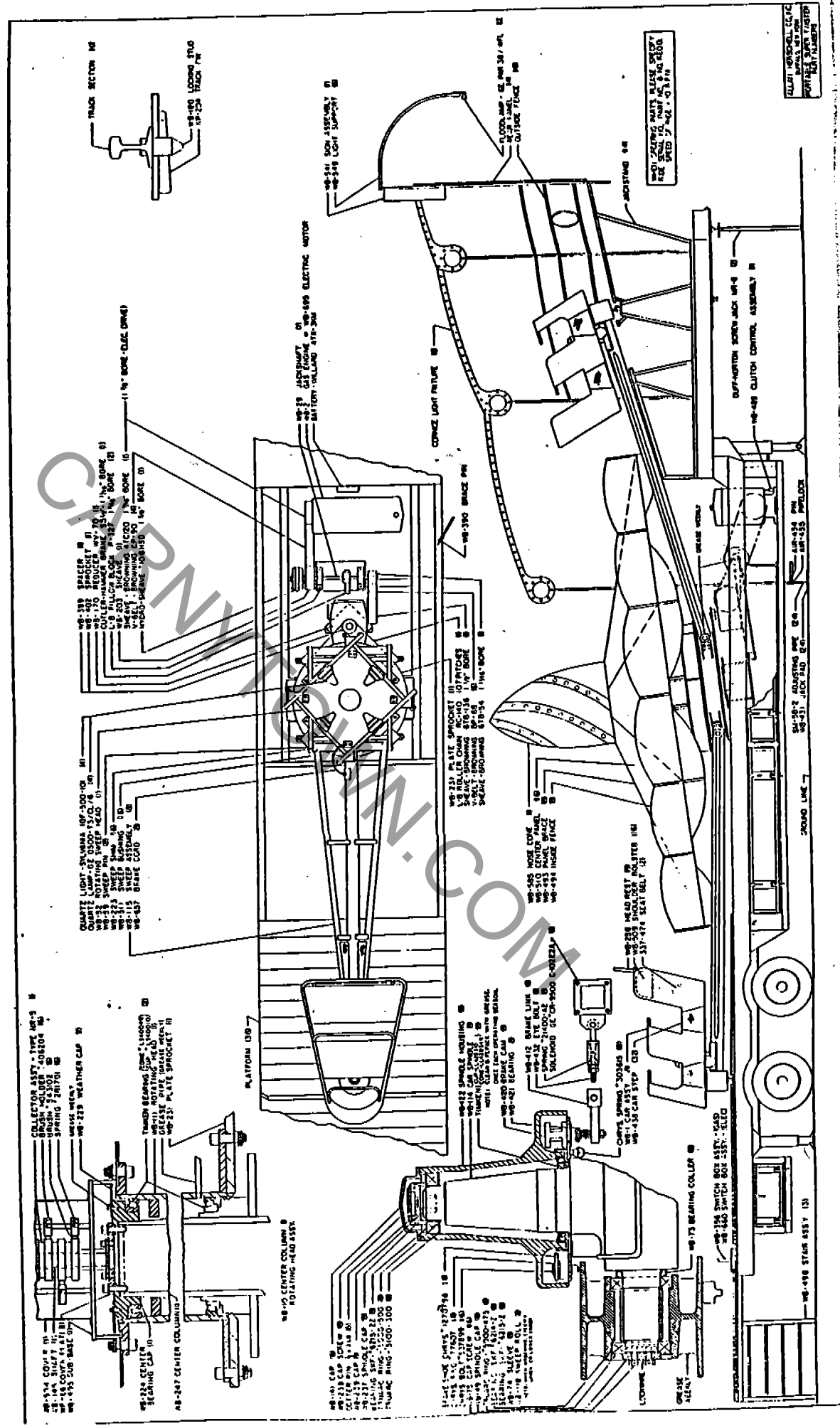
17. When ride is not in use car brakes should be relieved of pressure.
18. On rides using an electric motor drive, the timer controls the flow of current to the coil of each magnetic switch to start or stop the electric motor drive. A small, but handled, 3 position-type of switch also controls the flow of current to the coils of the two magnetic switches, and makes it possible to start the ride in low speed. Moving the switch to its "high" position will operate the ride at its top speed.

The twisting action of the cars may be increased by manipulating this switch from one speed position to the other, thus quickly accelerating and decelerating the entire ride for short intervals and obtaining greater action in the cars to suit the operator and riders.

19. An automatic electric brake brings the ride to a gentle but positive stop on either the gasoline or electric motor type of drive. This electric brake is automatically applied when the timer switch stops the flow of current to the brake. A new brake generally requires several adjustments until the friction surfaces are worn in.
20. Cover the switch controls with the rainproof night cover when ride is not in use.
21. Vertical shaft worm reducer #WV-70:
 - (a) Follow instructions on nameplate, using 600W in warm weather and 1/2 of SAE #40 and 1/2 of 600W in cold weather. Maintain proper level.
 - (b) Drain the refill after first 150 hours of operation.
 - (c) Use grease gun (furnished) on upper bearing fitting of reducer.
 - (d) Keep breather fitting clean and open.
22. Use grease gun (furnished) on fittings provided on:
Use Mobil MP Grease or King Graphite Product #KGP-24.
 - (a) Motor (ball bearing type only).
 - (b) Center drive (at rotating head and sweeps, 34 places.)
23. Use light machine oil on chain.
24. Lubrication of eight car spindles is necessary only at the beginning of each operating season, and then, only the bottom tapered roller bearing needs cleaning and greasing. The sweep roller, bearings are to be greased weekly. Use Mobil MP Grease or King Graphite Product #KGP-24.
25. Check the "V" belts on the drive for proper tension. When new, adjustment should be made frequently until the initial stretch has been taken up. These are not to be too tight and need very little attention during the season. CAUTION: Any adjustment of the belt drive should be done with the engine or motor. Do not change the position of the gear reducer except to remove excessive looseness in the chain.
26. For proper maintenance and lubrication of air compressor and gas engine, refer to the manufacturer's instructions shipped with each compressor and engine, or refer to the manufacturer.

27. The life of the drive chain can be increased if the entire chain as a unit is removed once a year and reinstalled in an upside-down position.
28. Remove slack from drive chain periodically, using the four set screws and lock nuts at base of reducer, but chain must not be too tight.

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ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN INCHES AND DECIMALS THEREOF.

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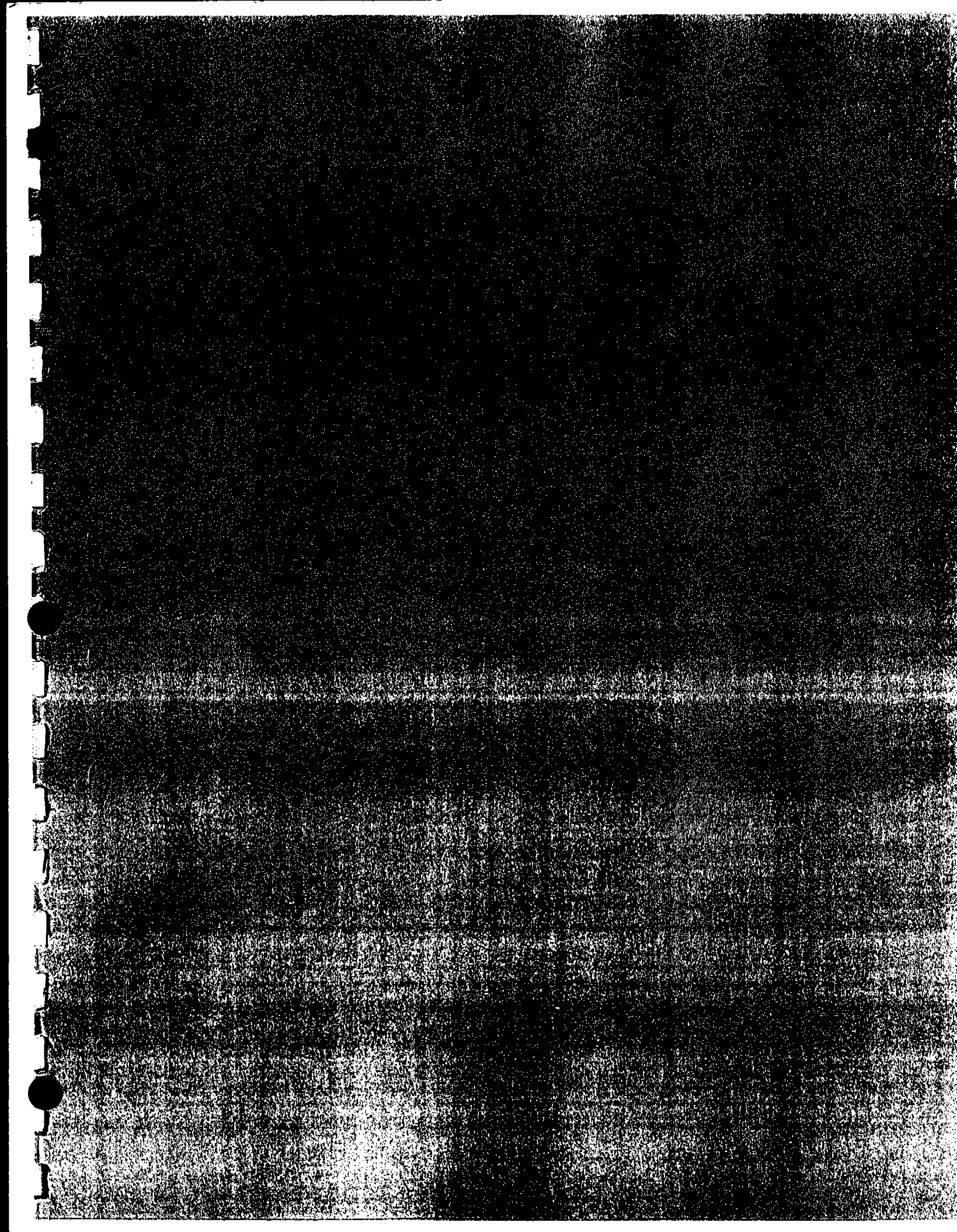
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TWISTER

