



MAN-CO MFG., INC.

2725 19th Street S.E. • P.O. Box 13114 • Salem, Oregon 97309 U.S.A.
Office (503) 362-2341 • FAX (503) 362-2536

BULLETIN: BU-134 MC

DATE: 8/30/88

ROUND-UP/PARATROOPER MAIN SPINDLE SHAFT SAFETY LIMITING RING

ATTENTION ALL ROUND-UP AND PARATROOPER OWNERS

A Round-Up manufactured by Frank Hrubetz & Co., Inc. has experienced a failure in the upper bearing in place on the main spindle. When this happened, support at the top of the spindle was lost making it possible for the rotating platform to tilt and contact the main boom.

This condition makes it possible for the pins and sweeps to hit the boom and bring the rotating platform to a sudden stop.

Since the same shaft and hub assemblies are used in both the Round-Up and the Paratrooper, we feel that the problem exists in both types of rides.

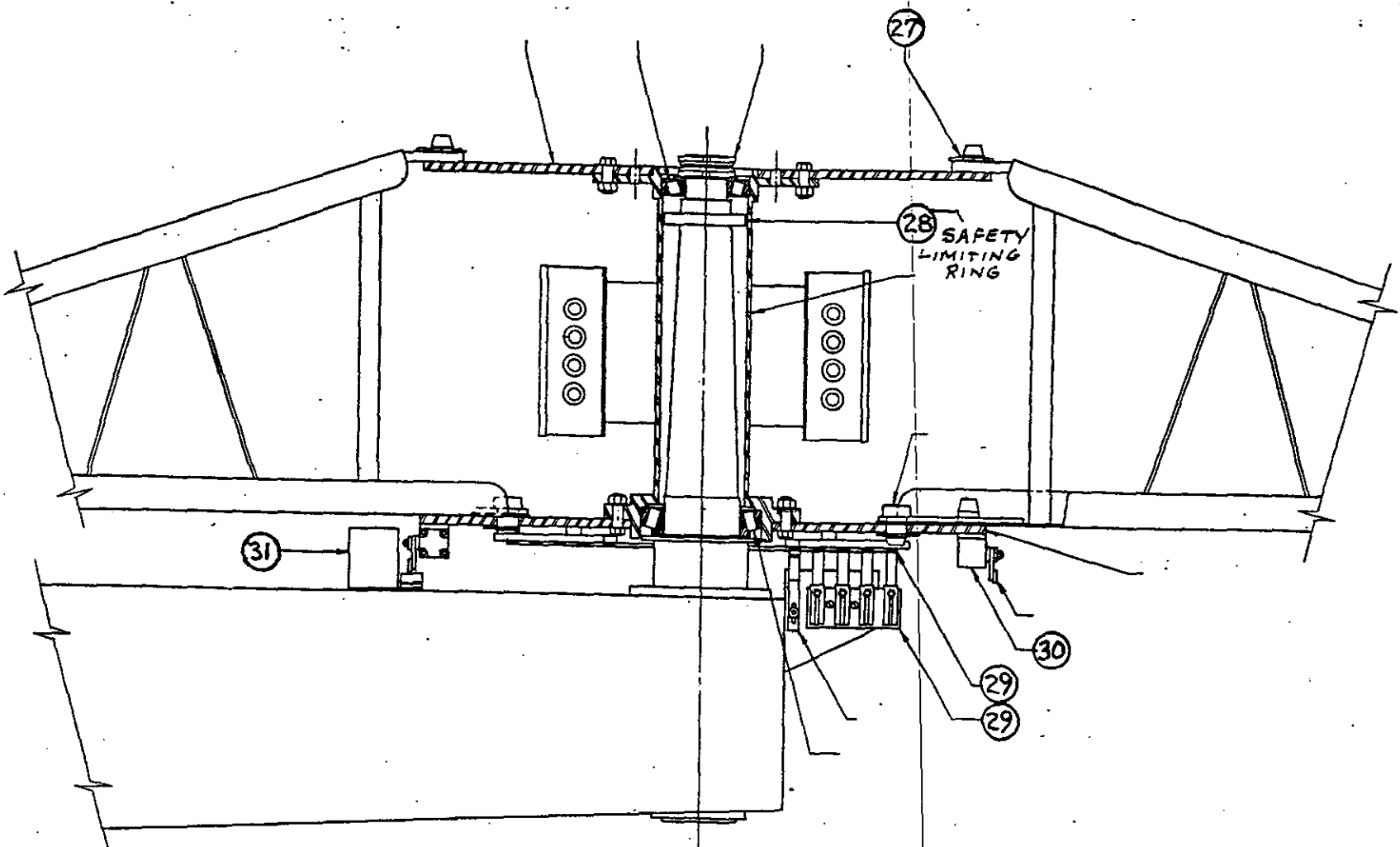
We feel it is necessary for you to take the following preventive measures immediately: (See enclosed drawings RD-35R and FR-503S.)

