

# MaxFlight

C O R P O R A T I O N

MaxFlight Corporation  
750 Airport Road  
Lakewood, NJ 08701-8507 USA

1 (732) 842-8898  
fax: 1 (732) 842-1114  
www.maxflight.com

## SERVICE BULLETIN

To  
Fax  
Company  
Subject: MaxFlight Safety Service Bulletin 2008-001  
Sent: 4/13/08 at 8:30:00 PM

From: Rich Mascolo  
Fax: +1 (732) 842-1114  
Voice: +1 (732) 842-9898 235  
Pages: 1 (including cover)

### MESSAGE

Units Affected: All MaxFlight Simulators [VR2000, VR2002, VR2500 and MT3000]

Purpose: To ensure security of both Pitch and Roll Encoders

Action/Requirement: URGENT - SAFETY Bulletin

Instructions to comply with this SAFETY Bulletin:

- Locate the two set screws on the pitch encoder collar, remove and re-install using Blue Loc-Tite and ensure that the screws are tightened firmly.
- Locate the one set screw on the roll motor encoder shaft collar, remove and re-install using Blue Loc-Tite and ensure that the screw is tightened firmly.

We have made it a weekly requirement to inspect both encoders for security and set screws for tightness. Please add this requirement to your present weekly inspection.

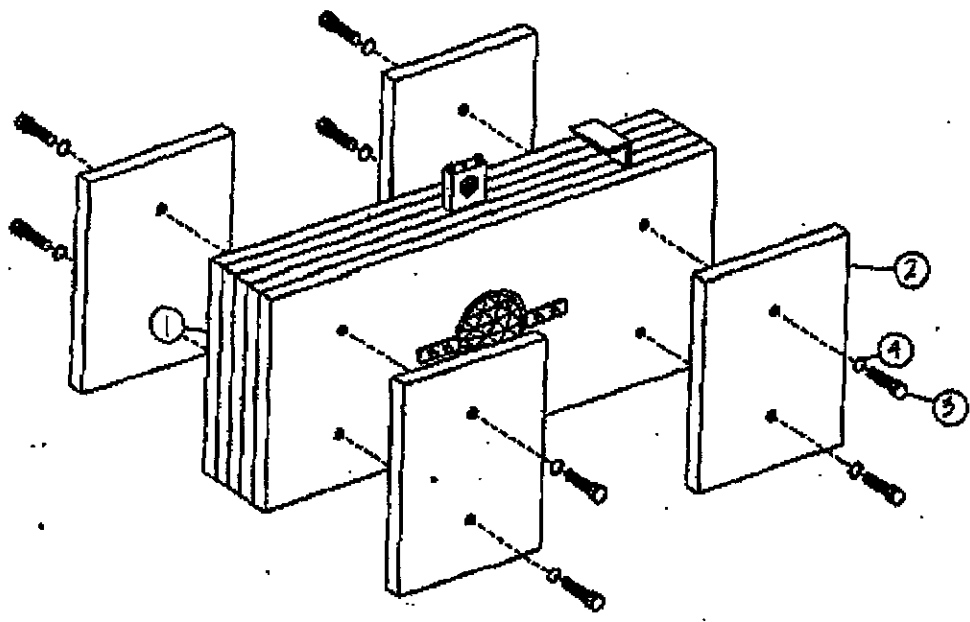
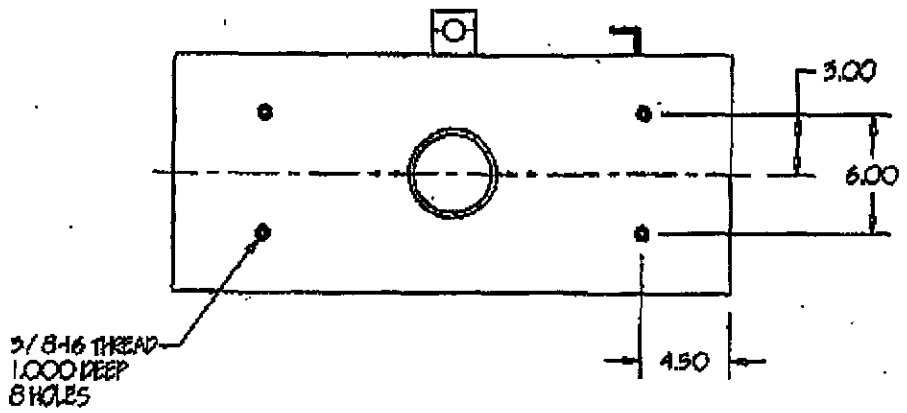
### IMPORTANT!

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Signature (confirming receipt)

URGENT

Revision			
Rev. #	Description	Date	App.
002	Redesign	2-16-00	



NOTES:  
1. BREAK ALL SHARP EDGES.  
2. SIZES ARE IN INCHES.

ITEM	QTY.	DESCRIPTION (PART NO.)
4	8	110070 3/8" Lock Washer
5	8	10550 3/8-16 x 2" A5C Bolt
2	4	AP-012 Carterweight Add On Plate
		519-003 VR2002 Carterweight Assembly

PARTS LIST

Title: Carterweight Add On Plate Assembly

Max Flight Corp.  
750 Airport Road  
(732) 942-9998  
FAX (732) 942-1114  
Lakewood, N.J. 08701

P/N: 519-003 A	Draw: 519-003 A
Scale: None	Drawn By: RPJ
Mail:	Date: 12-08-99

Prepared By: [Signature] Date: 2/15/00

# MaxFlight<sup>®</sup>

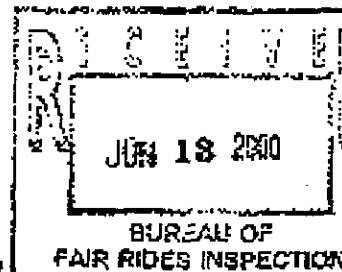
C O R P O R A T I O N

MaxFlight Corporation  
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Lakewood, NJ 08701-5907 USA

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## SERVICE BULLETIN

To	Mike Rinehart (Business Fax)	From	Rich Mascolo
Fax	18504889023	Fax	
Company	Florida Bureau of Fair Rides/Dept of Agric	Voice	
Subject	MaxFlight Service Bulletin 2000-06-2	Pages	1 (including cover)
Sent	6/13/00 at 8:09:14 AM		



MESSAGE:

**Affected Units: All MaxFlight Hydraulic Simulators**

**Affected Item: Power Distribution Box Rev M through Rev T/K5 and K6 Relays**

**Purpose:** This bulletin is to inform you of a new relay manufactured by Seimens for use in the counterweight system. This new relay is to be used in the K5 and K6 relay sockets and should be replaced as soon as possible. This will prevent a majority of the counterweight problems you have experienced, ie; counterweight moving to the rear, unit not counterweighing, etc.

The new relay, manufactured by Seimens, is part number KDP-11D15-24, they can be purchased locally through Grainger and Newark Electronics or try at your local electronic shop, we do not have any on-hand at present.

**Note:** If your unit does not have Seimens relays that are installed in sockets, it is not affected by this bulletin.

## IMPORTANT!

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Signature (confirming receipt)

00-23

# MaxFlight<sup>®</sup>

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MaxFlight Corporation  
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Lakewood, NJ 08701-5907 USA

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## SERVICE BULLETIN

To	Mike Rinehart (Business Fax)	From	Kurt Blatt
Fax	18504889023	Fax	732-942-1114
Company	Florida Bureau of Fair Rides/Dept of Agric	Voice	732-942-9898
Subject	Service Bulletin 2007		
Sent	9/1/2000 at 4:46:02 PM	Pages	1 (including cover)

MESSAGE:

Service Bulletin # 2007

Date: August 31, 2000

To all MaxFlight Operators

Affected Units: All Machines equipped with Hydraulic Restraints.

Affected Item: Hydraulic Actuator rod end.

If your machine is equipped with Hydraulic Restraints ether as original equipment or as an in field upgrade.

1. Check that the upper rod end is secured with Blue Loctite
2. If not secure it using Blue Loctite
3. Add to your daily checklist to inspect that the rod ends are secured to the rod. This is an easy inspection. Any visible thread will indicate that the end is not staying secure and will require immediate attention.

Note: DO NOT use pliers on the rod. Damage to the rod will cause the seal to fail and allowing oil to escape the closed system.

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**URGENT**

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03-16

# MaxFlight

C O R P O R A T I O N

MaxFlight Corporation  
1 Executive Drive  
Toms River, NJ 08755-4947 USA

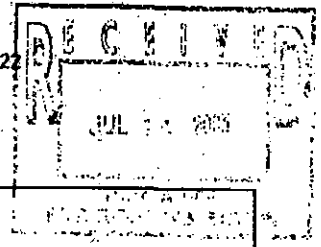
+1 (732) 281-2007  
fax +1 (732) 281-2009  
www.maxflight.com

03-16  
173

## SERVICE BULLETIN

To: Michael Rinehart  
Fax: 18504889023  
Company: Florida Bureau of Fair Rides Inspection  
Subject: MaxFlight Service Bulletin  
Sent: 7/14/2003 at 2:46:42 PM

From: Svetlana Gruzinova  
Fax: +1 (732) 281-2009  
Voice: +1 (732) 281-2007 222  
Pages: 2 (Including cover)



MESSAGE:

Service Bulletin: 07142003

Subject: Duck Bill Release Failure on Shoulder Restraint/Release Piston Rod End Assembly.

