

*Amusement Rides*

**ALLAN HERSCHELL COMPANY INC.**

and

**THE MINIATURE TRAIN CO. Division**

104 OLIVER STREET

NORTH TONAWANDA, NEW YORK



MFG: ALLEN HERSCHELL

BFI #98

RIDE: MERRY GO ROUND

Bulletin No. \_\_\_\_\_

Date 1/14/97

## Service Bulletin

Ride KIDDIE MERRY-GO-ROUND

Subject ERECTION

File \_\_\_\_\_

RECEIVED

received  
12/22/97

### REFERENCE:

KMG-132 Assembly Drawing  
KMG-100PB Parts Drawing

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### ERECTION INSTRUCTIONS FOR KIDDIE CARROUSEL

1. Lay the foundation in place which consists of two steel cross members and are commonly called Mud Sills (KMG-66). These sills should be placed on solid level ground, concrete slab or concrete piers. If the ride is erected on irregular ground, the five wooden sill blocks furnished must be used under ends and center of mud sills to obtain necessary clearance for horse pipes which will project under the wooden platforms. Cross the two mud sills so that the painted arrow on one joins the painted arrow on the other at their centers. Use a carpenter's level to make certain that mud sills are level in all directions and using shims as necessary under ends of mud sills.

2. Install power unit and reduction gear assembly in position by mating pins welded on top of mud sills to holes drilled in power unit base. Entire unit is properly aligned when base and pins are mated.

3. Installation and assembly of center pole:

(a) Lay center pole (KMG-152) flat on proper mud sill so lower hinge mates with hinge casting on mud sill center. Insert hinge bolt to lock in place. Support center pole on wooden folding buck furnished, placed just below hole where column support hub attaches

(b) Slide Column Support Hub and Bearing Assembly (KMG-44) over top of center pole so that bearing is facing top. Align hub so painted arrow on center pole mates with arrow painted on hub. Insert pin through hub and center pole in drilled holes located at top of painted arrow on hub. Tighten two set screws on either side of pin. Pack bearing with a good grade of cup grease.

(c) Sweep Hub (KMG-46) is placed over column support hub so that crank bearing studs (KMG-68) are facing top of pole.

(d) Slide Bevel Gear (KMG-47) over top of center pole so that gear teeth are facing top of pole. Lock bevel gear into mating slots of column support hub and tighten set screws.

(e) Commutator Assembly (KMG-179) is placed on pole so junction box faces top of pole and bottom edge of commutator rests on bevel gear. Junction box should be aligned with large hole in center pole and final positioning will be made later.

(f) Install eye bolt in hole near top of center pole. Apply two nuts on bolt shaft and tighten from inside of center pole.

(g) Install Center Pole Top (KMG-55), Spindle (KMG-63) and bearing on top of center pole. Firmly position assembly and tighten four set screws. Grease bearing with good grade of cup grease.

(h) Place Spider (KMG-62) over center pole top. Center pole is now "dressed" and ready to raise into vertical position by using several men, block and tackle secured to eye bolt in top of pole or a truck with a boom. When using block and tackle it is important to secure opposite end to solid immovable object to prevent accidents.

(i) Place four Centerpole Brace Pipe Legs (KMG-164) in properly numbered sockets in center pole column support hub. Insert pins through bracket and foot of each leg. Check vertical position of center pole with carpenters level and shim outer ends of mud sills as necessary.

4. Hook one long and one Short Sweep Hanger Rod (KMG-69 1 & 2) opening #1 of spider at top of center pole. Insert #1 Sweep Arm (KMG-116) into mating numbered slot of the ring gear of center pole by using flat end of sweep arm. Painted numbers on sweep arms should be facing up and matched to numbers on ring gear. It is advisable to hang a set of sweep hanger rods, insert sweep arm and connect rods to sweep in individual sequence from #1 through #12.

5. Place sweep arm Spacer Rails (KMG-198) over pins on top of sweep arms. Note that there is a long and short spacer rail for each sweep. The spacer rails that do not have bearings are placed below sweep arms #1-2 and #7-8 to allow for chariots that are placed below.

6. The outside scenery panels are called Cornices and are hung between sweeps in sequence to mate with sweep numbers. The cornices are positioned by large flat keys. Light shields are hung at cornice joints and fastened with thumb screws at bottom edge of shields. Note that cornices are numbered and must be placed in proper sequence while light shields are interchangeable.