1. Remove the center ornament and inspect the weld on the hub (shown in drawings RD-35R and FR-503S) for cracks. If there are cracks, ship the hub to Man-Co Mfg.. We will repair, using the design presently being used.
2. Remove the top bearing and visually inspect the bearing and make sure there is a safety limiting ring in place. If there is a limiting ring on your ride, it will be plainly visible on the upper portion of your main spindle shaft. If it is not present, we highly recommend that you add this part immediately. (Part #STD 353)

Although Man-Co is not responsible for the manufacturing of these rides, we are the exclusive manufacturer of replacement parts. We feel that it is in the best safety and interest of your customers that this preventive measure is adhered to.

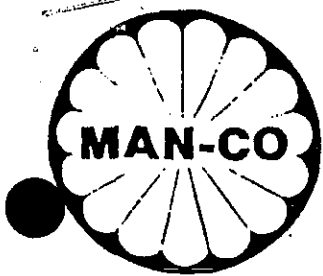
MATERIAL SPEC.

| REV | QUANT. | DESCRIPTION |
|-----|--------|-------------|
| | | |



| | | | |
|---|------|---|----|
| MAN-CO MFG. INC. 3475 EWALD AVE. S.E. SALEM, OREGON 97302 | | | |
| DESIGNED BY: PETE T. | | DATE: 8-26-80 | |
| REVISIONS | DATE | DESCRIPTION | BY |
| | | | |
| DATE: 7/25/80 | | DESCRIPTION: REVISED AND REDRAWN | |
| BY: B | | CHECKED BY: FR-503 S | |
| CENTER HUB ASSEMBLY | | | |

| | |
|----------------------|---|
| DATE: 7/25/80 | DESCRIPTION: REVISED AND REDRAWN |
| BY: B | CHECKED BY: FR-503 S |



MAN-CO MFG., INC.

2725 19th Street S.E. • P.O. Box 13114 • Salem, OR 97309 U.S.A. • (503) 362-2341

BULLETIN: BU-136 MC

NOTICE: THIS BULLETIN SUPERCEDES BU-131 MC DATED 1/5/82

DATE: 9/8/88

ROUND-UP/PARATROOPER HUB INSPECTION

The main spindle shaft hub housing on the Round-Up and Paratrooper amusement rides that were manufactured by Frank Hrubetz Co., and Kilinski Mfg. Co. (KMC) have shown some sign of fatigue cracks in the weld areas of the hub assemblies.