To: All owners/users of MaxFlight Virtual Reality Machines both Hydraulic and Electric. Any/all models.

It has come to our attention that the earlier version of the shoulder harness release mechanism, the duck bill release bracket, is failing due to threads being pulled out of the top bracket. This will allow the shoulder restraint lock mechanism and shoulder restraint to swing free. The shoulder restraint is the secondary restraint system, the lap belt is the primary system.

Researching the failures it was found, that the earlier versions of the brackets received from manufacturer, were manufactured with lighter material (0.0625" thickness). This allowed the threads to be pulled out when stress is applied.

The repair is the replacement of old style duck bill brackets and add a second jam nut to the piston rod end, securing both the rod and bracket solidly. The new brackets from the manufacturer are now 0.098" thick versus 0.0625". This will stiffen the bracket. Also, it is our recommendation to use two 3/8" X 24 nuts, one on top and one below the duck bill bracket as per attached drawing.

All users are to inspect their release systems. If you have the old style repair same with new type by contacting MaxFlight, Technical Support at 1-732-281-2007 ext 222 to order replacements. Purchase orders can be sent to 1-732-281-2009, attn. Lana.

## IMPORTANT!

Please CONFIRM RECEIPT of this Service Bulletin by faxing this cover page with your signature to MaxFlight Corporation at +1 (732) 281-2009 within 2 days.

URGENT



**MaxFlight Corporation**  
750 Airport Road  
Lakewood, New Jersey 08701-5907  
USA

---

# service bulletin

maxflight corporation

**To:** John Jusko (Business Fax)  
**Fax Number:** John Jusko@+1 (850) 383-0791

**From:** Rich Mascolo  
**Fax Number:** +1 (732) 942-1114  
**Business Phone:** +1 (732) 942-9898 x235

**Pages:** 4  
**Date/Time:** 4/27/99 3:50:49 PM  
**Subject:** Bios Settings Change and Power Distribution Box Upgrade

---

The following procedures for Bios Changes should be followed if you are experiencing computer lock-ups:  
When the unit raises, the mouse freezes.  
Also, there is a change to the K5 and K6 Relays that will prevent the inadvertent lockup of those relays, make sure you change the settings page as per the instructions or your unit will not counterweight.  
Thank You  
Rich

## **IMPORTANT!**

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Signature (confirming receipt)

## **PROCEDURE TO MODIFY BIOS SETTINGS ON "I-WILL" MOTHERBOARDS with "AWARD BIOS" SETTINGS PAGES.**

Turn on Computer and Monitor and allow boot-up sequence to start. While the first screen of the boot-up sequence is being displayed (it will be displayed for approximately 8 to 10 seconds) depress the DEL (delete) key on the keyboard. This will allow you to enter the Main Page of the BIOS, and a blue screen with the words "ROM PCI/ISA BIOS" on the top will be displayed on the monitor screen. There will be 13 areas or pages that can be entered and changed or configured.

**IMPORTANT NOTE: DO NOT CHANGE ANY SETTINGS IN THESE BIOS SETTINGS PAGES OTHER THAN THE ONES WE ARE ASKING YOU TO CHECK IN THIS PROCEDURE. IF YOU DO, YOU CAN SERIOUSLY HAMPER YOUR COMPUTERS ABILITY TO BOOT-UP OR EVEN WORK PROPERLY!**


The first settings page will be highlighted with a red bar or cursor, and will say "STANDARD CMOS SET UP" You want to move the red bar or cursor down to the page that says, "POWER MANAGEMENT SET UP." You do this by using the UP/DOWN arrow keys located on the bottom right side of the keyboard, next to the numeric keypad. To enter this page depress the ENTER key and the red cursor will be highlighting the "POWER MANAGEMENT" options on the top left of the page. The setting should read "DISABLED." If it is not, cycle through the settings by using the PAGE UP/PAGE DOWN keys located on the keyboard, directly above the arrow keys, and change it to read "DISABLED." Now press the ESC (escape) key located on the top left of the keyboard to return to the main BIOS page.

Again using the DOWN ARROW key, move the red cursor to the "INTEGRATED PERIPHERALS" settings page and depress the ENTER key. Move the red cursor bar to bottom left setting, which is "PARALLEL PORT MODE." It should be set to "SPP" which is standard parallel port mode. If it's not, change it to read "SPP" by using the PAGE UP/PAGE DOWN keys to cycle through the available settings. When you are done, again depress the ESC key to return to the main settings page.

Using the right and down ARROW keys, move the red cursor bar to highlight the "SAVE & EXIT SET UP" page, and then depress the ENTER key. A red window will open saying "SAVE TO CMOS and EXIT (Y/N)? Depress the "Y" key on the keyboard to indicate yes, and depress the ENTER key again to save the new settings. The computer will now reboot and start Windows NT 4.0.

You must also check to see if your computer has a driver file program called "Adaptec EZ-SCSI 4.0" To do this, use the mouse to open the "START" window on the bottom left of the screen, then highlight the "PROGRAMS" Icon and you should see this file displayed in this window. If it is not displayed there, it has not been installed and you should contact MaxFlight Technical Services, and we let you know what to do.



Changed 5-1-99 

## **PROCEDURE TO MODIFY BIOS SETTINGS ON "INTEL" MOTHERBOARDS with "PHENOIX BIOS" SETTINGS PAGES.**

Turn on Computer and Monitor and allow boot-up sequence to start. While the first screen of the boot-up sequence is being displayed (it will be displayed for approximately 5 to 7 seconds) depress the F2 key on the keyboard. This will allow you to enter the Main Page of the BIOS, and a screen with the words "BIOS SETUP UTILITY" on the top will be displayed on the monitor screen. There will be 6 areas or pages that can be entered and changed or configured. You will be checking 2 of these pages, the "ADVANCED" and the "POWER" pages.

**IMPORTANT NOTE: DO NOT CHANGE ANY SETTINGS IN THESE BIOS SETTINGS PAGES OTHER THAN THE ONES WE ARE ASKING YOU TO CHECK IN THIS PROCEDURE. IF YOU DO, YOU CAN SERIOUSLY HAMPER YOUR COMPUTERS ABILITY TO BOOT-UP OR EVEN WORK PROPERLY!**

With the main setting page displayed, use the RIGHT ARROW key to move to the "ADVANCED" settings page and then use the DOWN ARROW key to move to the "PERIPHERAL CONFIGURATION" settings. Depress the ENTER key and move the highlighted cursor down to the "PARALLEL PORT" settings, which should read "ENABLED." If it doesn't, use the - (minus) key to cycle through the settings until "ENABLED" is displayed. The "MODE" should be set to "BI-DIRECTIONAL" if it isn't, again use the - (minus) key to change it. When you are done, depress the ESC (escape) key to return to the main settings page.

Again use the RIGHT ARROW key to move the cursor to the "POWER" settings across the top of the main settings page, and depress the ENTER key. The "POWER MANAGEMENT" page will be displayed and should read "DISABLED." If it is not, use the - (minus) key to change it to "DISABLED."

At this point you must save any settings that you have changed by depressing the F10 key on the keyboard. A small window will open up asking if you want to "SAVE CONFIGURATION CHANGES and EXIT NOW?" Highlight the "YES" setting and then depress the ENTER key. This will save any changes you have made and the computer will begin to reboot.

# **MaxFlight**

C O R P O R A T I O N

**MEMO**

**To: All VR2002 Cyber Roller Coaster  
Users/Operators/Owners**

**Subject: Seats**

The passenger seats we presently use have 6 mount holes in them, some of you already experienced problems with the seats being torn from the front two holes.

We recommend you remove both seats and drill the two other holes so as you can mount the seats utilizing all six mounting holes in the seats, this will prevent further problems with seats. The seats are mounted with 3/8 - 16 x 1 inch bolts, you should be able to find these locally and prevent any further problems.

**Richard J. Mascolo  
Technical Support Manager**

~~MaxFlight F.~~  
RIDE: YR 2002  
MANJ.: MAX FLIGHT  
Non-Kioa'e

MaxFlight Corporation  
750 Airport Road  
Lakewood, New Jersey 08701-5907  
USA

# service bulletin

maxflight corporation

To: Ken Almeida (Business Fax)  
Fax Number: Diane Rehn@+1 (561) 347-7358

From: Rich Mascolo  
Fax Number: +1 (732) 942-1114  
Business Phone: +1 (732) 942-9898 x235

Pages: 2  
Date/Time: 6/28/99 4:44:02 PM  
Subject: Cyber Roller Coaster Seat Mounts/Equipment Service

To: All MaxFlight Equipment Owners/Operators  
It is very important that you take note of the following information:  
If anyone comes into your location and represents themselves as a MaxFlight Technician and attempts to service your unit(s), unless you have initiated the call for service, please call me. All of your operators should be made aware of this request. Please circulate this to all persons responsible in thi regard.  
I would ask you to handle any telephone inquiries in the some fashion.  
Thank you for your assistance in this matter, your cooperation is truly appreciated.