1. Inspect blocking and leveling
2. Inspect lock nuts on leveling jacks
3. Inspect hydraulic valves for leveling jacks
4. Inspect for proper grounding - per local code
5. Inspect fences and steps
6. Inspect floor hinges for cracks
7. Inspect floor and track with ride running
8. Inspect seats for cracks
9. Inspect headrest in each seat (Bulletin 138)
10. Inspect seats for safety belts (Bulletin 63)
11. Inspect to see that all track clamps are locked
12. Inspect drive chain adjustment
13. Inspect wheel on end of sweep for wear
14. Inspect seat spindles for cracks and bearing adjustment
15. Inspect pin through seat and spindle
16. Inspect brake operation on each seat
17. Inspect bolts in center hub area (Bulletins 104 & 104A)
18. Inspect joint between inner and outer sweep (Bulletin 91)
19. Inspect sweep for cracks

20. Inspect sweep bearing housings for cracks and bearings for looseness
21. Inspect control lever detente (Bulletin 89)
22. Inspect for smooth acceleration. Braking pressure must be 700 psi (Bulletin 90)
23. Inspect RPM of ride: Maximum 9 (Bulletin 117)
24. Inspect ride for excessive vibration
25. Inspect structure for cracks, bad welds, etc. (Bulletins 67 and 71)
26. Inspect electrical circuit for shorts, bad wires, etc.
27. Inspect hydraulic leaks
28. Inspect rides' overall appearance for cleanliness and general external upkeep.

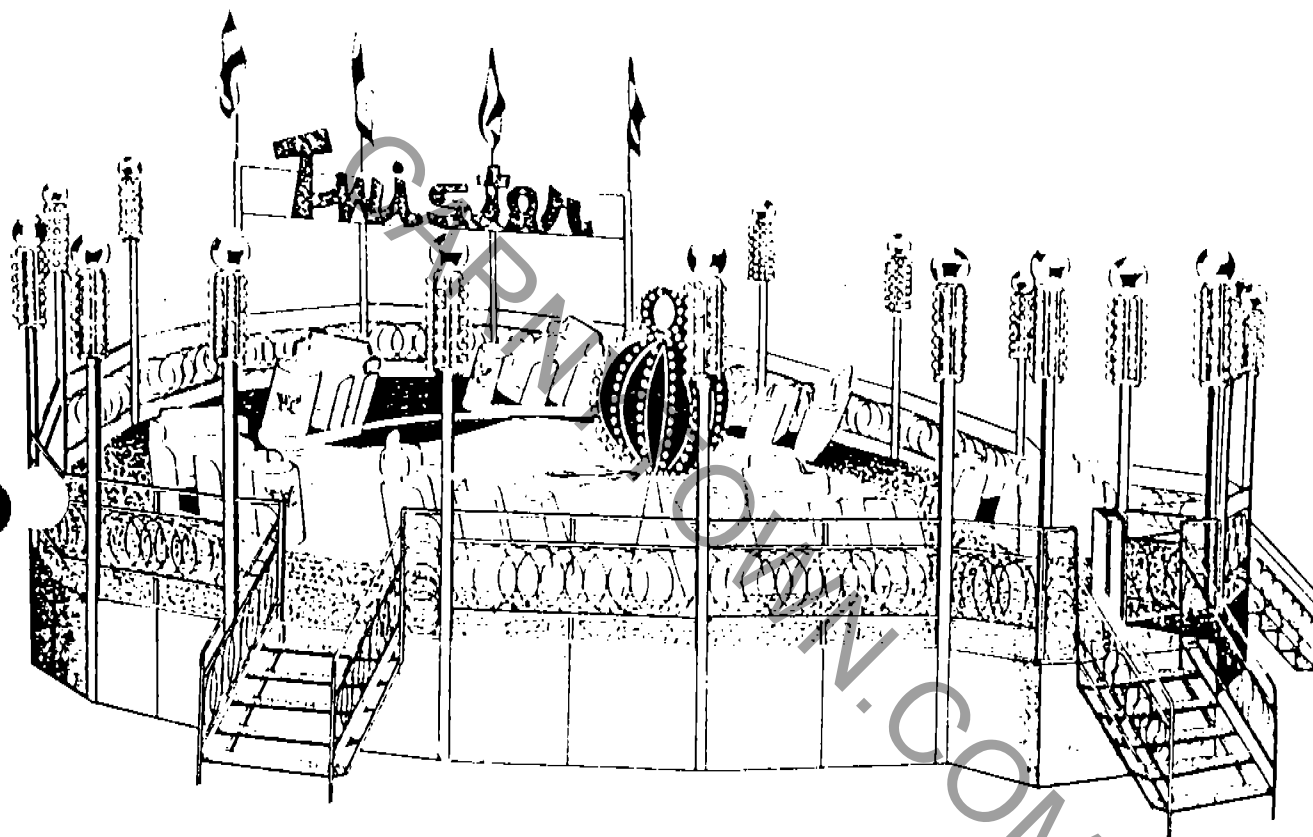
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TWISTER

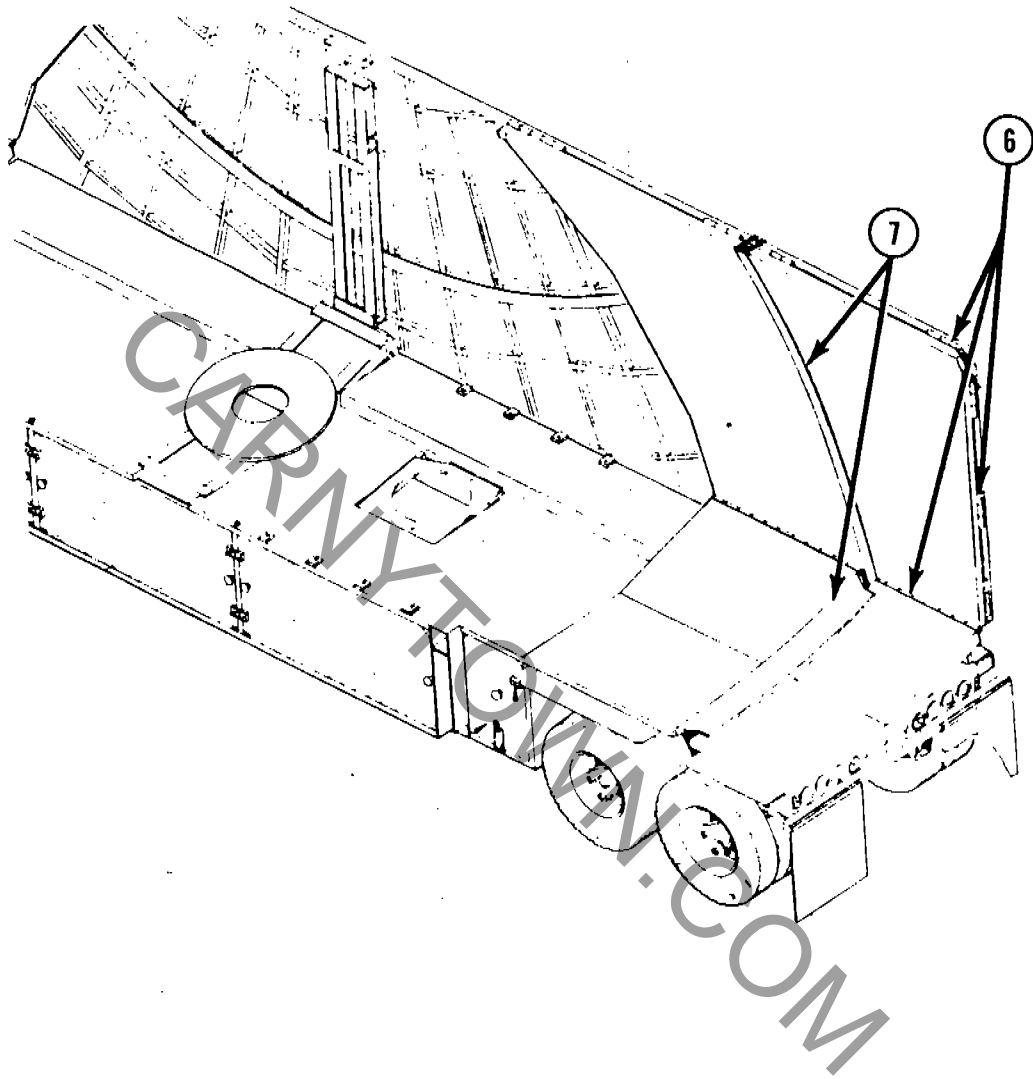
Ride Serial Number _____ Owner _____ Date _____