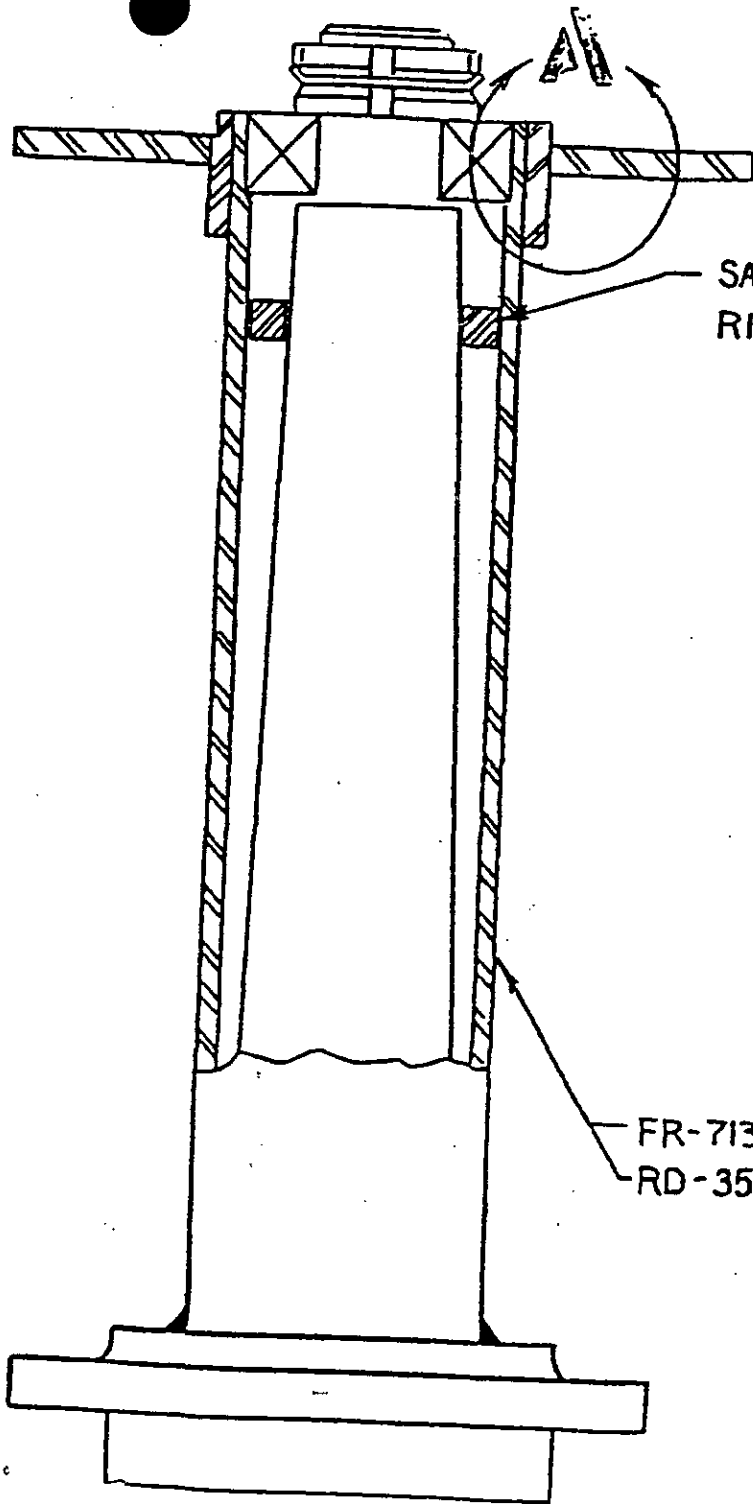
We at Man-Co feel that this is something that should be inspected on a more regular basis and so we are recommending that the welds shown in the attached drawing (BU-136-MC) be inspected annually. If any sign of stress or cracks are noted, then we recommend that the entire hub assembly be replaced for the safety of the ride owners and customers.

Although Man-Co Mfg., Inc. is not responsible for the manufacturing of Hrubetz or KMC rides, we are the exclusive manufacturer of replacement parts. We feel that it is in the best safety of your customers that this preventive inspection is adhered to.

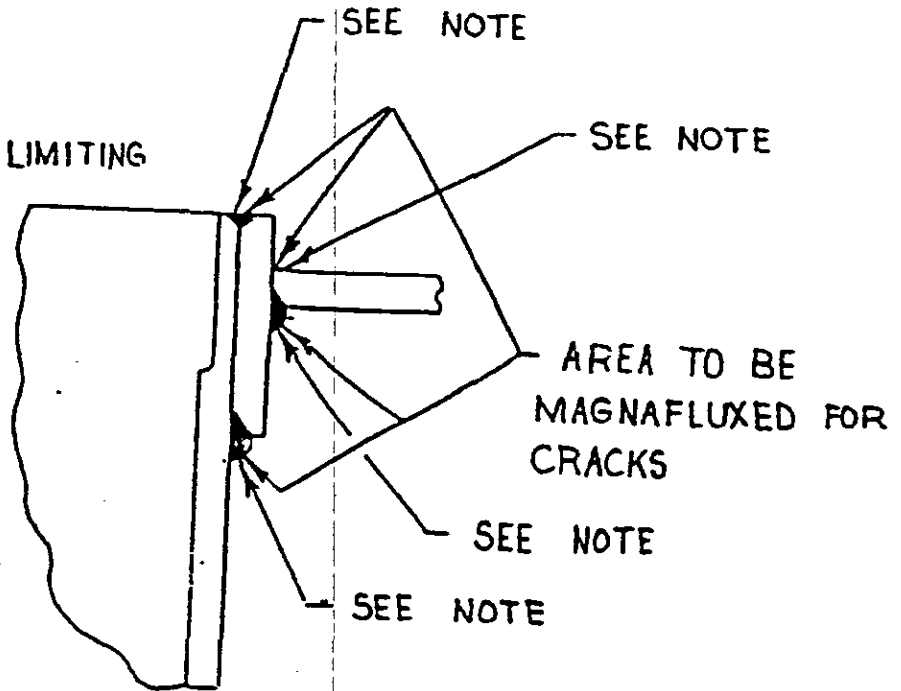
Hurricane • Paratrooper • Super Slide • Tip Top • Round Up • Rip-Tide