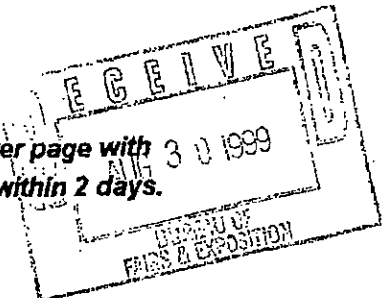
Sincerely,

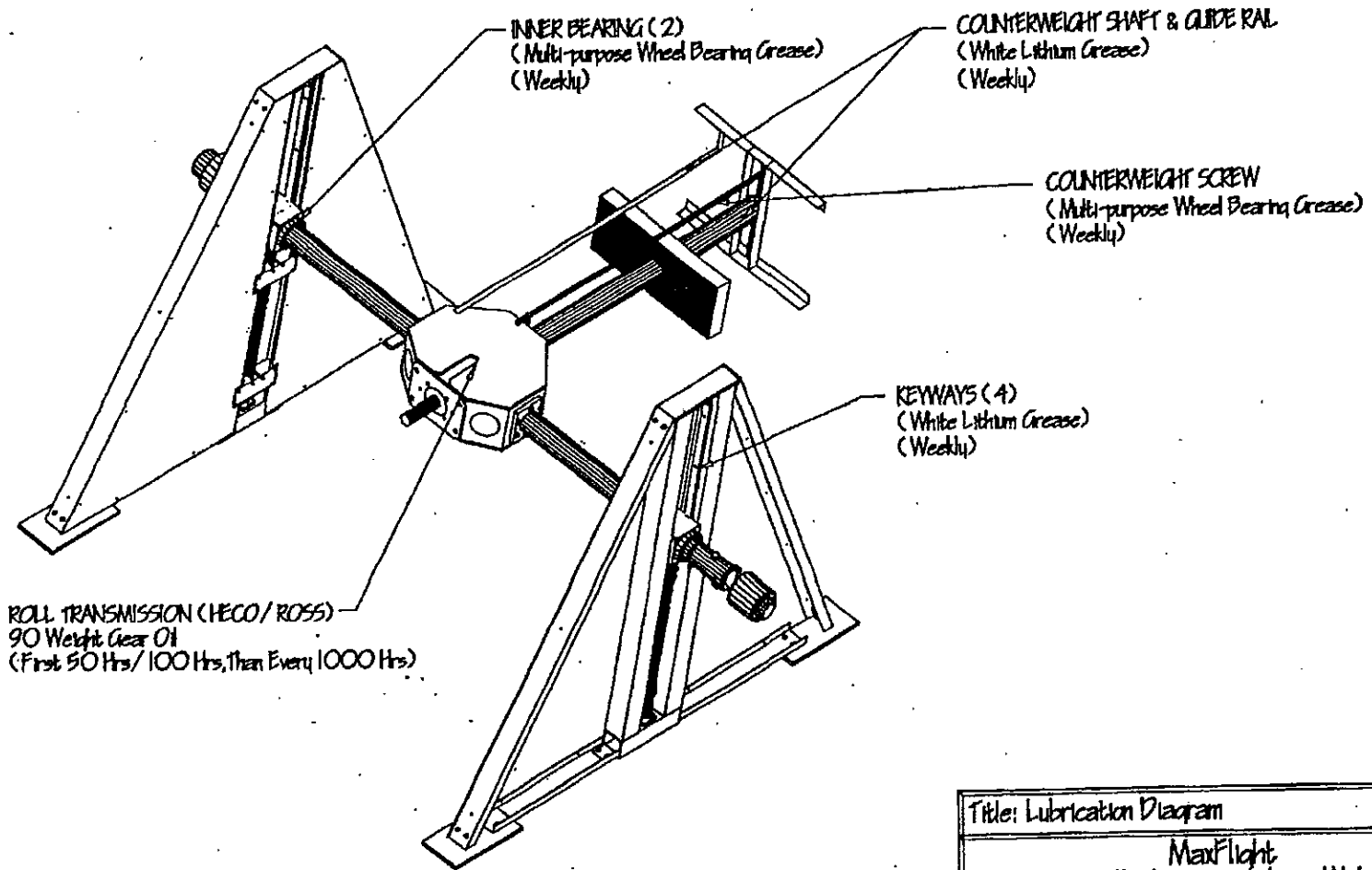
Richard J. Mascolo  
Technical Support Manager

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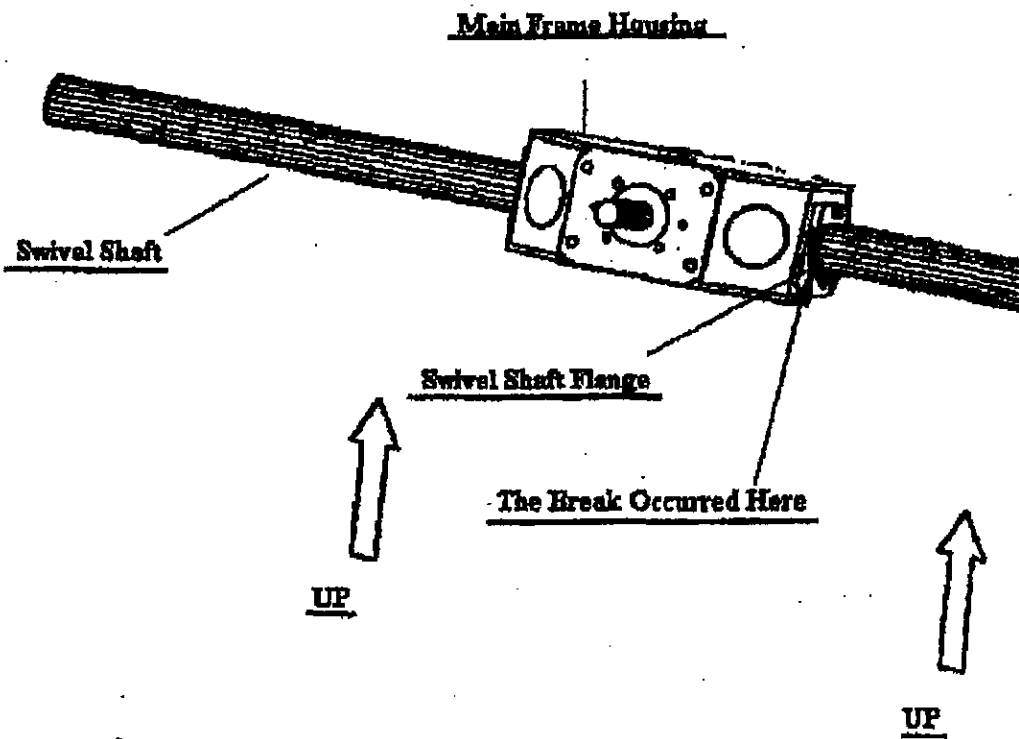
  
Signature (confirming receipt)





Title: Lubrication Diagram	
<b>MaxFlight</b> 750 Airport Road (752) 942-9898 Lakewood, N.J. 08701 Fax: (752) 942-1114	
P.N.	Draw: LUB_1
Scale: None	Drawn By: R.P.J.
Matt:	Date: 02-12-99
Approved:	Date:

Remove Counter weight  
Cover From Rear



**SEAT FRAME REMOVED FOR CLARITY**

*MaxFlight Corporation*  
750 Airport Road ? Lakewood, NJ 08701  
Phone: (732) 942-9898 Fax: (732) 942-1114

### VR2002 Weekly Inspection Checklist

Week Ending:

Inspected By (print):

Signature:

\* These sheets must be filled out completely, kept in your records and faxed to MaxFlight (Attn: Tech. Support) on a weekly basis.

- Inspect the Roll ERC (Electrical Rotary Contact) and pins for proper security and condition
- Clean the projector fans and lens (**DO NOT USE LIQUID CLEANER**)
- Inspect all connections on the Power Distribution Box for security.
- Inspect the Pitch ERC and Torque Arm for proper security and condition
- Inspect the counterweight shaft, worm gear and guide rail for any apparent wear, damage, or binding
- Inspect left and right key-way bolts (both A-Frames) for security
- Inspect the Up/Down, Canopy and Failsafe Sensors for security and proper operation
- Inspect the A-Frames for signs of "walking" if unit is not secured to floor
- Inspect Harnesses for any weld cracks
- Inspect safety-wired and visible bolts for security
- Ensure the Daily AM and PM inspections have been complied with for the past week (See Operators Manual)
- Lubricate the unit in accordance with the Lubrication Diagram (page 27 of Technical Manual)
- Inspect the Flange welds of the Right/Left Pitch Shafts and Counterweight Shaft at the center weldment to insure there are no cracks, also inspect the safetywire and bolts for security.