FIELD INSPECTION POINTS

1. () Inspect blocking and leveling.
2. () Inspect lock nuts on leveling jacks.
3. () Inspect hydraulic valves for leveling jacks.
4. () Inspect cable leads, electrical connections and grounding per local code.
5. () Inspect fences and steps for proper installation and leveling. Check all jack stands.
6. () Inspect floor hinges for cracks.
7. () Inspect floor and track with ride running.
8. () Inspect seats for cracks.
9. () Inspect head rest in each seat (Bulletin 138).
10. () Inspect the seats for restraining belts. 2 belts are required on the front seat, 3 belts on the rear seat (Bulletin 63).
11. () Inspect to see that all track clamps are locked.
12. () Inspect drive chain adjustment.
13. () Inspect wheel on end of sweep for wear.
14. () Inspect seat spindles for cracks and bearing adjustment.
15. () Inspect pin and hairpin through seat and spindle.
16. () Inspect brake operation on each seat.
17. () Inspect bolts in center hub area (Bulletins 104 and 104A).
18. () Inspect the joint between inner and outer sweeps (Bulletin 91).
19. () Inspect sweeps for cracks.
20. () Inspect sweep bearing housings for cracks and check bearings for looseness.
21. () Inspect control lever and detent (Bulletin 89).
22. () Check for smooth acceleration. Braking pressure must be 700 psi (Bulletin 90).
23. () Check speed of ride - 9 rpm maximum (Bulletin 117).
24. () Check ride for excessive vibration.
25. () Inspect the structure for cracks, bad welds, etc.
26. () Inspect electrical wiring for short circuits, bad wires, etc.
27. () Inspect for hydraulic leaks.
28. () Inspect overall appearance of ride for cleanliness and general overall upkeep.

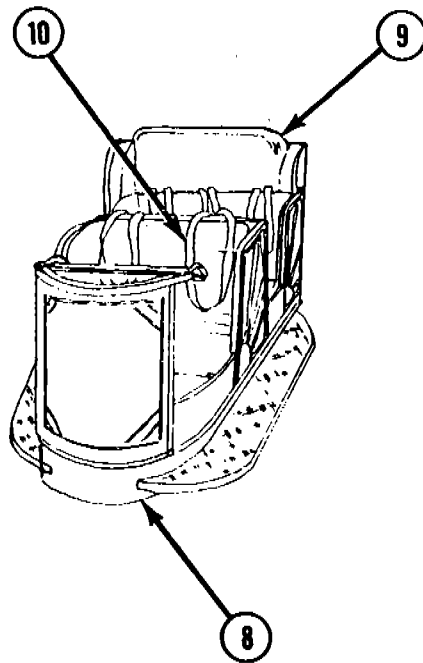


21. () Inspect control lever and detent (Bulletin 89).
22. () Check for smooth acceleration. Braking pressure must be 700 psi (Bulletin 90).
23. () Check speed of ride - 9 rpm maximum. (Bulletin 117).
24. () Check ride for excessive vibration.

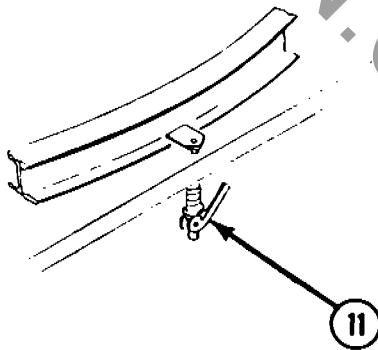


6. () Inspect floor hinges for cracks.

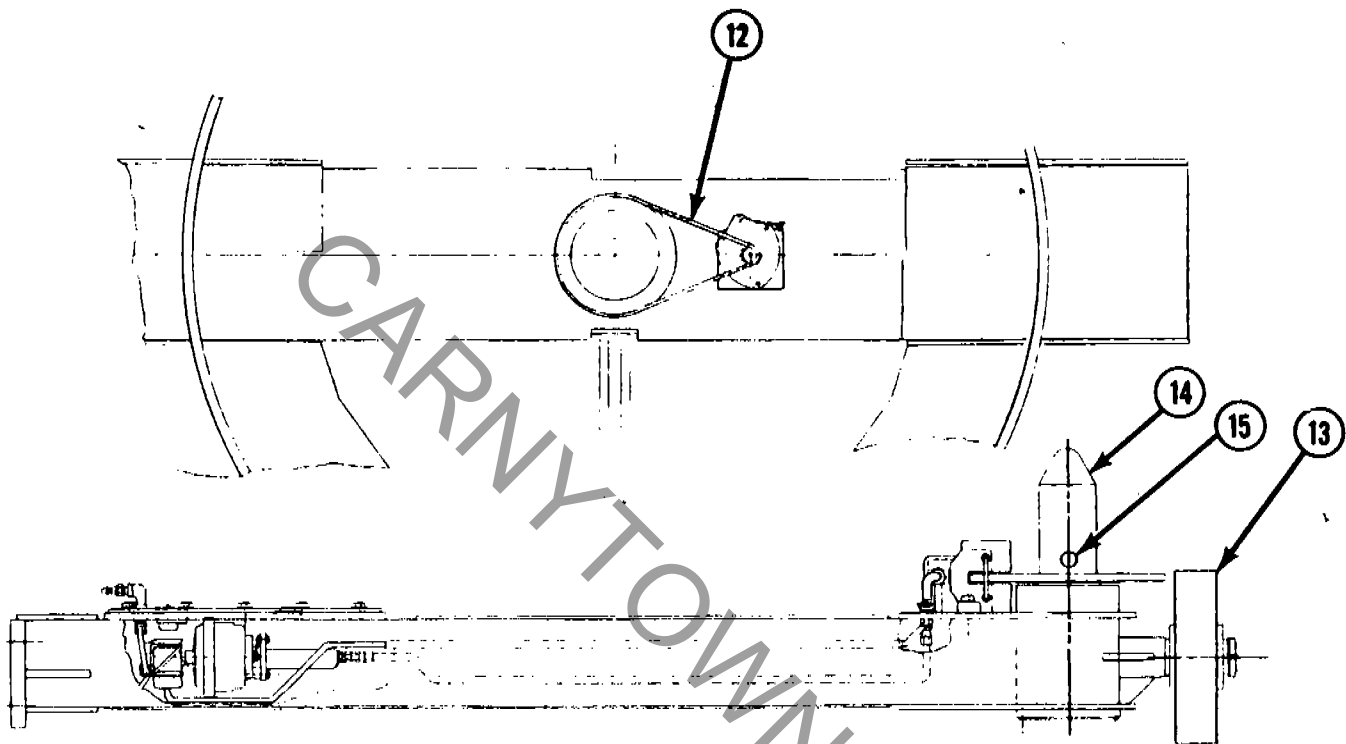
7. () Inspect floor and track with ride running.



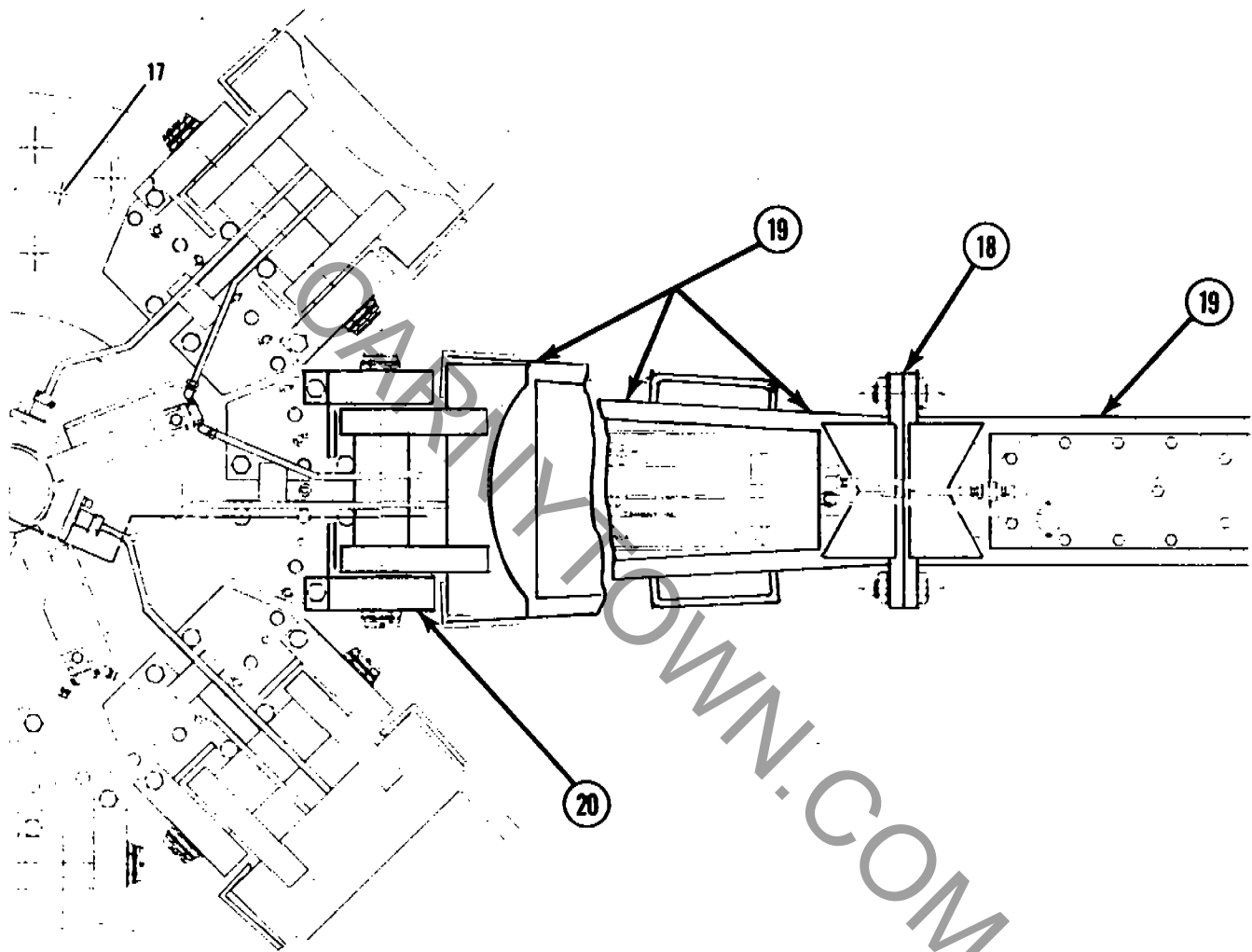
8. () Inspect seats for cracks.
9. () Inspect head rest in each seat (Bulletin 138).
10. () Inspect the seats for restraining belts. 2 belts are required on the front seat, 3 belts on the rear seat (Bulletin 63).