MAN-CO Builds Thrills!

Man-Co Manufacturing, Inc.
QC-MI-1-Rev 0
2-28-89



SAFETY LIMITING RING



SEE NOTE

SEE NOTE

AREA TO BE MAGNAFLUXED FOR CRACKS

SEE NOTE

SEE NOTE

DETAIL



NOTE:

IF CRACK IS
NOTED IN THIS
AREA, CENTER HUB
SHOULD BE REPLACED

FR-713 CENTER HUB (REF)-ROUND-UP
RD-35 CENTER HUB - PARATROOPER

MAN-CO. MFG. INC.

P.O. BOX 12614
SALES, OH 47306

DRAWN BY:

SWJ

DATE:

9-1-88

SCALE:

NONE

CENTER HUB - INSPECTION OF WELDS

ROUND-UP & PARATROOPER



MAN-CO MFG., INC.

2725 19th Street S.E. • P.O. Box 13114 • Salem, OR 97309 U.S.A. • (503) 362-2341

BULLETIN: BU-138-MC
DATE: 9/1/89
ATTENTION: ALL ROUND-UP, PARATROOPER, AND FIREBALL OWNERS

SHAFTS AND SPINDLE REPLACEMENT

It has been brought to our attention that there have been recent failures of the shafts and spindles of the above mentioned rides that were manufactured by Frank Hrubetz Co. and Kilinski Manufacturing Company (KMC). For various reasons, these failures have only occurred in those rides that have the shafts and spindles welded directly into the boom. Newer rides and replacement shafts and spindles that have used shrink collars for installation (therefore no direct welding to the shaft) have not experienced these failures and with proper maintenance and regular testing should provide years of safe operation.

However, due to these failures, Man-Co Manufacturing, Inc. recommends that the following steps should be taken.