#### GAME LOG READING

Normal:

Hours:

- Annotate any discrepancies from previous week and corrective actions

Subject: MaxFlight VR2002 Simulator  
Date: Mon., 29 Nov 1999 14:38:20 -0500  
From: Michael Rinehart <rineham@doacs.state.fl.us>  
To: Ron Brooks <brooks@doacs.state.fl.us>, Randy Fleck <fleckr@doacs.state.fl.us>, Richard McDonald <mcdonam@doacs.state.fl.us>, Jerry Callahan <callahj@doacs.state.fl.us>, Cliff Groscuth <groscuc@doacs.state.fl.us>, Brad Mosher <mosherb@doacs.state.fl.us>, Larry Cook <cookl@doacs.state.fl.us>, Allan Harrison <harrisa@doacs.state.fl.us>, Timothy Simpson <simpsot@doacs.state.fl.us>, Carlos Corvo <corvoe@doacs.state.fl.us>, Moe Hayes <hayesm@doacs.state.fl.us>, Gary Fisher <fisherg@doacs.state.fl.us>, Hunter Lyles <lylesh@doacs.state.fl.us>, Jerry Winters <winterj@doacs.state.fl.us>, Charlie Stegall <stegalc@doacs.state.fl.us>

Last week Ron Brooks found cracks at the swivel shaft flanges on two VR2002 simulators belonging to Regal Cinema. The crack locations were the same as the one found last August on the Denver simulator which gave rise to our inspecting ALL MaxFlight VR2002s in Florida.

On November 10, 1999, prior to Ron finding the cracks, MaxFlight sent out a memo to all owners/operators stating "You will be receiving a package from MaxFlight with Pitch Shaft Plugs, ... install these pitch shft (sic) plugs as soon as possible, it is very important to comply with this service bulletin." Furthermore MaxFlight required the owners/operators to sign and fax back that they had received the plugs and installed them.

Mr. Rich Mascolo with MaxFlight faxed me after we advised him of Ron's findings and advised "the plugs are to prevent any major catastrofy (sic), they have been sent to most sites, a few have not received yet. We are in the process of shipping them out and hopefully by the end of the year everyone will be installed."

The MaxFlight simulators, according to Mr. Mascolo all receive heavy usage, considered to be 19-24 thousand cycles. The Denver VR2002 failed after 22,000 cycles.

Just a reminder, if you inspect any MaxFlight VR2002 simulators please:

1. Check the swivel shaft welds carefully for cracks and, as you know,
2. remove paint to assure yourself you're not looking at a paint crack.
3. Check owner/operator records to determine if the "Pitch Shaft Plug" has been installed.

If you have any questions regarding this bulletin please don't hesitate to give me a call. I am sending a hard copy for your records.

Mike Rinehart.

99-17 MAXFlight VR2002 COPIES

**Mike Triplett**

**From:** Richard Osworth <rosworth@dca.state.nj.us>  
**To:** Michael Triplett <mtriplett@dca.state.nj.us>  
**Sent:** Friday, July 07, 2000 9:31 AM  
**Attach:** nsmail7E.TMP  
**Subject:** Fw: [Fwd: MaxFlight counterweight add on plate assembly]

----- Original Message -----

**From:** Michael W Rinehart <rineham@doacs.state.fl.us>  
**To:** Isadore Rommes <rommesi@doacs.state.fl.us>; Carl Dills  
 <carl.dills@kyagr.com>  
**Sent:** Tuesday, June 06, 2000 9:19 AM  
**Subject:** [Fwd: MaxFlight counterweight add on plate assembly]

> The following are three memos regarding the addition of counter weights  
 > to one of the Florida MaxFlight VR2002 simulators. I have not attached  
 > the diagram. If you would like a .bmp or .jpg or a faxed copy please  
 > let me know. Also include your fax number, and mention it is for the  
 > MaxFlight Counter weight diagram, via email if that's how you'd like it  
 > sent.

> Mike Rinehart

>

> 6/2/00 #1

> To Mike:

> From: Jerry W.

> The attachment is of a Counterweight add on plate assembly for the  
 > MaxFlight VR 2002 (all VR 2000 series). While inspecting a VR20002 at  
 > Funscape in Ft. Lauderdale I found the above modification was  
 > attempted. Funscape had only attached two counterweight add on plates  
 > and they were only attached with one screw for each plate. I spoke with  
 > a tech from MaxFlight and was told that all four counterweigh add on  
 > plates had to be installed at per the attached drawing ie. two bolts  
 > with lock washer for each plate. It seems that Funscape, while trying to  
 > remove the old bolts, broke the bolts off and did not finish removing  
 > them. They replaced the bolts with the new ones where they could.

> This ride was red tagged for the following reasons, 1) Pitch encoder  
 > was not working. 2) Counterweight shaft retention system had not been  
 > installed. 2) Counterweight add on plate assembly was not installed  
 > correctly.

> By the way the mechanic that was responsible for the maintenance of this  
 > ride was fired due to poor job performance.

>

> 6/2/00 #2

> From Mike:

> To Rich, (MaxFlight)

> "Do you have any more information you can share about the above?"

> Thanks, Mike Rinehart"

>

> 6/2/00 #3

> To Mike,

> From Rich (MaxFlight)

> "The only info we put out on this was for the modification of the new  
 > seat frame and Roll Hub retention device, we added some weight to the



- > front of the unit, so we compensated with adding four 30 lb plates to
- > the rear of the unit on the counterweight itself. There was no bulletin
- > submitted on this, it was a part of the retrofit when installing a new
- > seat frame. The procedure was to install 2 plates on either side of the
- > weight using 2- 3/8-16 x 1 1/2 bolts on each plate, the plate is
- > pre-drilled for the bolts.
- > Rich"

- >
- >
- >
- >
- >
- >

**Mike Triplett**

---

**From:** Michael W Rinehart <rineham@doacs.state.fl.us>  
**To:** Ron Brooks <brooks@doacs.state.fl.us>; Randy Fleck <flecker@doacs.state.fl.us>; Jerry Callahan <callahj@doacs.state.fl.us>; Cliff Groscurth <groscuc@doacs.state.fl.us>; Brad Mosher <mosherb@doacs.state.fl.us>; Allan Harrison <harrisa@doacs.state.fl.us>; Timothy Simpson <simpsot@doacs.state.fl.us>; Carlos Corvo <corvoc@doacs.state.fl.us>; Gary Fisher <fisherg@doacs.state.fl.us>; Hunter Lyles <lylesh@doacs.state.fl.us>; Jerry Winters <winterj@doacs.state.fl.us>; Charlie Stegall <stegalc@doacs.state.fl.us>; Larry Cook <cookl@doacs.state.fl.us>; Keith Garner <garnerk@doacs.state.fl.us>; Roland Guay <guayr@doacs.state.fl.us>; <support@maxflight.com>  
**Sent:** Wednesday, May 09, 2001 10:20 AM  
**Subject:** Advisory MaxFlight VR2002

Ron Brooks advises that he found a Max Flight VR2002 (Boomers-Fest. Fun Park, Boca) that had cracks in the exact same spot they were before the two fixes were installed last year, at the swival shaft and swival shaft flange attachment to the main frame housing. Both the plate and plug had been installed and were in place on Boomer's ride.

Please be aware of this when/if you inspect any of these rides and continue having the pitch shaft covers removed for proper inspection.

I am copying Max Flight with this memo requesting that we be advised of any additional requirements they may have if this becomes another recurring problem.

Mike Rinehart  
Florida Bureau of Fair Rides Inspection  
(850) 922-2330

# **MaxFlight**

C O R P O R A T I O N

Jacob Aveerbech

2/22/00

MaxFlight Safety Service Bulletin and Instructions 2000-01

Counterweight Shaft Retention System

Affected Units: All VR2002 Roller Coasters/MT3000 Monster Trucks/VR2500 Cyber Sleds

Following Parts are shipped in kit form:

- A2-043-Counterweight Shaft Splice
- A2-044-Shaft Splice Flange
- A2-046-Threaded Retention Rod
- 11589A-5/8-18 x 2 1/2 Bolt with wire tie hole
- 11493- 5/8-18 Jam Nut
- 10074- 1/2" Lock Washer
- 10091- 1/2"-13 nut

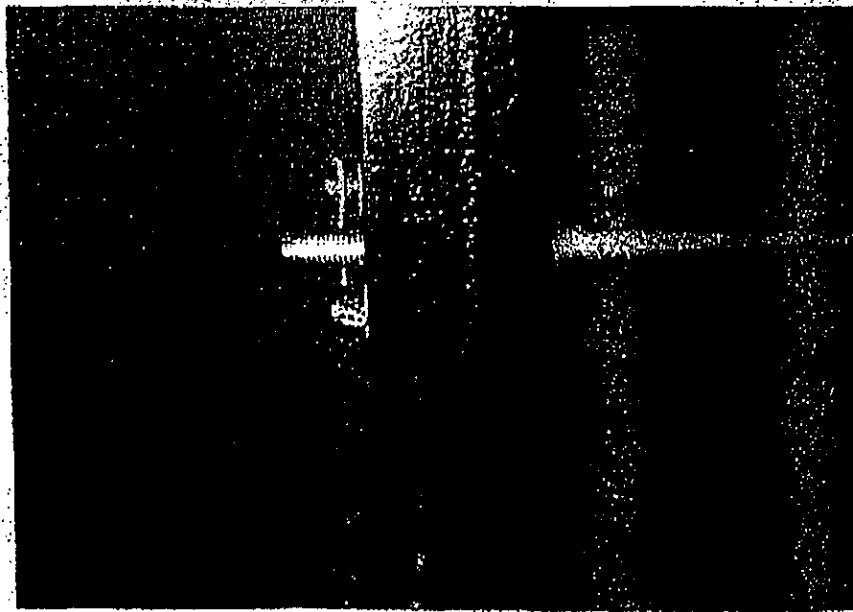
Tools Required:

- Drill
- 13/64 Drill Bit
- 27/64 Drill Bit
- 17/32 Drill Bit
- 1/2"-13 Tap
- 3/4" Open End Wrench
- Wire Cutters
- 18 Gage Safetywire

Upon completion of this Safety Modification, please notify MaxFlight Technical Support either by Fax at 732-942-1114 or e-mail to [rmascolo@maxflight.com](mailto:rmascolo@maxflight.com). Thank you.