7. Canvas tent top is spread over top of sweep rods with smooth side of canvas facing top. After canvas is spread over rods insert Tent Pole (KMG-100) over top of spider. Block and Tackle is attached to eye bolt at top of tent pole with the single block attached to the metal bale ring in the center of the tent top. With block and tackle slightly raise tent top and evenly distribute canvas over top of sweep rods. Hook tent by its snaps around outer edges to the tops of cornices and then raise to proper position with block and tackle using care not to damage canvas. Secure block and tack rope to sweep to hold top in position.

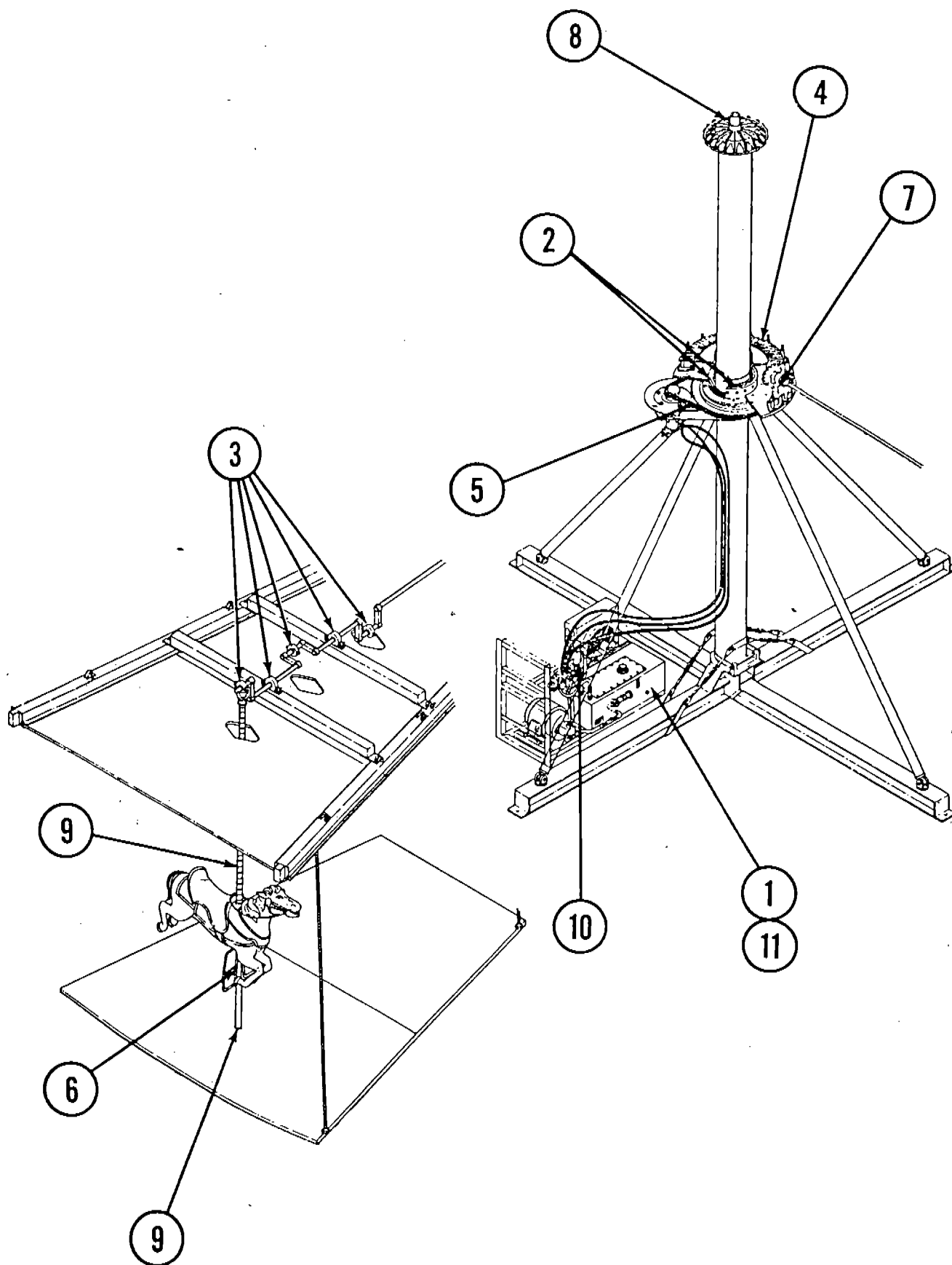
8. Install long and short Crankshafts (KMG-147 1 & 2). Alternate crankshafts with large and small bevel gears. Note that no crankshafts are used between sweeps #1-2 and #7-8. The crankshaft Tee bearings next to the bevel gears are placed over the vertical studs on the ring gear and set screws are tightened to lock in position. Care should be taken to alternate crankshaft throws 180 degrees from each other so jumping horses will have proper action. An easy method of alternating crankshaft throws is to have one pointing down, the next up, etc., and the carousel should not be moved while crankshafts are being installed.
9. Install Brush Assembly (KMG-154) in marked location on top of sweep hub. Brush fingers are aligned with metal bars on commutator collar by moving collar into proper position on center pole and tightening set screws. Insert one end of electrical harness cable through large hole near top of center pole and draw out through a large hole near bottom. The plug at top end is joined to commutator junction box and plug at bottom will be joined to switch box.
10. Hook Platform Support Rods (KMG-70) to eyes welded on underside of sweep arms. Place metal platform to support channels in place over lower nuts on ends of platform support rods. The platform support channels have one end beveled and this should be facing outside of carousel. Wooden platforms are now positioned over support channels with top nuts being drawn down to secure into position. Note that chariot platforms contain metal keyways and are placed under sweeps #1-2 and #7-8. Hook Sway Rods (KMG-153-2) to #2 and #8 sweep arm eyes and secure lower ends to platform support channel nuts.
11. Insert Horsepipe Rods (KMG-75) through horse body so that bearing is on top. Insert the L Shaped metal pin through rod below horse and lower horse on rod until pin elbow fits into holes drilled in belly of horse. Hang complete assembly to crankshaft throw and tighten top set screw immediately. Small horses should be used on inside row and large horses placed on outside.
12. Install chariots on platform between sweeps #1-2 and #7-8. Lock in place on platform by inserting base pins into metal keyway slots in platform and push into restricted ends of key ways.
13. Insert Pinion Gear Bracket (KMG-77) shaft (commonly called "banjo") through Vertical Drive Shaft (KMG-79) bearing assembly. Fit drive shaft base over pins on drive shaft collar on gear reducer. Lift pinion gear bracket (banjo) and bearing assembly up drive shaft and fit banjo foot in pocket on column support hub. Make certain banjo foot is well seated in its pocket and tighten set screw. The two vertical Allenhead set screws in the split bearing are tightened and then the set screw in the bearing face is tightened. Install two Support Legs (KMH-160) to banjo shaft with the red painted leg being installed first. The top of support legs are placed over the banjo bracket and the bottom of legs are bolted in place on mud sills. The set screws at top of support legs are tightened to secure legs in position.