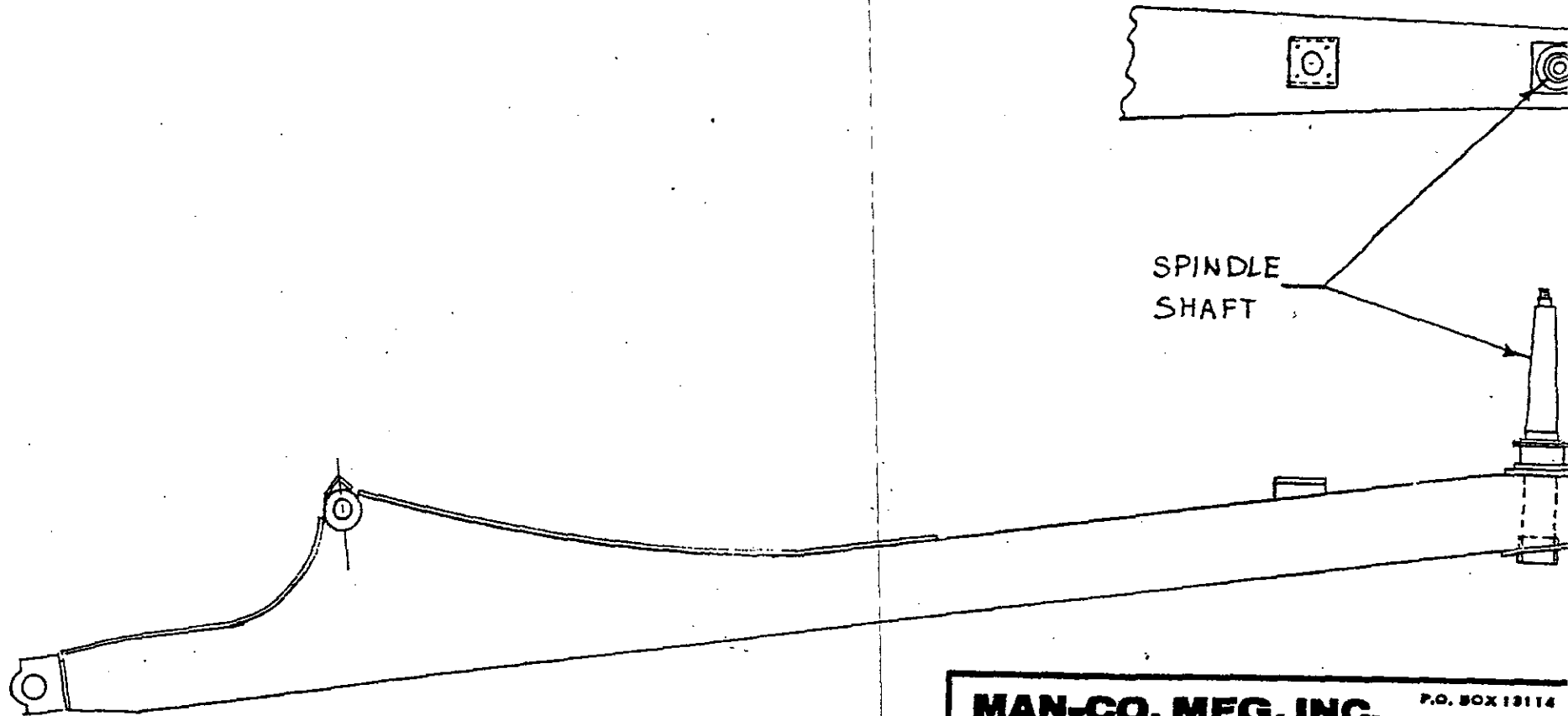
- 1) Inspect your ride and determine if the shafts and/or spindles are welded in directly, or if shrink collars are used. (See Drawings BU-138-A through F for information on how to determine the installation method used on your ride.)
- 2) If shrink collars are used on your ride, there is no need for replacement. Please note: All shafts and spindles still need to be tested annually according to the procedures outlined in BU-135-MC (QC-UI-1 - Rev. 3).
- 3) If the shafts and/or spindles on your ride are welded directly to the boom, then replacement is needed.

Due to the time element involved to manufacture and install these shafts and spindles, we recommend that a time period of one year be allowed to make these replacements. However, if your ride is a 1970 model or older, we recommend the replacements be installed as soon as feasibly possible.

