CHANCE RIDES MANUFACTURING, INC.
4200 Walker
Wichita, KS 67277-2328
U.S.A.
Phone: 1-316-942-7411 • FAX: 1-316-942-7416
Website: www.chancerides.com
E-mail: rides@chancerides.com

Bulletin No: B380CRM185-0
Release Date: October 18, 2013
Effective Date: October 18, 2013
Supersedes: N / A
Completion Date: Immediately

SERVICE BULLETIN

Ride Manufacturer: CHANCE MANUFACTURING COMPANY, INC.
Affected Production Dates: All

Ride Name: ZUMUR
Affected Serial Nos.: All Units

Model No.: 380

Abstract of Issue:
Hydraulic Motor Shaft Maintenance and Inspection

Reason For Release:
CHANCE RIDES MANUFACTURING, INC. has recently become aware of a failed motor shaft on a ZUMUR amusement ride.

After many years of operation, the structural integrity of the hydraulic motor shaft can become weakened by fatigue. If weakened sufficiently, it can fail completely. Failure of the shaft can result in serious injuries to passengers, operators and/or bystanders.

A number of factors can affect the service life of the hydraulic motor shaft. These factors include, but are not limited to proper lubrication and adjustment of the gear mesh (backlash).

This service bulletin is being released to define the maintenance and inspection procedures required to monitor the condition of the hydraulic motor shaft.

Action to be Taken:
All owner/operators of the above noted amusement rides are required to maintain and inspect the ride as specified in the following pages of this bulletin at the intervals specified.

Observe all safety information contained in the manufacturer's manuals. Make available this bulletin and all related technical information to personnel using the equipment.

CHANCE RIDES MANUFACTURING, INC.
4200 Walker
Wichita, KS 67277-2328
U.S.A.
Phone: 1-316-942-7411 • FAX: 1-316-942-7416
Website: www.chancerides.com
E-mail: rides@chancerides.com

Bulletin No:	B380CRM185-0
Release Date:	October 18, 2013
Effective Date:	October 18, 2013
Supersedes:	N / A
Completion Date:	Immediately
Page:	2 of 4

Ride Manufacturer: CHANCE MANUFACTURING COMPANY, INC.
Affected Production Dates: All

Ride Name: ZUMUR
Affected Serial Nos.: All Units

Model No.: 380

Detail of Issue

Maintenance and Inspection Schedule for Hydraulic Motor and Pinion

The following items must be checked as described. These are in addition to all other maintenance items described in the *ZUMUR Operation and Maintenance Manual*:

NOTE: *Remove the four bolts which secure the access cover over the drive pinion to gain access to the components described below.*

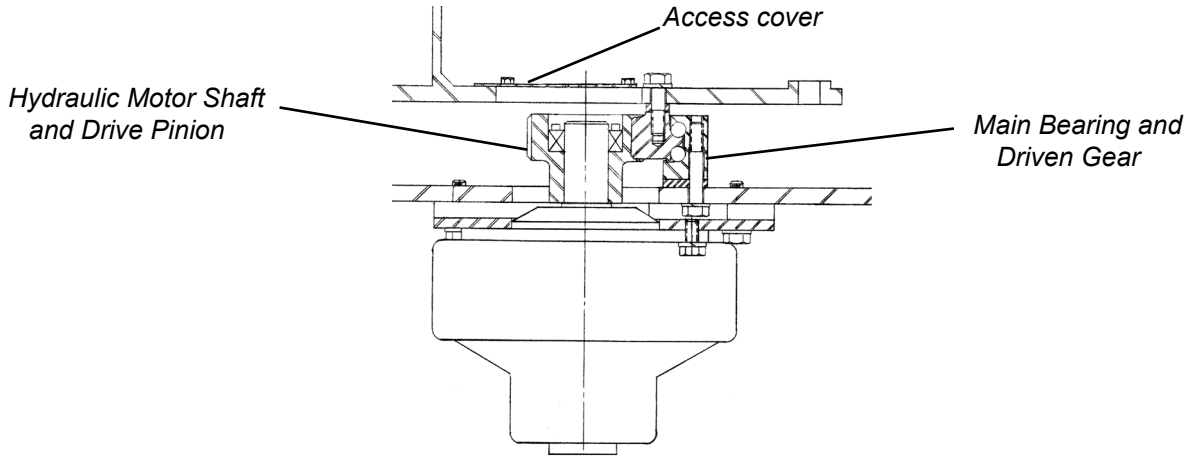
WEEKLY

1. Pinion drive gear inspection - Look for wear or damage on the external teeth of the pinion.
2. Main bearing gear inspection - Look for wear or damage on the internal teeth of the main bearing.
3. Pinion drive gear and main bearing gear lubrication - Apply/redistribute grease to the gear teeth.

ANNUALLY

4. Pinion gear backlash adjustment - Check the backlash between the pinion gear and the main bearing gear teeth. Proper backlash is 0.010 to 0.015".

5. Non-destructive test (NDT) of the hydraulic motor shaft - This procedure is described in detail on page 4 of this servic e bulletin. (This inspection must be performed by certified Level II ultrasonic NDT inspection personnel).