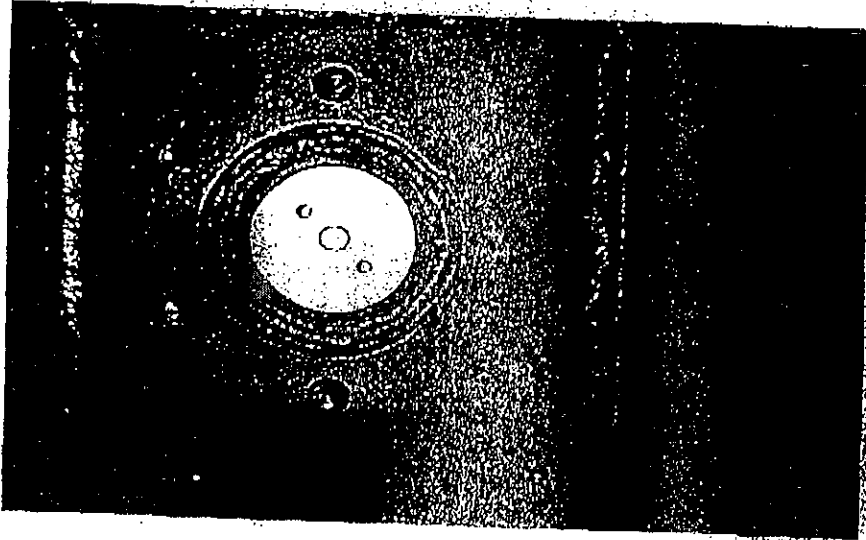
Counterweight Shaft Safety Plug Installation

1. Remove Tailboom Cover, then return unit to lowered position.
2. Turn off all power.
3. Remove Roll Encoder in center crossblock.
4. Cut safety wire on  $\frac{1}{2}$ " Allen Head bolts on the Tail Support (H-frame on end of counterweight shaft).
5. Remove H-frame.
6. Find and mark center point between the Allen Head bolts.
7. Use a  $\frac{13}{64}$ " bit to drill a pilot hole through this center point. Drill completely through the end of the counterweight shaft. This end is approximately 5" in thickness.
8. Use a  $\frac{27}{64}$ " drill bit to drill through the same hole at the end of this shaft.
9. Use a  $\frac{17}{32}$ " drill bit and drill through the H-Frame ONLY. This will provide clearance for the tap and threaded rod.
10. Use a  $\frac{1}{4}$ "-13 tap and thread the end of the Counterweight Shaft.
11. Install the threaded rod through the counterweight shaft leaving the grooved end of this rod exposed 1" out of the support frame as per Drawing 1.

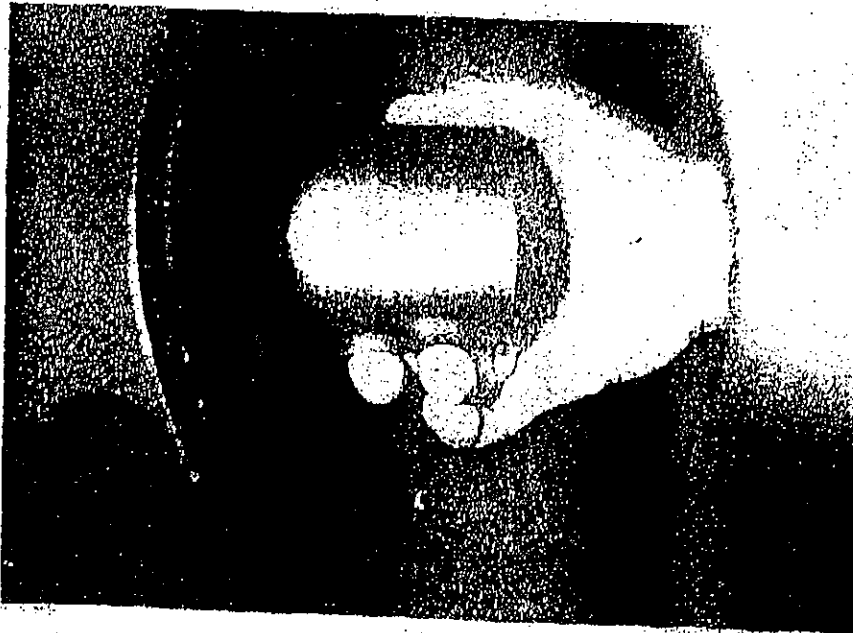


Drawing 1

12. Thread the counterweight shaft splice plug onto the threaded rod, through the crossblock, until it is flush with the end of the counterweight shaft as per Drawings 2 and 3. Use Blue Loc-tite to secure.

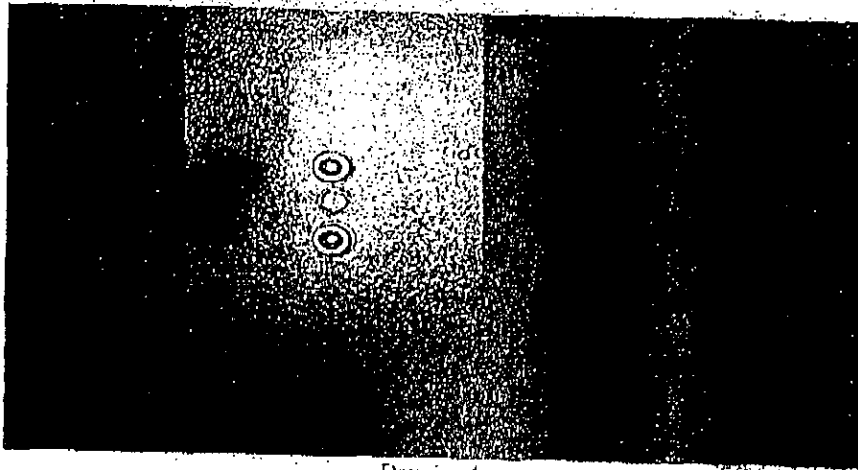


Drawing 2



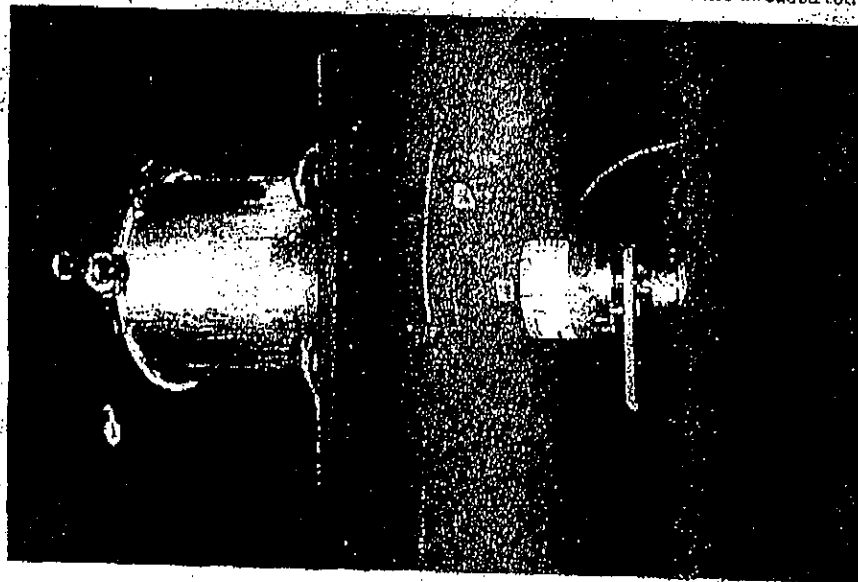
Drawing 3

- 13. Reinstall the roll encoder. Do this now because clearance is very limited.
- 14. Thread the remaining exposed rod into the counterweight until it is flush with the support frame as per Drawing 4. Use Blue Loctite to secure.



Drawing 4

- 15. Install counterweight plug cover over the plug as per Drawing 5. The offset hole should be on top on either side. Use a lock washer and nut to secure the threaded rod.