14. Bolt switch box assembly to metal plate welded to mud sill leg. Connect electrical harness cable plug leading out of bottom hole in center pole to switch box as marked. Short electrical cable is hooked to power unit and switch box as marked. Electrical power source is connected to switch box as marked.

15. Canvas side wall is hooked to eyelets on sweep arms and then rolled to the top and secured to sweep arms with rope ties.

16. Lubricate entire carrousel with a good grade of cup grease (Gargoyle AA #2) and oil all crankshaft bearings. Proper lubrication is important for maintenance free operation and refer to drawing KMG-100PB for lubrication points and frequency.

# Maintenance Schedule – Rides With Hydraulic Drive



## Lubricants Chart

Timely lubrication and the use of high quality oil and grease is necessary to obtain the maximum life of the ride and its components. Use only the oils and grease specified in the following chart.

**IMPORTANT:** In addition to the following items, certain components require special lubricants. Refer to the "Vendor Literature" section of this manual for lubricant specifications for specific components.

COMPONENT	SPECIFICATION
All Zerk Fittings and Bevel Gear	No. 2 Lithium Base Grease
Hydraulic Fluid	Non-detergent motor oil, API Service Classification MS, SAE 10W  Examples: D.T.E. - 24 Mobil 10-10W Universal Hydraulic Fluid
Telescopes	Any high quality, multi-purpose machine oil - SAE 20W or SAE 30W
Drive Chain and Sprockets	Any high quality industrial drive chain lubricant made for extreme-pressure, low speed operation
Gearbox (Rides without hydraulic drive)	Multi-Purpose Gear Oil MIL-L-205B SAE 90-140
Fluid Coupling (Rides without hydraulic drive)	Engine Oil - A.P.I. Service Classification MS - SAE 5W

# Maintenance Schedule - Rides With Hydraulic Drive

1750  
6-850

NOTE: Open the manual valve at the hydraulic motor to allow hand rotation of the ride for lubrication.