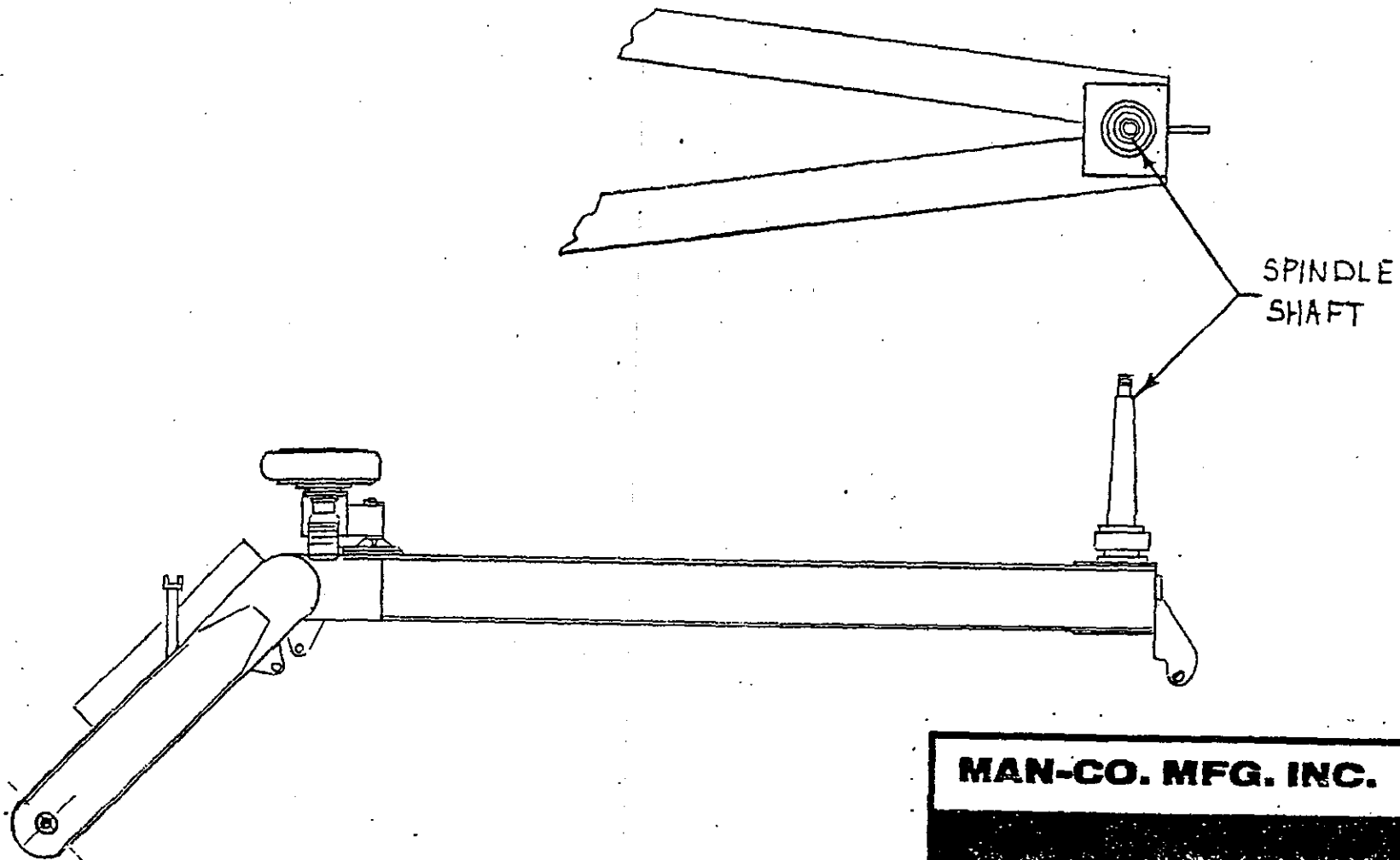
Man-Co Manufacturing, Inc. is not related to or a successor of Frank Hrubetz Co., or Kilinski Manufacturing, Inc. and can recommend but not mandate that these procedures be adhered to. However, we feel that this is a most important step for the protection of the ride owners and the safety of their customers.

Hurricane • Paratrooper • Super Slide • Tip Top • Round Up • Rip-Tide

MAN-CO Builds Thrills!



| | | |
|--------------------------|---------------|-----------------------------------|
| MAN-CO. MFG. INC. | | P.O. BOX 13114 SALEM, OR 97301 |
| SCALE: NONE | DATE: 3-14-89 | DRAWN BY: SWJ |
| SPINDLE SHAFT ON BOOM | | HYD. PART |
| | | SK 3148 |



MAN-CO. MFG. INC.

P.O. BOX 13114
SALEM, OR 97309

SCALE:

NONE

DATE:

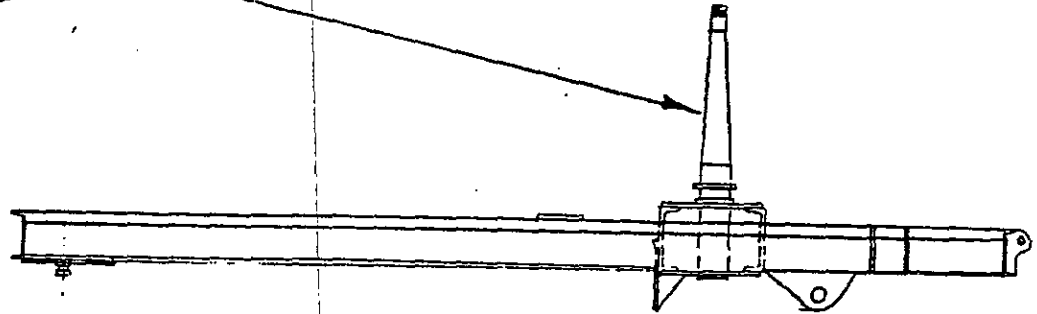
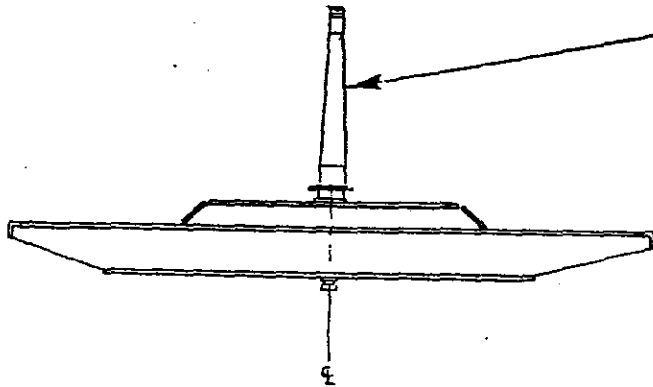
3-14-89

DRAWN BY

SWJ

RIM DRIVE PARA 30

SPINDLE
SHAFT



MAN-CO. MFG. INC.

P.O. BOX 13114
SALEM, OR 97309

TOLERANCES: UNLESS NOTED

DRAWN BY. SWJ

DECIMALS

FRACTIONS

ANGLES

DATE 3-14-89

X ± .018

Y ± .010

Z ± .008

SCALE NONE

FIREBALL SPINDLE SHAFT

NEXT APPROPRIATE

REVISION

DRAWING NO.