Drawing 5

16. Remove the 5/8" x 2" counterweight shaft bolt and replace it with a 5/8" x 2-1/2" bolt. This bolt will go through the offset hole. Secure with a lock washer and jam nut.
17. Reinstall safety wire on the tail support frame bolts and counterweight shaft flange bolts.

Report to MaxFlight Technical Support Dept. when complete.

## Shoulder Harness Upgrade

### Mandatory Service Bulletin # 122004

29 November 2004

MaxFlight Corporation is issuing this mandatory Service Bulletin #122004. This service bulletin must be complied with by all owner/operators of all MaxFlight manufactured Virtual Reality models VR2000, VR2002, FS2000, VR2500 and MT3000.

The models involved include all hydraulic as well as electrical versions of the above mentioned models.

Should any/all owner/operators fail to fully comply with this service bulletin, then, any further incidents incurred by operating unmodified MaxFlight models, (using the old style shoulder restraint system), will be the sole responsibility of the owner/operator of such a machine and release MaxFlight Corporation of any legal damages.

The Upgrade Kit will contain the following parts, drawings, pictures and instructions;

#### Drawings;

- Seat Pan modification drawing # SB122004-8
- Hinge Drawing # SB122004-2
- Crotch belt top ½ installation to shoulder restraint, side view. #SB122004-1
- Drawing locating lower ball pivot bracket to the steel back
- # SB122004-5 for Double Wide units with on-board computers
- # SB122004-6 for VR2000 Single seat Flight Simulators
- # SB122004-7 for Hydraulic units with standard seats. VR2002, VR2500, MT3000
- Drawing showing installation of upper bolt, nut, washer and pivot ball onto shoulder restraint assembly. # SB122004-3
- Electrical drawing showing wiring of new seat belt interlock system to the current patron E-Stop circuit.
  - # SE11104 for Hydraulic Machines
  - # SE11103 for Electrical Machines.
- SB122004-9, Padding and Covering modification.
- SB122004-10, Hinge location on seat cross bar.

#### Parts;

1. 2 each PN 12092 Beams crotch belts with integral N/C micro switch.
2. 2 each E22002 Top anchor bars for upper restraint.
3. 4 each ¼ X 20 X 1.75" Hex bolts
4. 4 each ¼ X 20 hex nuts, nylon self lockers
5. 2 each 3/8 X 18 X 1.5" Allen Cap bolts
6. 2 each 3/8 flat washers
7. 2 each 3/8" nylon self locker nuts.
8. 2 each ½ X 13 X 2.5" modified hex bolt with pivot ball.
9. 2 each ½ flat washers
10. 2 each ½ X 13 nylon self lockers hex nuts.
11. 2 each pivot ball bracket for lower mount.
12. 4 each ¼ X 20 X 1.5" Allen cap bolts



13. 4 each ¼ X20 nylon self locker hex nuts.
14. 2 each 90 LB gas struts
15. 2 each wire adapter harnesses, allows connecting crotch belt to E-Stop circuit
16. 4 each 3/8 X 18 X 1.5" Hex bolts, holds hinge to seat frame.
17. 4 each 3/8 X 18 Nylon self locker hex nuts
18. 4 each 3/8 flat washers.
19. 2 each blue inline quick splice connectors.

#### Upgrade Instructions.

1. Inventory the entire kit. If parts are missing do not start upgrade but contact MaxFlight Corp. at (732)-281-2007, Ext 235 and request missing parts.
2. Review the instructions, drawings and pictures that are part of this upgrade.
3. Remove power from machine.
4. Remove lower ABS, to allow access to wiring from roll ring to the cockpit.
5. Remove any old shoulder restraint device currently installed on shoulder restraint ie:
  - a. Old style electric locking device and associated gas strut
  - b. Old style hydraulic shoulder locking device and associated gas strut
  - c. Old style gas strut and cable release system.
6. Remove the outer shoulder restraint covering on both sides of machine. This will allow access to upper pivot mounting area and lower cross bar of restraint.
7. Remove the lower cross bar foam rubber padding, both sides. Will be modified before reinstallation.
8. Place aside foam padding and remove the current upper pivot pin or bolt/s that now fastened the locking mechanism to the shoulder restraint system.
9. With the units that have previously upgraded to the gas shocks with upper clevis and pin, verify that the bushings installed in the shoulder restraints are in good condition. If worn call for new ones before installing new bolt/s with pivot ball.
10. Locate modified ½" hex bolt with pivot ball.
11. Insert bolt from inside of machine outwards through flat washer then shoulder harness steel and/or bushings.
12. Install nylon self locker hex nut. Tighten tightly, no play.
13. Install pivot ball into end of 1/2" bolt by using blue loctite on threaded end, tighten pivot ball.
14. Repeat 10-14 on other shoulder harness.
15. Using lower pivot bracket installation drawing, measure and mark the steel back for bolt location. See Dwgs. # SB122004-5 through -7 for your machine type.
16. Drill ¼" holes through steel back.
17. Using ¼ X 20 X 1.5" allen bolts, push bolts through steel back, through pivot bracket with ball facing towards the outside of the machine. Install ¼ X 20 nylon self locker hex nuts and tighten snug.
18. Repeat 14-18 on other side of the machine. (If Required)
19. Locate the drawing # SB122004-4, this shows the location of holes to be drilled on lower cross tube of shoulder restraint.
20. Measure, mark and drill left side bolt hole first on cross tubes, place hold bar in place with bolt and nut according to drawing. Holding bar parallel, drill second hole through tube using bar as guide.
21. Locate the two crotch belt, separate the two halves.
22. Using the tongue end, insert an anchor bar into and through the loop end. See Dwg. SB122004-1.

23. Facing the lower cross bar, verify that the tongue and tightening strap are facing outwards.
24. Insert the two 1/4 X 20 X 1.75" hex bolts through the anchor bar ends and through the cross tube.
25. Install two flat washers and 1/4 X 20 nylon self locker hex nuts on inside and tighten till snug.
26. Repeat steps 20-26 for other shoulder restraint assembly.
27. Modify cross bar padding and outer covering per drawing #SB122004-9. Reinstall foam padding with cutout slit facing downwards.
28. Reinstall foam padding on upper bolt side if removed. Wrap duct tape around padding to help keep in place.
29. Reinstall restraint covering completely both sides.
30. Locate the gas struts. With the black thicker part of gas strut facing upwards, insert top pivot socket over top ball stud by pressing on gas strut until it snaps into place.
31. Install lower socket onto lower ball stud and bracket by pressing on socket till it snaps into place.
32. Remove the seats and retain hardware for reinstallation of same later.
33. Remove seat pan if installed and modify same as per drawing # SB122004-8.
34. Reinstall seat pan after modification.
35. Using drawing # SB122004-10, measure, mark and drill holes for the hinge that will mount to the lower front seat cross bar.
36. Install hinge to cross brace using two 3/8 X 18 X 1.5" Hex bolts.
37. Push hex bolts through from front through washer then cross bar through hinge.
38. Install two 3/8 X 18 nylon self locker hex nuts on backside. Tighten assembly.
39. Repeat steps 32-39 on other side. (If you have two seats).
40. Reinstall seat assembly both sides.
41. Locate lower half of crotch belt and cable assembly.
42. Feed wire loop end and switch cable through front lower seat opening.
43. Using the 3/8 X 18 X 1.5" allen bolt, flat washer and nylon self locker hex nut, install washer over the bolt, feed bolt through seat buckle mount loop, then through hinge mount hole. Install nylon self locker nut onto bolt and tighten. See Dwg. #SB122004-2.
44. Feed switch cable downwards, verify cable is not pinched between seat pan and cross bar.
45. Repeat switch cable on other side.
46. Locate the wiring assembly as per drawing # SE11103 for Electric, SE11104 for Hydraulic machines.
47. Fish the crotch belt cables towards the center rear of the machine and connect each connector to the adapter harness.
48. Locate the cable coming from the patron E-stop and follow same till it connects to the roll slip ring wiring harness.
  - a. The connector is a military style connector on hydraulic units. You do not have to disengage the connector to finish the modification. You must however allow free play in the cables to allow you access to the wires on back of the military connector.
  - b. On electric machines, you need only to separate the 2 pin molex connection between E-stop cable and connector going to roll slip ring. Install cable assembly harness provided SE11103.
49. On cockpit side of hydraulic units E-stop cable, push back the nylon covering or strip carefully the rubber insulation covering. Start about one inch behind the connector and peel open about 1.5 inches of the covering. This will expose two wires one black and one white.