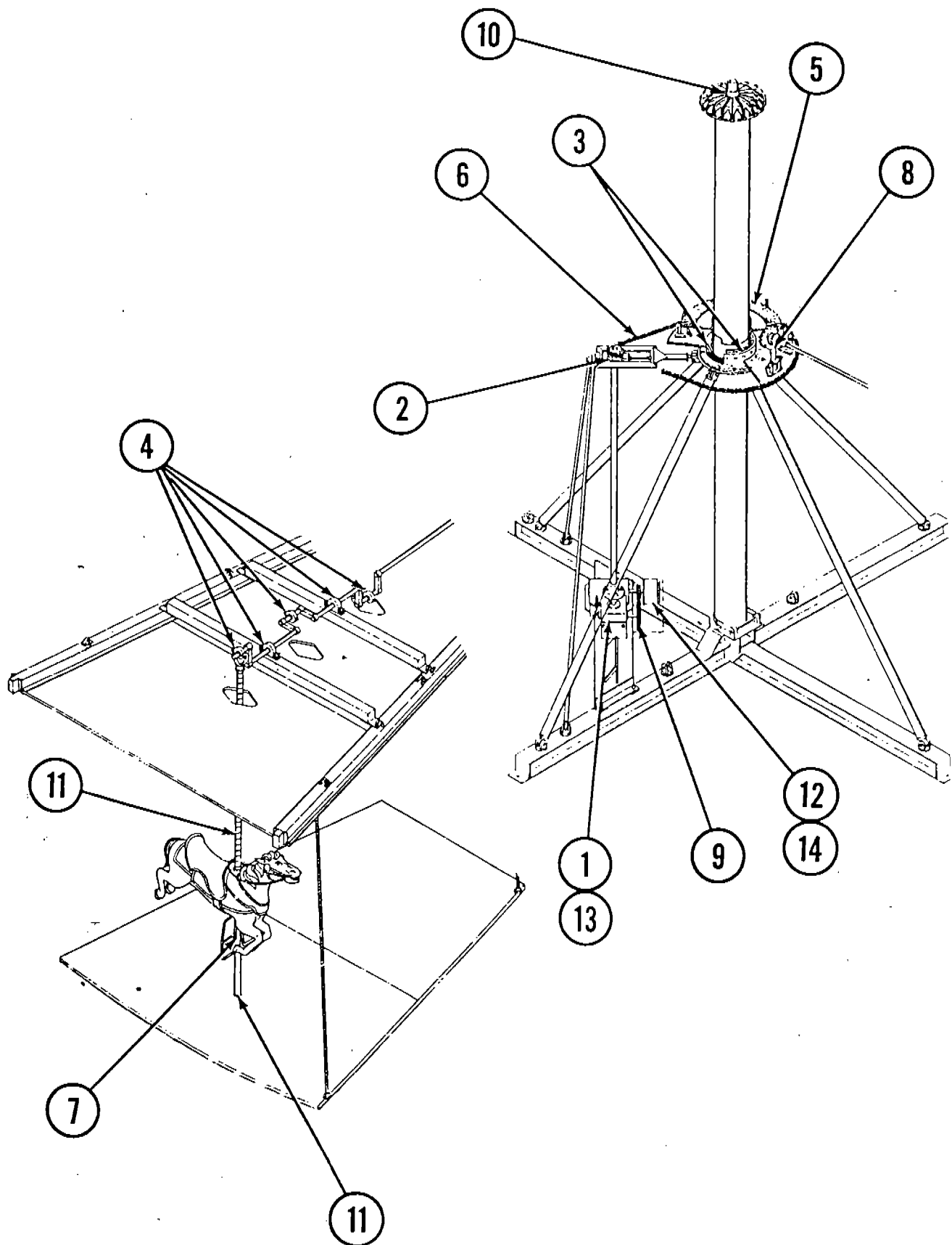
IMPORTANT: In addition to the following items, certain components require scheduled maintenance. Refer to the "Vendor Literature" section of this manual for maintenance schedules for specific components.