CHANCE RIDES MANUFACTURING, INC.
4200 Walker
Wichita, KS 67277-2328
U.S.A.
Phone: 1-316-942-7411 • FAX: 1-316-942-7416
Website: www.chancerides.com
E-mail: rides@chancerides.com

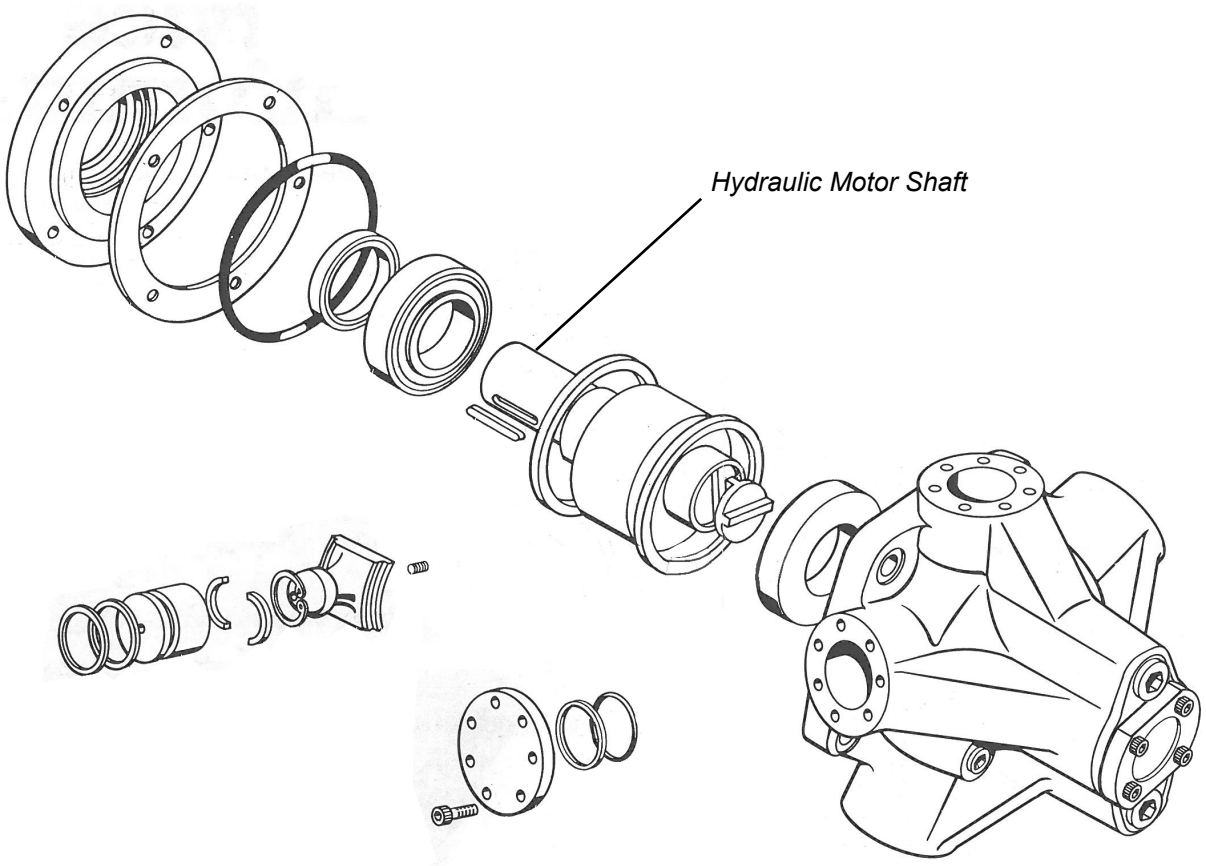
Bulletin No:	B380CRM185-0
Release Date:	October 18, 2013
Effective Date:	October 18, 2013
Supersedes:	N / A
Completion Date:	Immediately
Page:	3 of 4

Ride Manufacturer: CHANCE MANUFACTURING COMPANY, INC.
Affected Production Dates: All

Ride Name: ZUMUR
Affected Serial Nos.: All Units

Model No.: 380

Detail of Issue (continued):



CHANCE RIDES MANUFACTURING, INC.
4200 Walker
Wichita, KS 67277-2328
U.S.A.
Phone: 1-316-942-7411 • FAX: 1-316-942-7416
Website: www.chancerides.com
E-mail: rides@chancerides.com

Bulletin No: B380CRM185-0
Release Date: October 18, 2013
Effective Date: October 18, 2013
Supersedes: N / A
Completion Date: Immediately

Ride Manufacturer: CHANCE MANUFACTURING COMPANY, INC.
Affected Production Dates: All

Ride Name: ZUMUR
Affected Serial Nos.: All Units

Model No.: 380

Detail of Issue (continued):

Non-Destructive Test (NDT) Procedure - Hydraulic Motor Shaft Fatigue Indications

Method: Straight beam ultrasonic testing

Instrument: Ultrasonic flaw detector

Transducer: 5 MHz, 1/2" diameter

Preparation: Remove the four capscrews which secure the inspection cover to the hub. Rotate the hub to align the inspection opening over the motor shaft. Remove grease and corrosion from the top of the shaft.

Distance calibration: Calibrate the instrument for distance using a DSC block for a 5-inch screen.

Sensitivity calibration: Set instrument gain so that the signal from the slot on the side of the DSC block is at 80% of full screeen height.

Test: Scan the entire top surface of the shaft.

Acceptance criteria: Any indication over 10% of full screen height should be considered relevant. Any indication over 20% of full screen height should be considered rejectable.

Confirmation of relevant indications: Remove the shaft from the motor and the pinion from the shaft. Wet fluorescent magnetic particle test to confirm the presence of a fatigue crack. Confirmation of any linear indication by magnetic particle inspection merits rejection of the shaft.