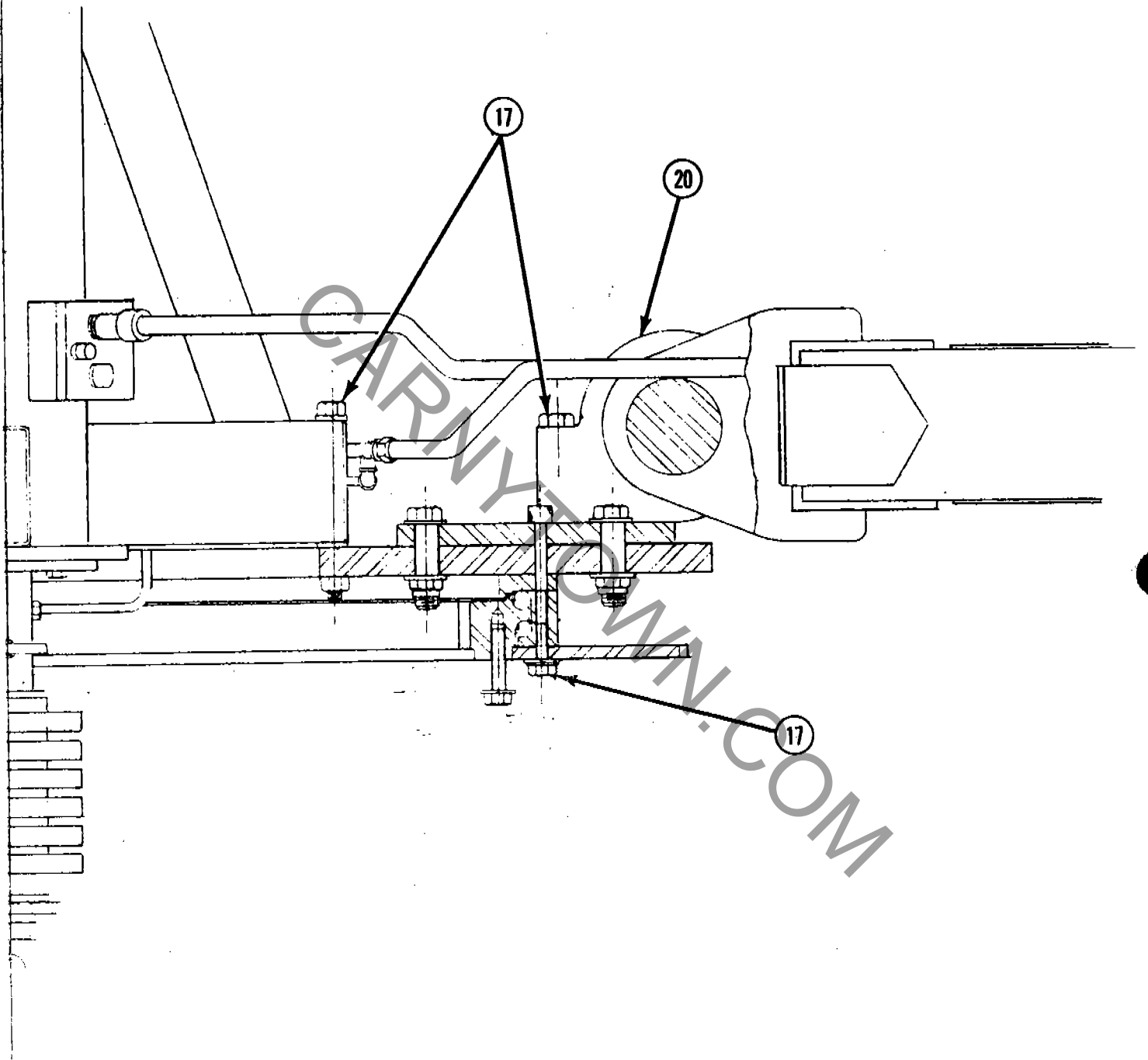
11. () Inspect to see that all track clamps are locked.



- 12. () Inspect drive chain adjustment.
- 13. () Inspect wheel on end of sweep for wear.
- 14. () Inspect seat spindles for cracks and bearing adjustment.
- 15. () Inspect pin and hairpin through seat and spindle.
- 16. () Inspect brake operation on each seat.



- 17. () Inspect bolts in center hub area (Bulletins 104 and 104A).
- 18. () Inspect the joint between inner and outer sweeps (Bulletin 91).
- 19. () Inspect sweeps for cracks.
- 20. () Inspect sweep bearing housings for cracks and check bearings for looseness.



17. () Inspect bolts in center hub area (Bulletins 104 and 104A).

20. () Inspect sweep bearing housings for cracks and check bearings for looseness.



Number: 63

Date: 1-2-74

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers:

Ride: TWISTER

Subject: INSTALLATION OF RESTRAINING BELTS

URGENT

This Service Bulletin is to inform you as a TWISTER owner of a condition that makes the addition of restraining belts to your TWISTER cars necessary and desirable. A complete set of these restraining belts will be shipped to you immediately upon return to us of the enclosed card.

These restraining belts are to be installed in all your TWISTER cars immediately upon receipt.

Chance Manufacturing Company, Inc. is requiring the installation of these restraining belts because of circumstances which have recently come to our attention.

As you know, we have no control over the duration of or number of successive rides a patron is allowed to ride. From field observations, it is surmised that some ride operators are giving too long a ride and allowing patrons to ride a number of times in succession.

Either or both of these conditions may present a hazard to the patron.

Any amusement ride which involves movement imposes a given amount of "G" force in the patron's body. The amount of "G" force and the length of time that such force can be endured varies greatly among individuals.

Should a ride patron reach his or her limit of endurance, blackout could possibly result. If this were to happen, they could possibly slide down and out of the car seat.

You, as a ride owner, should instruct your ride operators of these possible dangers and we would recommend:

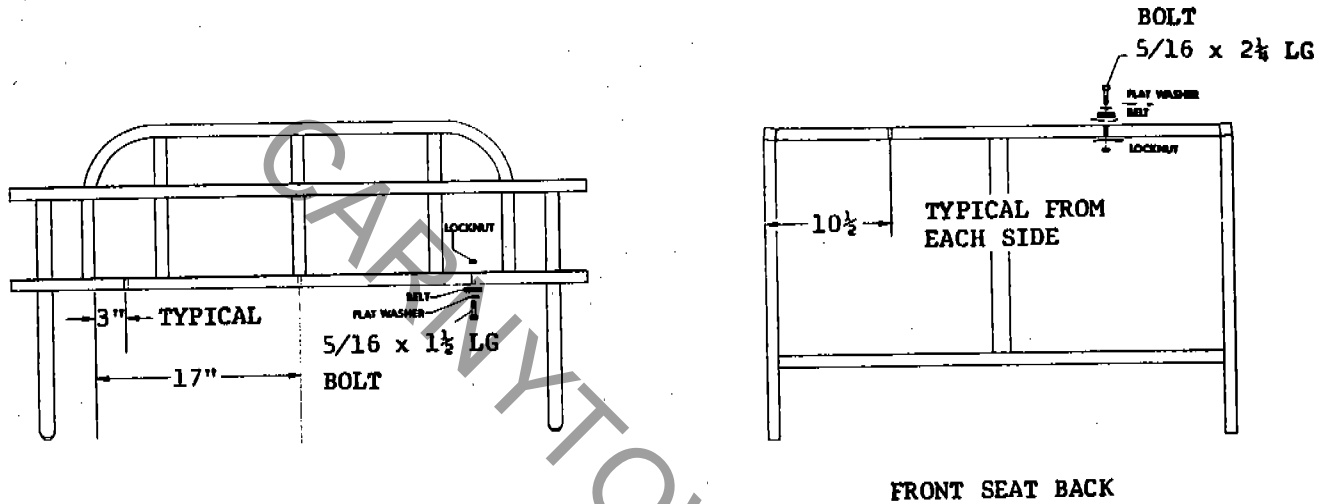
1. Do not give patrons too long a ride.
2. Do not allow a patron to ride in succession.

On the reverse side is a complete set of instructions for installing the belts. In addition you will receive installation instructions with the restraining belts.

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

INSTALLATION OF BELTS

1. Remove the headrests from the cars and drill three $5/16$ " diameter holes in each one as shown.
2. Install $5/16 \times 1\frac{1}{2}$ LG bolt, flat washer and restraining belt from bottom side of tube on the headrest and secure with locknut.
3. Drill two $5/16$ " diameter holes down thru the square tube that supports the back of the front seat of each car.
4. Install $5/16 \times 2\frac{1}{4}$ LG bolt, flatwasher and restraining belt from top side of tube and secure with locknut.