50. Locate the inline quick connectors (blue), slip one over the black and white wire that you exposed earlier.
51. Insert the new wiring adapter See Dwg SE11104, white wire into white wire, black to black quick connector.
52. Verify each wire is all the way into the electrical quick connect, using a common pliers crimp down on metal bar in center of connector till fully seated. Click insulation cover into place. Repeat with other wire.
53. Give slight tug on inserted wires to verify new wires installed are grabbed by crimp.
54. Using an ohm meter test each cable by placing meter leads to pins A and B of cannon plug on hydraulic units, or across the two pins going to roll ring connector.
  - a. Verify E-stop is pulled out.
  - b. Insert tongue into buckle end of crotch belt both sides. You should show infinity on meter. (Open)
  - c. Open one shoulder restraint buckle. You should show a short on meter.
  - d. Re-buckle tested side and repeat on other side.
  - e. Connect to roll ring connector.
55. Cable tie loose cables into bundle to prevent damage to same.
56. Before installing lower ABS panel.
  - a. Close and latch the new crotch belts both sides.
  - b. Verify that the old E-stop button is pulled out OFF.
  - c. Close and latch regular seat belts.
  - d. Close and latch canopy
  - e. Power up the motion control computer.
  - f. For those machines that have new motion com installed;
    - i. Open Motion Client program
    - ii. Verify that the only sensor checked is the lowered sensor. If the E-stop sensor is checked you either did not latch one of the crotch belts or E-stop switch is pressed in, Check and retest.
  - g. For those older machines that do not have motion com installed;
    - i. Power up main control computer.
    - ii. Open the normal program ie: Roller Coaster, Flight Sim or Monster Truck program.
    - iii. In Coaster program control window, you have five sensor icons in lower middle of the control window. The only icon that should be ON is the lowered icon light. If the E-Stop light is ON, reverify that crotch belts are buckled and E-Stop switch is out. Retest.
    - iv. In Monster Truck and Flight sim control window, you should have an icon right middle of window. This should be the E-Stop indicator icon. With program ready to run this icon must be gray, not red. If red, check crotch belts and E-stop switch. Retest.
57. If test indications are correct, run one or two demo rides to verify correct installation of upgrade.
58. When demo rides complete correctly, install the lower rear ABS panel.
59. Machine is ready for the public.

### **About the upgrade and how what does it do?**

The crotch belts lower buckle half has a N/C micro switch installed. This switch is opened when the top buckle part is inserted correctly. The two micro switches are wired in parallel with the E-Stop switch.

Should a patron open/release the buckle of the shoulder restraint safety device, the shoulder restraints will go upwards, the computer will see an E-Stop safety request. The computer will issue an immediate go to home motion command to the system.

The cockpit will return immediately to the home level position and all motion to the platform will stop. The operator must lower the cockpit to the full down position before any other action to the platform can be taken.

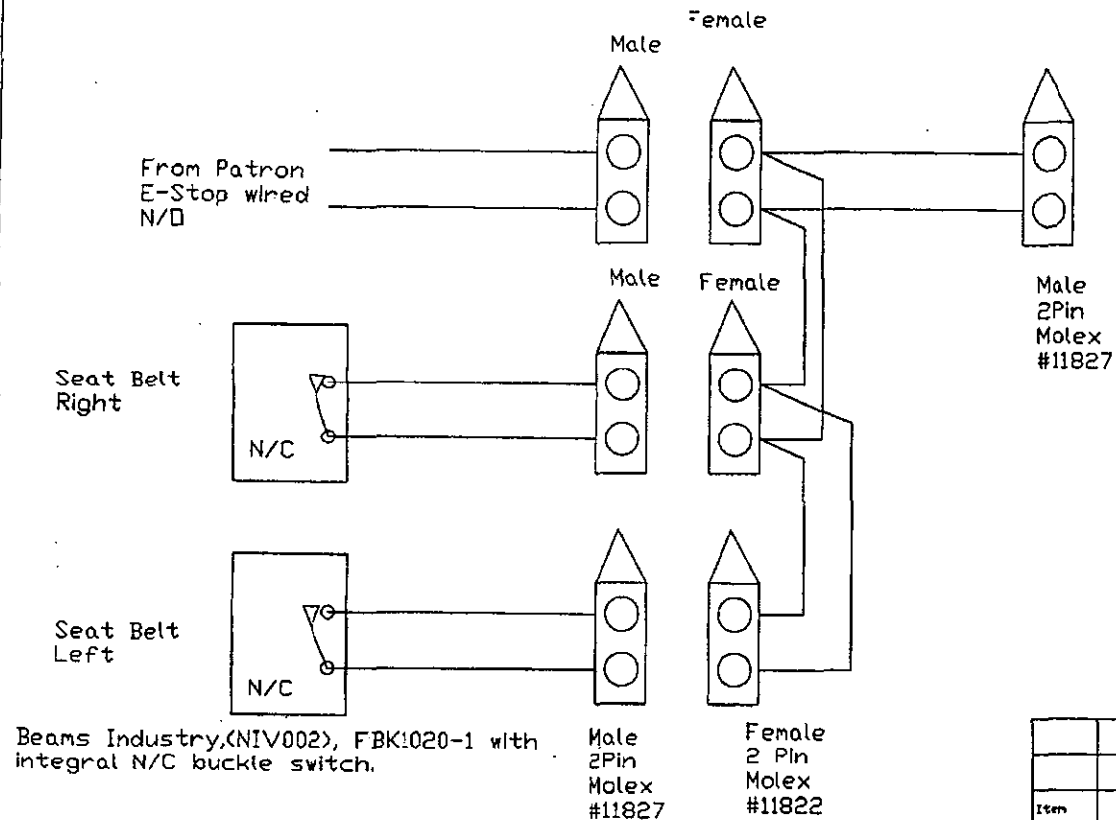
The crotch belts must be buckled before the operator can even attempt to raise the platform.

The indication on the program control panel is same as if the E-Stop was activated by a patron.

### **Pictures;**

1. Complete Belt System
2. Lower side of cross bar of shoulder restraint, shows modification for belt.
3. Hinge assembly below seat shows assembly of belt to hinge.
4. Lower Pivot hinge bracket.
5. Upper pivot ball and gas strut installation.
6. Crotch belt buckle end. Has a normally closed micro switch installed.
7. Restraint cross bar drilled for seat belt anchor bar. Padding removed.
8. Complete parts for one side assembly
9. Parts for lower pivot bracket installation.
10. Upper pivot bolt and ball assembly.
11. Hinge and mounting hardware.
12. Lower part of buckle showing mounting loop and wire harness from buckle.

REVISIONS

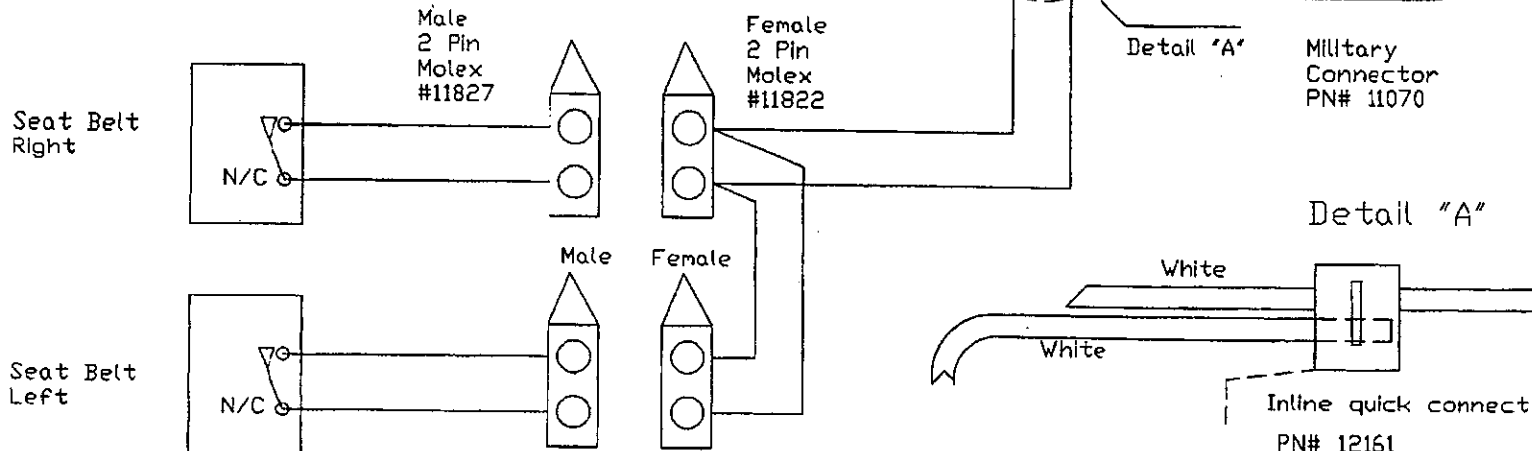


Upgrade diagram for Electric  
Machine Installing new sensor  
shoulder restraint crotch belt.