REF. NO.	COMPONENT	SERVICE REQUIRED	SEE PAGE	FREQUENCY
1	HYDRAULIC OIL RESERVOIR	Check level at sight glass. Fill as required	5-6	Daily
2	SWEEP HUB BEARING ZERKS (2 Places)	Grease	4-4	Weekly, or at every set-up, whichever occurs first
3	CRANKSHAFT BEARING ZERKS	Grease	4-4	
4	BEVEL GEAR	Grease teeth evenly by hand	4-4	
5	DRIVE CHAIN	Lubricate and check tightness	4-14	
6	TELESCOPES (30 Places)	Oil	4-4	
7	TEE BEARING SET SCREWS (12 Places)	Check tightness	4-4	Monthly, or at every set-up, whichever occurs first
8	SPIDER THRUST BEARING ZERK *	Grease	4-4	
9	HORSE PIPES AND TELESCOPES	Inspect horse hanger hooks and telescope locks	4-13	
10	HYDRAULIC OIL FILTER **	Replace with a new filter	5-6	Once per season or every 6 months whichever occurs first
11	HYDRAULIC OIL RESERVOIR	Drain the reservoir, clean the strainer and refill with new oil	5-6	

\* Lower the canvas and remove the tent pole if required to obtain access to the zerk.

\*\* Replace the hydraulic oil filter after the first two weeks of operation and at the regular interval thereafter

# Maintenance Schedule – Rides Without Hydraulic Drive





## Maintenance Schedule - Rides Without Hydraulic Drive

**IMPORTANT:** In addition to the following items, certain components require scheduled maintenance. Refer to the "Vendor Literature" section of this manual for maintenance schedules for specific components.

REF. NO.	COMPONENT	SERVICE REQUIRED	SEE PAGE	FREQUENCY
1	GEARBOX	Check fluid level. Fill as required	4-15	Weekly, or at every set-up, whichever occurs first
2	DRIVESHAFT BEARING ZERK	Grease	4-6	
3	SWEEP HUB BEARING ZERKS (2 Places)	Grease	4-6	
4	CRANKSHAFT BEARING ZERKS	Grease	4-6	
5	BEVEL GEAR	Grease teeth evenly by hand	4-6	
6	DRIVE CHAIN	Lubricate and check tightness	4-14	
7	TELESCOPES (30 Places)	Oil	4-6	
8	TEE BEARING SET SCREWS (12 Places)	Check tightness	4-6	
9	DRIVE BELT	Check belt tension	4-15	
10	SPIDER THRUST BEARING ZERK *	Grease	4-4	Monthly, or at every set-up, whichever occurs first
11	HORSE PIPES AND TELESCOPES	Inspect horse hanger hooks and telescope locks	4-13	
12	FLUID COUPLING	Check for leaks. Fill as required	4-15	
13	GEARBOX **	Drain and refill with new oil	4-15	Once per season or every 6 months whichever occurs first
14	FLUID COUPLING	Drain and refill with new oil	4-15	

\* Lower the canvas and remove the tent pole if required to obtain access to the zerk.

\*\* Drain, flush and refill the gearbox after the first 100 hours of operation

## Safety

The following is a list of a few general selected rules which should be adhered to by everyone.

Remember that in the long run the key to a safe and successful operation is to have well-trained and well-supervised employees.

### General Safety Guidelines

1. All work must be done 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 it is unsafe, or that unsafe conditions are developing.

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

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

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

6. Use the proper tool or equipment for each job. Ground all hand electric power tools before use.

7. Wear close-fitting, comfortable clothing when working on or close to 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 to be performed is hazardous, at least two men shall work together.

11. If guards must be 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 that are frequent or cause unsafe conditions.

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

## Troubleshooting Procedures

Before calling the CHANCE CUSTOMER SERVICE DEPARTMENT for help, be prepared with the following information:

1. Have ride serial number and name available.

2. Have manual ready to use as reference.

3. If ride was formerly owned - by whom? (Chance records will often show changes made to a ride by its previous owner)

4. Have the same person make all calls. Be sure to get the name of the person to whom he is speaking at the factory. All calls should then be made to that person.

5. Have a telephone number ready at which you can be reached.

6. Have shipping instructions ready (how, when, and where to ship parts).

7. Have list of any alterations, modifications or kits that have been added to the ride.

8. The person calling the factory must be familiar with the problem and able to describe symptoms of the ride problem (such as: was the problem gradual; did it suddenly quit; are any sounds occurring that are not normal; does the problem occur continuously or is it intermittent; does the ride run one direction only; does the ride run but has no braking, etc.)

9. Many times the problem that completely stops a ride from working is one of many simple things that are forgotten or overlooked. Listed on the following chart are many of the items that may cause this, as well as all items that must be checked before any calls are made to the factory. Use this chart to try and determine the cause. It can save several expensive phone calls or a more expensive visit by a factory representative, as well as valuable time.

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