NOTE

When installing belts make sure they are not twisted before bolting.

OPERATION OF RIDE AFTER BELTS ARE INSTALLED

Do not start ride until all passengers have slipped under the Restraining Belts so the belt rest around their mid-section and under arm pits.





Number: 67
Date: 2-14-74

Supersedes:

America's Largest Manufacturer of Amusement Rides

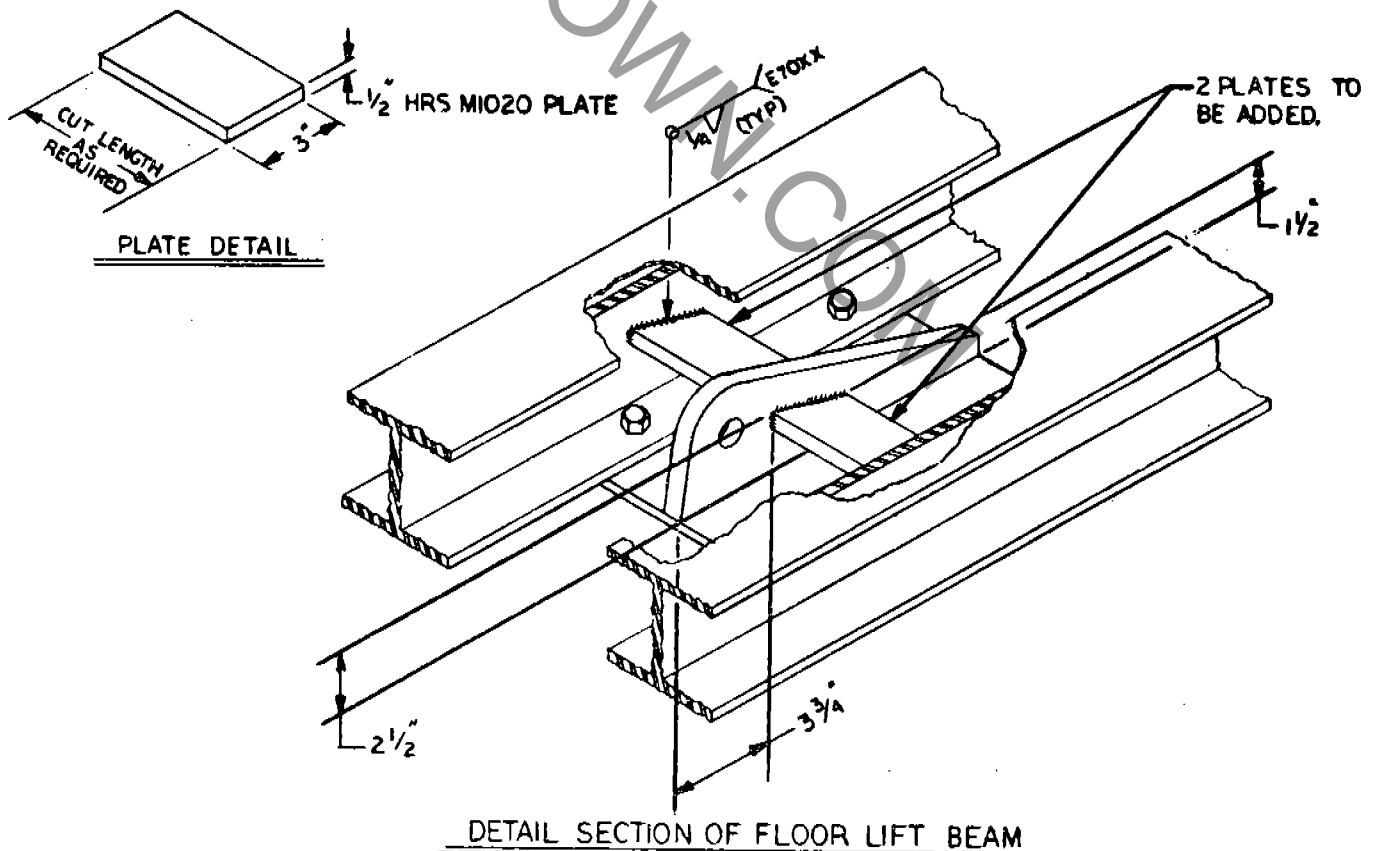
SERVICE BULLETIN

Effective Serial Numbers: 73-2301 THRU 73-2309

Ride: Twister Subject: Floor lift cylinder-structure addition.

TWISTER OWNERS

In order to improve the structure of the floor lift beam cylinder mounting bracket, we ask that the following change be added to both floor lift beams. Weld two $\frac{1}{2}$ " steel plates, one to each side of the hydraulic cylinder mount, in accordance with the dimensions shown in the detail section. Ride owner to furnish plates to be added.



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Number: 71

Date: 5-5-74

Supersedes:

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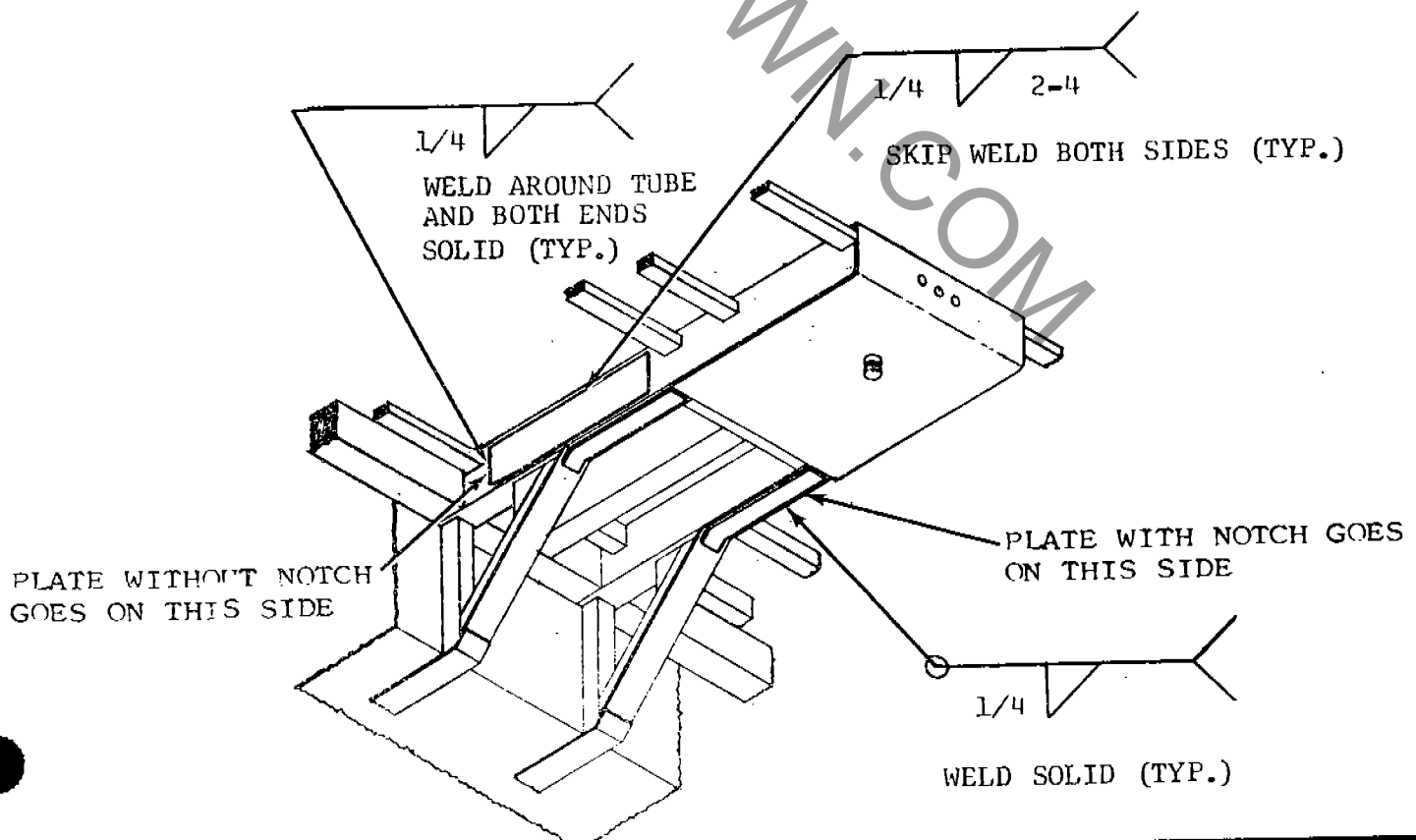
SERVICE BULLETIN

Effective Serial Numbers:

Ride: TWISTER

Subject: Trailer Reinforcement

We wish to inform all Twister owners of an area on the Twister trailer that could be termed marginal as far as strength goes. Should the trailer become bogged in mud and you try to jerk it free, it is possible that the main support tubes could bend. This could also happen if the trailer were bouncing severely on a rough highway. Enclosed is a print showing details of some plates. We are recommending that these plates be added to the trailer immediately. The print calls for 3/8" thick plate and this is recommended. However, if the 3/8" plate is not available, 1/4" plate could be substituted.