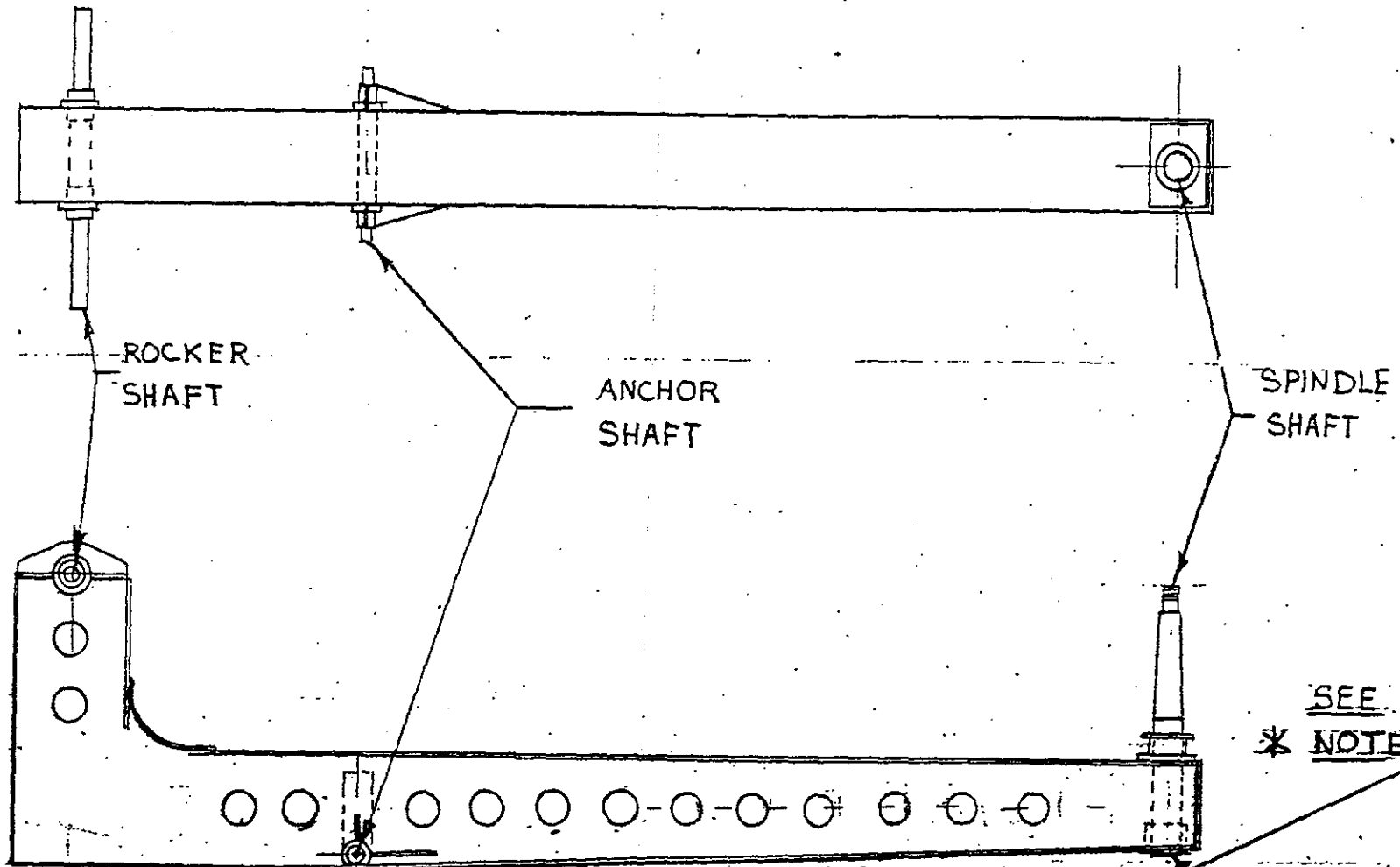
SK-314092

A

QC-UI-I-Rev. 3
Page 19 of 19

| REV. | DATE | DESCRIPTION |
|-----------|------|-------------|
| REVISIONS | | |

*NOTE: IF NO SHRINK COLLAR IS VISIBLE AT BOTTOM OF BOOM, THEN REPLACEMENT OF SPINDLE SHAFT IS NEEDED.



MAN-CO. MFG. INC. P.O. BOX 12114
SALEM, OR 97304

SCALE: NONE DATE: 8-31-89 DRAWN BY: SWJ

30' FOLDING ROUND-UP ANCHOR SHAFT

| | | | |
|--|--------------------------|------------------|------------|
| | DARTRON INDUSTRIES, INC. | Bulletin # | BU0201PR01 |
| | P.O. Box 13114 | Release Date: | 01/15/2002 |
| | Salem, Oregon 97309 | Effective Date: | 01/15/2002 |
| | Phone: 503-362-2341 | Supersedes: | |
| | Fax: 503-362-2536 | Completion Date: | N/A |
| | | Page | 1 of 1 |

SERVICE BULLETIN

| | | | |
|---------------------------|---------------------------------|-----------------------------------|-----|
| Ride Manufacturer: | Man-Co Mfg. | Affected Production Dates: | All |
| | Kilinski Mfg. Frank Hrubetz Co. | | |
| Ride Name | Round-Up, Paratrooper | Affected Serial #'s: | All |
| Model Number: | All | | |

Summary Of Issue: Man-Co Mfg. issued bulletin BU-136 MC on September 8, 1988 concerning the annual inspection procedures required on all hubs for Paratroopers and Round-Ups manufactured by Man-Co Mfg., Kilinski Mfg. and Frank Hrubetz Co. Dartron has designed a hub for Paratroopers and Round-Ups which addresses the areas of concern on the above hubs. The areas of concern are the welds between a sleeve that was installed over the top of the hub center. Dartrons design eliminates the sleeve and replaces the main pipe with a tube that has a wall that is thicker than the main pipe and sleeve combined. This design eliminates the suspect sleeve and welds. The Dartron hub has been in service for over ten years without any problems reported or observed. Recall Bulletin BU-136 MC mentioned above pertains only to hubs manufactured by Man-Co, Kilinski and Hrubetz. It is not valid for Round-Ups and Paratrooper hubs manufactured by Dartron.

Reason For Release:

It has come to the attention of Dartron Industries that unnecessary inspections are being performed on new Paratrooper and Round-Up hubs. Dartrons position on this matter is that Round-Up and Paratrooper hubs manufactured by Dartron, do not require an annual NDT inspection.

Action to be taken:

To determine whether a Round-Up or Paratrooper hub was manufactured by Dartron conduct a visual inspection. If the hub is on a Paratrooper and is a "split type" it does not require the NDT inspection. A "split" type hub allows all sweeps to be rotated to the rear of the trailer for transport. If it is not a "split" type hub inspect for the sleeve as shown below.

Detail of issue:

Below is the sketch indicating the difference between the old style hub and the Dartron hub.