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Number: 89

Date: 11-8-74

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers: 73-3201 thru 74-3216

INSTALLATION OF CONTROL

Ride: TWISTER (CHANCE BUILT)

Subject: LEVER DETENT

The following instructions cover installation of a Control Lever Detent which is to be added to each TWISTER.

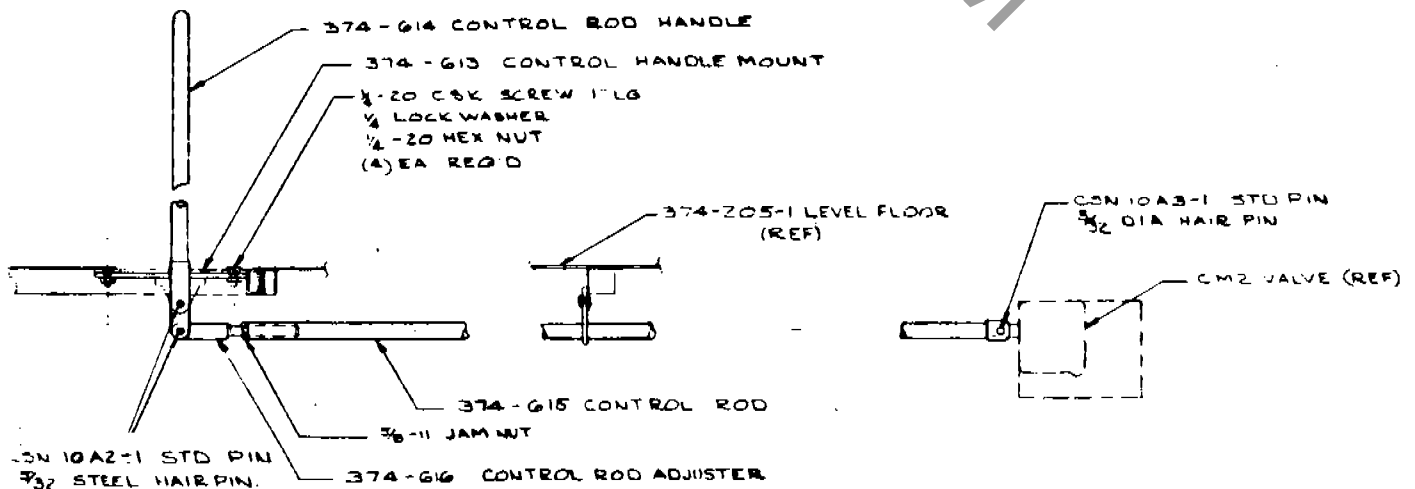
The detent will prevent an accidental engagement of the Control Lever during loading or unloading of the ride.

Quantity	Part Number	Description
1	374-610-3	Control Lever Detent Assy.
3 ea.	1/4-20 x 1 1/4 lg.	Bolt, Lock Washer, Nut

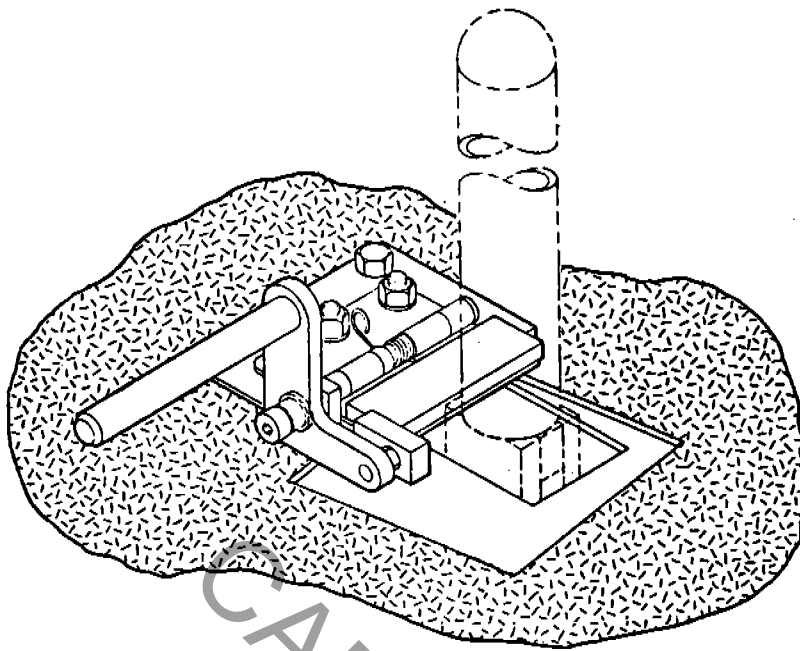
The ride must be erected and the Control Rod Handle and linkage installed.

Before installing the detent, the Control Rod Handle should be adjusted so it is in a vertical position.

To adjust handle, loosen the jam nut and adjuster on the control rod underneath the porch. Turn adjuster until Control Handle is vertical and tighten jam nut.



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Position Detent Assembly in front of the Control Handle, centering it with the travel of the Handle.

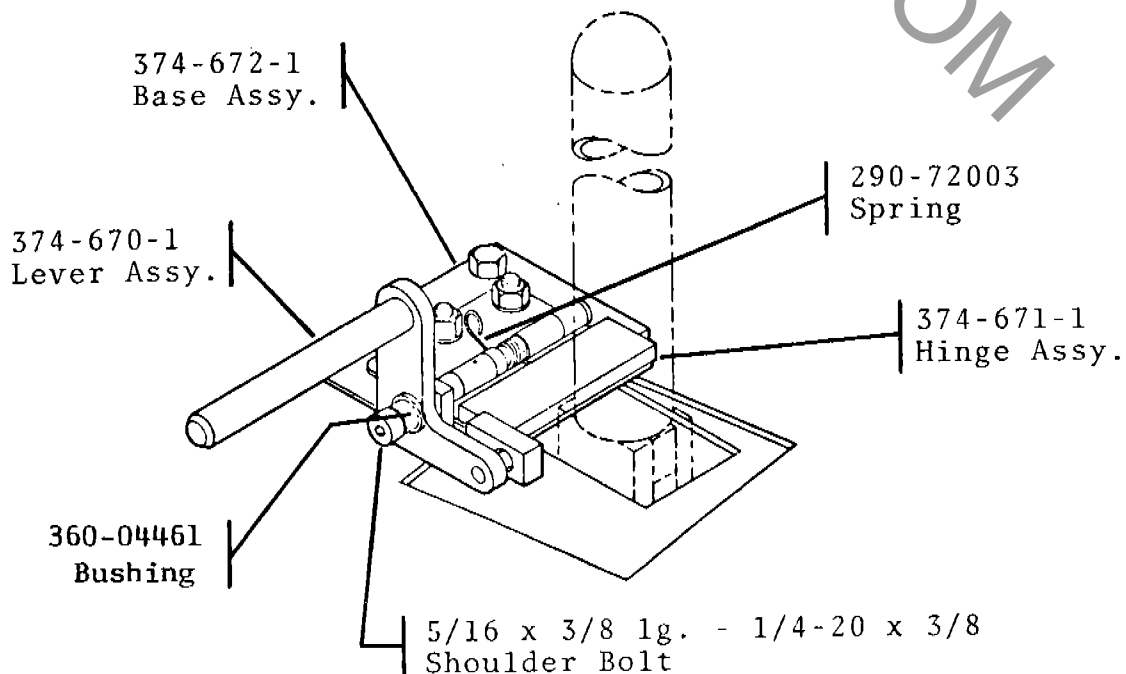
If there is any slop or play in the travel of the handle, push it forward gently until it is at the point of engaging the control valve.

Now, position the detent so that it is up against the Control Handle.

Mark and drill holes to match Detent Base Plate, securing with bolts provided.

REPLACEMENT PARTS

374-610-3 Control Handle Detent Assy.





Number: 90
Date: 11-8-74

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers: 73-3201 thru 74-3216

Ride: TWISTER

Subject: BRAKE RELIEF VALVE
PRESSURE SETTING

From field observations, it has become apparent that a number of TWISTER Rides are being operated with the "Brake Pressure Relief Valve" set at a higher pressure setting than the recommended 700 P.S.I. maximum.

This results in a severe braking action causing discomfort to ride passengers. In addition, it subjects the ride structure to undue stresses.

To eliminate this, we have enclosed a new spring that is to be installed in the relief valve. This will limit the valve to a maximum setting of approximately 700 P.S.I.

INSTALLATION OF SPRING

Remove the left rear possum belly door to gain access to hydraulic components.

The Relief Valve is readily accessible as can be seen in photograph.

To replace spring, loosen the packing nut behind the Adjustment Knob, and carefully remove Adjustment Knob and Stem.

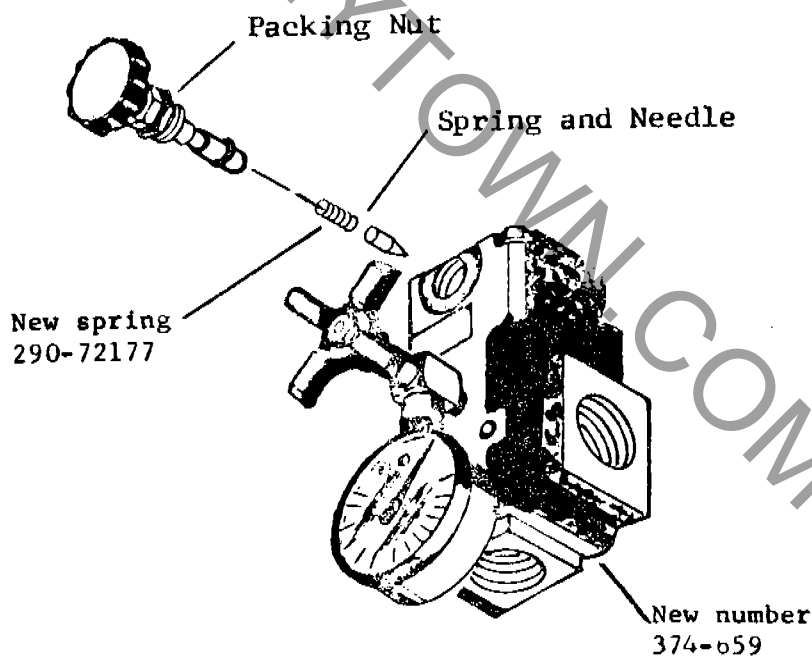
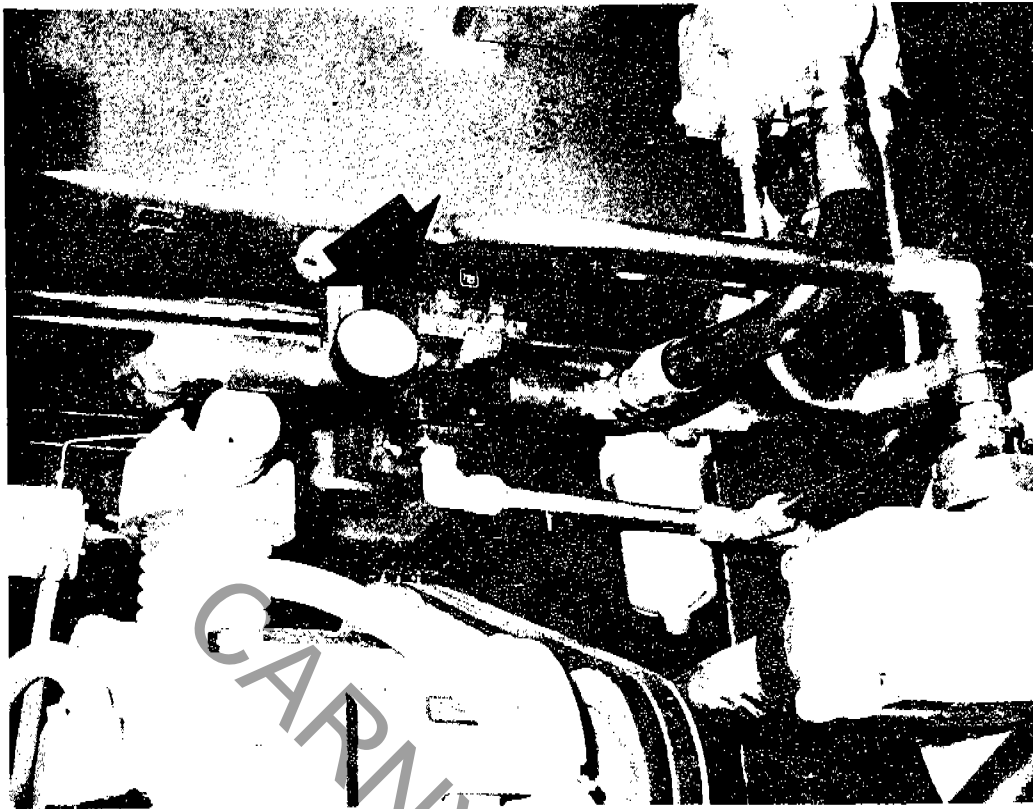
Replace spring and assemble in reverse order.

Run the ride and adjust Relief Valve to approximately 600-700 P.S.I.

CAUTION

Loosen carefully to avoid losing spring and needle, as they will pop out of the hole.

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Valve shown removed from system for Clarity Only

DO NOT REMOVE VALVE FROM SYSTEM

NOTE

Change Valve callout on pages 36 & 42 of the Twister Manual, from MRFN 12P-0A-P-09AA to 374-659



Number: 91

Date: 11-10-74

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers:

Ride: TWISTER

Subject: CHECKING SWEEP FOR CRACKS

One of the Outer Sweeps on a TWISTER has developed a crack in it. The crack developed across the top side starting from the access hole for the Master Cylinder. This has only shown up on one sweep and could be attributed to any one of several possible causes.

However, the most logical cause for the crack is simply that the cover plate was not bolted down tightly.

The cover plate, when tightened down, adds the necessary strength needed in this area of the sweep because of the access hole.

CHECKING SWEEPS (Requires Minimum Two Persons)

All sweeps should be checked immediately.

Remove the cover plate * and inspect area around access hole.

1. Look for cracks in the paint, if paint is old.
2. If ride has recently been painted, look for depressions which might indicate a crack into which paint has run.
3. If ride has been run since painting, again look for cracking or stretching, wrinkles, etc., in paint.

*NOTE:

If any cover plates are found to be loose during inspection, pay particular attention to these sweeps.

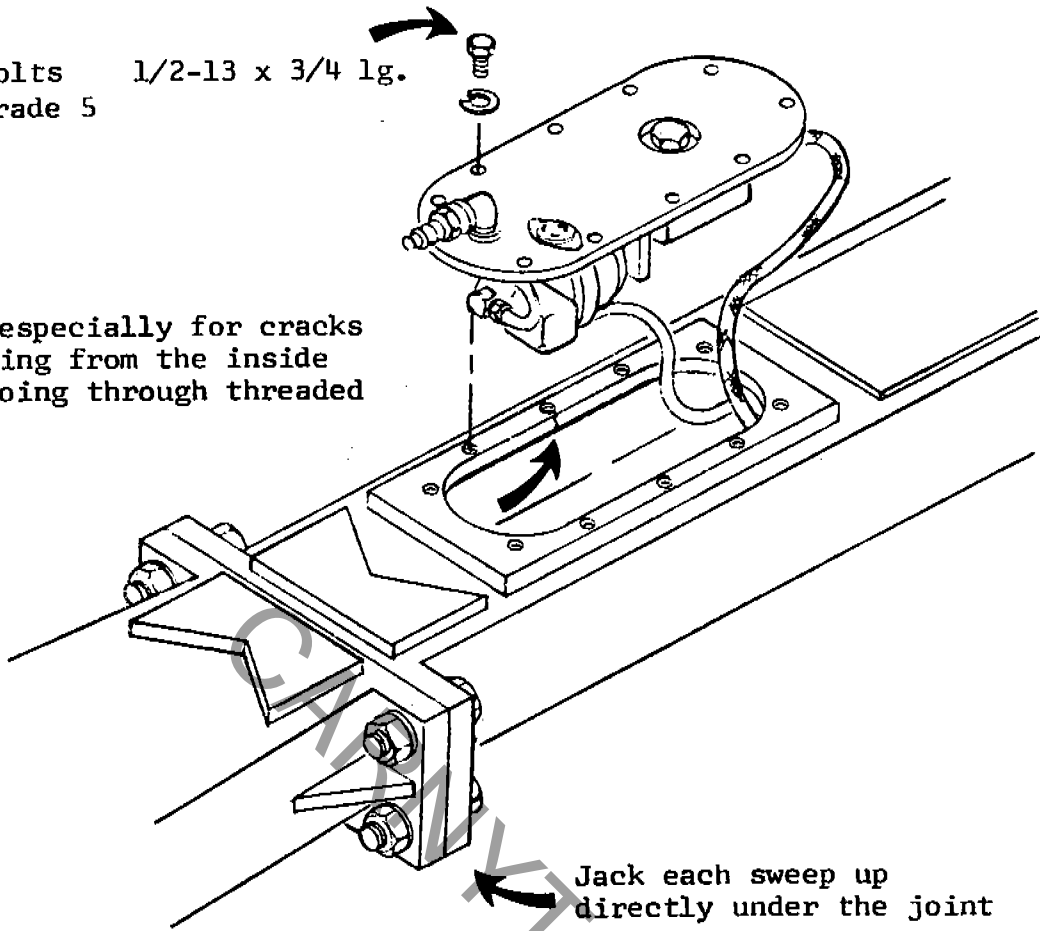
After preliminary check, block or jack each sweep up directly under the bolted joint for inner and outer sweep sections.

Again visually inspect area around access hole while having partner stand on the car and bounce. This will possibly cause crack to show up enough to visually sight if one exists.

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Bolts 1/2-13 x 3/4 lg.
Grade 5

Look especially for cracks starting from the inside and going through threaded hole.



Re-installing Cover Plates

If no cracks are found, install cover plates, torquing bolts to 75 ft. lbs. If bolts are greasy or oily, torque to 55 ft. lbs.

Check length of bolts before installing cover plates. The six bolts along sides should be 3/4 inch long grade 5 bolts. Longer bolts will bottom out against the sweep channel not drawing the cover plate down tight.

If existing bolts are found to be longer than 3/4 inch, notify Chance Manufacturing. Specify quantity of bolts needed, and they will be shipped free of charge.

If ride must be operable before you receive new bolts, either cut the existing ones off to 3/4 inch or replace. Bolts purchased from suppliers other than Chance Manufacturing must be at least a Grade 5 but not more than a Grade 8 bolt.

EXISTING CRACKS

If any cracks are found, consult Chance Manufacturing Company before attempting to repair or operate ride.

FOLLOW-UP CHECKS

Check torque values on bolts securing cover plates weekly. Remove Cover Plates and visually inspect sweep monthly.



Number: 104
Date: 7-21-75

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers:

Ride: TWISTER

Subject: Sweep Check

URGENT

One ride has reportedly developed some problems with the sweep joints where they attach to the center hub. In order to evaluate the precise area and cause, more information is needed from the field.

Please check each sweep on the ride and report findings to Mr. Richard G. Chance, General Manager, Phone - 316, 942-7411.

CHECK THESE AREAS

1. Inspect the plate and ears that bolt onto the Center Hub, paying particular attention to the area around the bolt holes. "B-B" and ears that house the Bearings shown in section "A-A".

Look for any signs of cracks in ears, plate or welds. If the ride has recently been painted, look for signs of cracking or stretching in the paint. If an area is suspected of having cracks, clean area with solvent and apply thinned-down paint or dye penetrant, wiping off excess. Cracks should then show up as fine dark lines.

2. The sweep shaft is tack welded to the sweep ears as shown in "A-A". Inspect this area very carefully to see if welds are holding.

Also, check clearance between sweep ear and the bearing ear. There should be approximately 3/16 inch between the ears.

3. Have two men rock the outer sweep end and observe the hub end of the sweep for any signs of play in the bearings, etc.

REPORT FINDINGS TO CHANCE MFG. CO.

4. In addition to checking the sweep, make sure the Braking Pressure is limited to approximately 600 PSI as prescribed in Bulletin #90, 11-8-74. As stated in that bulletin, higher pressures subject the entire ride to undue stress forces during the braking cycles.

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Number: 104A
Date: 9-19-75

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers:

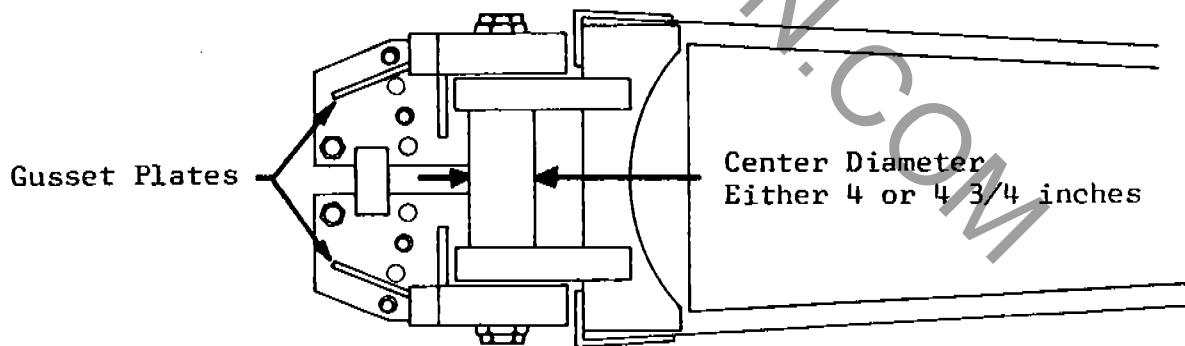
Ride: TWISTER

Subject: SWEEP REPORT

After evaluating the reports on the Sweep joints, Ref. Bulletin 104, it has been determined that it would be desirable to reinforce all existing sweep joints, that haven't already been done.

In order to accomplish this, additional information is necessary from each owner. Please answer the following, and notify us as soon as possible.

1. Center diameter of shaft.
2. Bearing housing (does or does not) have gusset plates as shown.



REPORT FINDINGS TO:

Mr. Richard G. Chance, General Mgr.
Chance Mfg. Co., Inc.
P.O. Box 2397
Wichita, Kansas 67201
Phone: AREA CODE 316, 942-7411

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

CARNYTOWN.COM



Number: 117

Date: 1-5-76

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers:

Ride: TWISTER

Subject: SWEEP REINFORCEMENT
PUMP CHANGE
BRAKE VALVE

DO NOT OPERATE RIDE

Further observations and field reports have indicated that no TWISTER should be operated until the following conditions have been met:

1. Sweeps must be reinforced as described in Bulletin 104A, 105 or 106.
2. The pump supplying the drive circuit must be changed to slow the ride down from 13 R.P.M. to 9 R.P.M.

New pump is a 25V-17A-1C10L Chance Manufacturing Part Number 260-56092.

3. Brake pressure relief valve is modified per Bulletin #90 to limit braking pressure.
- If any of the above has not been completed, contact Mr. Richard G. Chance immediately.

Parts will be provided at no charge.

However, your account will be charged \$205.10 to cover the cost of the new pump. This will be credited back to your account when you ship us the pump currently on your ride.

When contacting factory, be sure to specify information as requested in Bulletin 104A.

REPORT FINDINGS TO:

Mr. Richard G. Chance, General Mgr.
Chance Manufacturing Co., Inc.
P.O. Box 2397
Wichita, Kansas 67201
Phone: AREA CODE 316, 942-7411

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

CARNYTOWN.COM



Number: 138
Date: 7-9-77

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers:

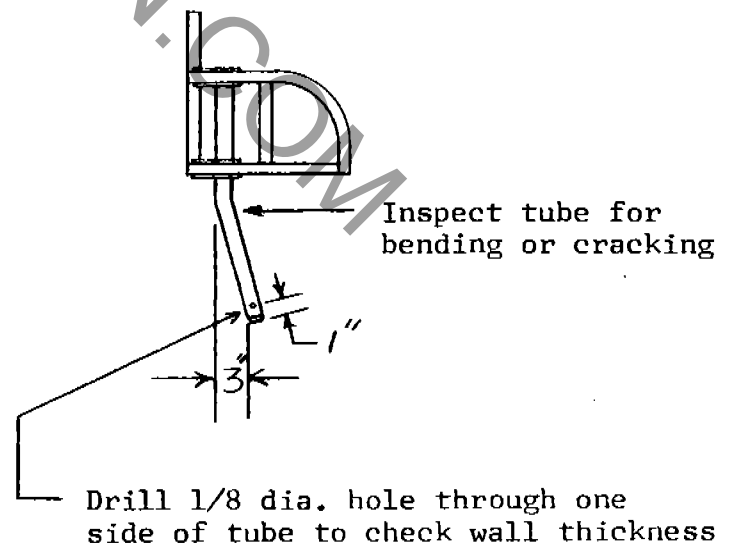
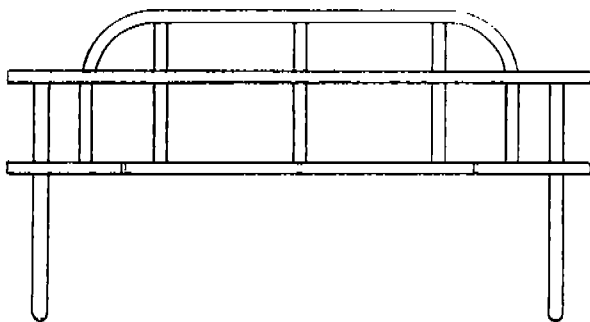
Ride: TWISTER

Subject: HEAD REST INSPECTION

All TWISTER owners must inspect the head rests on all TWISTER cars immediately. Remove each head rest and inspect the support tubes that fit down in the sockets on each car. Inspect for any signs of physical damage, such as bending or cracking. Next, drill a small hole, 1/8 inch, near the bottom of the support tube approximately 1 inch from bottom. Drill hole through one side of the tube only. Check wall thickness of tube. It should be 1/8 inch thick.

If any of the tubes show signs of bending or cracking, or if any tube has less than a 1/8 inch wall, immediately report such condition to Mr. Richard G. Chance, General Manager, Chance Manufacturing Company.

Any of the afore-mentioned conditions could result in a serious accident if the head rests are not inspected, and any faults corrected immediately.



Follow-Up Inspections

Inspect the head rest support tubes on a regular weekly basis as an added measure of safety.

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CARNYTOWN.COM



Number: 60-169

Date: 8-14-78

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers: ALL RIDES

Ride: TWISTER Subject: HUB EAR REPLACEMENT

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

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

The attached CERTIFICATION OF COMPLIANCE must be completed and returned to Chance Manufacturing, Inc. within seven (7) days of receipt of kit.

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

With ride set up remove outer sweep. Fold stub sweep up and lock into place. Use an air arc to cut the broken ear loose around the outer edge of hub plate. Lower stub sweep and cut broken ear loose all the way around.

Disconnect air hose and wiring from stub sweep. Remove nuts bearing and seal from good ear on opposite side of sweep. Remove bolts from broken ear. Remove stub sweep and broken ear. Grind hub plate smooth.

Remove broken ear from stub sweep. Place bearings from broken ear along with new seal into new ear. Place outer attaching bolt in new ear and install new ear onto shaft. Start nuts onto shaft but do not tighten.

If any seals are damaged they must be replaced.

Install stub sweep and new ear on hub plate. Insert bearing along with new seal in opposite ear. Start adjusting nut on shaft but do not tighten. Start all bolts in new ear but do not tighten. Shove new ear as far as possible away from opposite ear and tighten bolts.

Center stub sweep in ears and lightly adjust bearings. It is recommended that the adjustments of these bearings be performed by someone familiar with adjustment of Temkin bearings.

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Tack weld new ear to hub. Check adjustment of bearings and then weld ear to hub all the way around.

All welding must be performed by a welder that is certified under the American Welding Society Structural Welding Code DI. 1-75 or the equivalent.

Check torque on ear attaching bolts. Check bearing adjustment and lock adjustment in place. Install hoses, electrical connections and outer sweep.

The attached CERTIFICATION OF COMPLIANCE must be completed and returned to Chance Manufacturing Co., Inc. within seven (7) days of receipt of kit.