Item	Qty	Description (Part Number)
Parts List		
TITLE: Seat Belt Interlock Upgrade Elect.		
MAXFLIGHT CORPORATION 1 Executive Drive Toms River, NJ 08755 1-732-281-2007 FAX: 1-732-281-0209		
P.J.	DWG: SE11103	
Scale: None	DRAWN BY: VVB	
Matl:	DATE: 29 Nov 2004	REV
APPROVED BY:		DATE:

REVISIONS

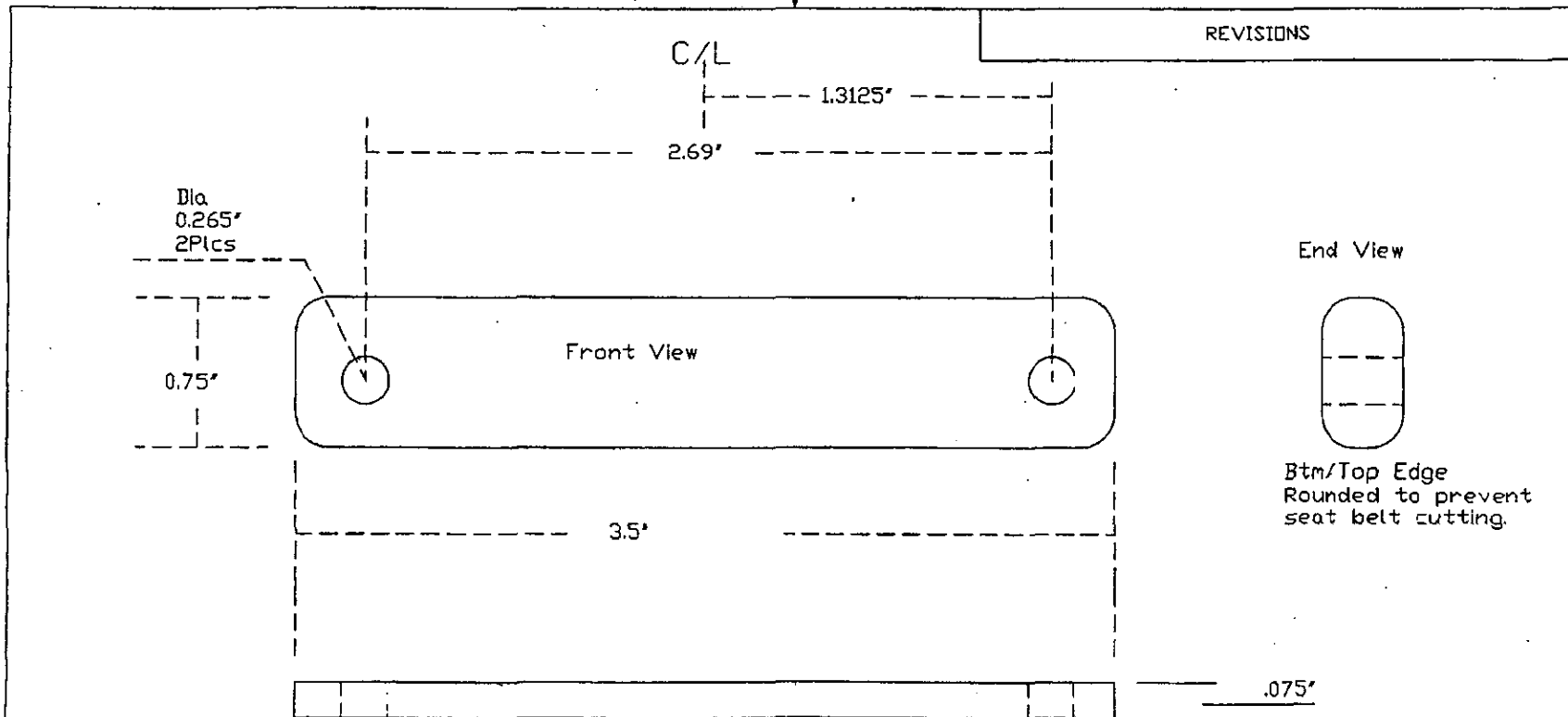
From Patron  
E-Stop  
Switch wired  
N/D



Beams Industry, (NIV002), FBK1020-1  
with integral N/C buckle switch.

Upgrade diagram for Hydraulic  
Machine installing new sensor  
shoulder restraint crotch belt.

Item	Qty.	Description (Part Number)
Parts List		
TITLE: Seat Belt Interlock Upgrade Hydraulic		
MAXFLIGHT CORPORATION 1 Executive Drive Tom's River, NJ 08755 1-732-281-2007 FAX: 1-732-281-02009		
P.R.	DWG#	SE11104
Scale: None	DRAWN BY:	VWB
Mat#	DATE:	29 Nov 2004
APPROVED BY:	DATE:	



REVISIONS

Crotch Belt Front Anchor Bar

MAXFLIGHT CORPORATION 1 Executive Drive Toms River, NJ 08755 1-732-281-2007			
TITLE Top Crotch Belt Anchor Bars			
DOCUMENT NUMBER SE22002			
SIZE	DRAWN BY: <b>WVB</b>		REV
	CHECKED BY:	APPROVED BY:	
DATE	29 Nov 2004		

REVISIONS

Crotch Belt Lock Loop

Frnt Side

Seat Side

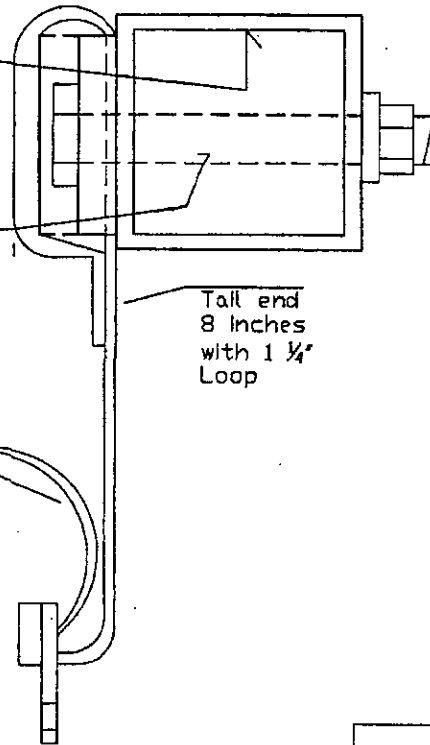
1" Square, Center  
Shoulder Restraint  
Cross Bar

1/4" X 20 X 1.5" Hex Bolt,  
and nylon self locker hex  
nut.

Tail end  
8 inches  
with 1 1/4"  
Loop

Pull end  
8 inches

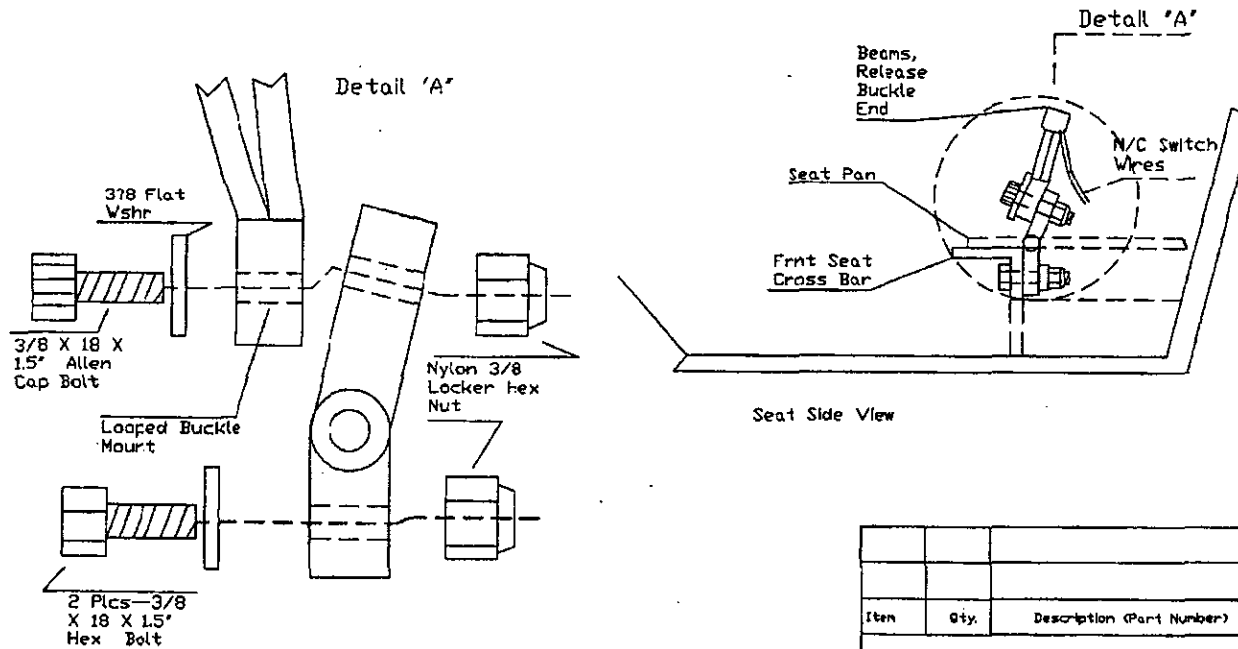
Adjustable Male  
Tongue End



MAXFLIGHT CORPORATION 1 Executive Drive Toms River, NJ 08755 1-732-281-2007			
TITLE Top half of Crotch belt Installation			
DOCUMENT NUMBER SBI22004-1			
SIZE	DRAWN BY: WWB	CHECKED BY:	REV
		APPROVED BY:	
DATE	29 Nov 2004		

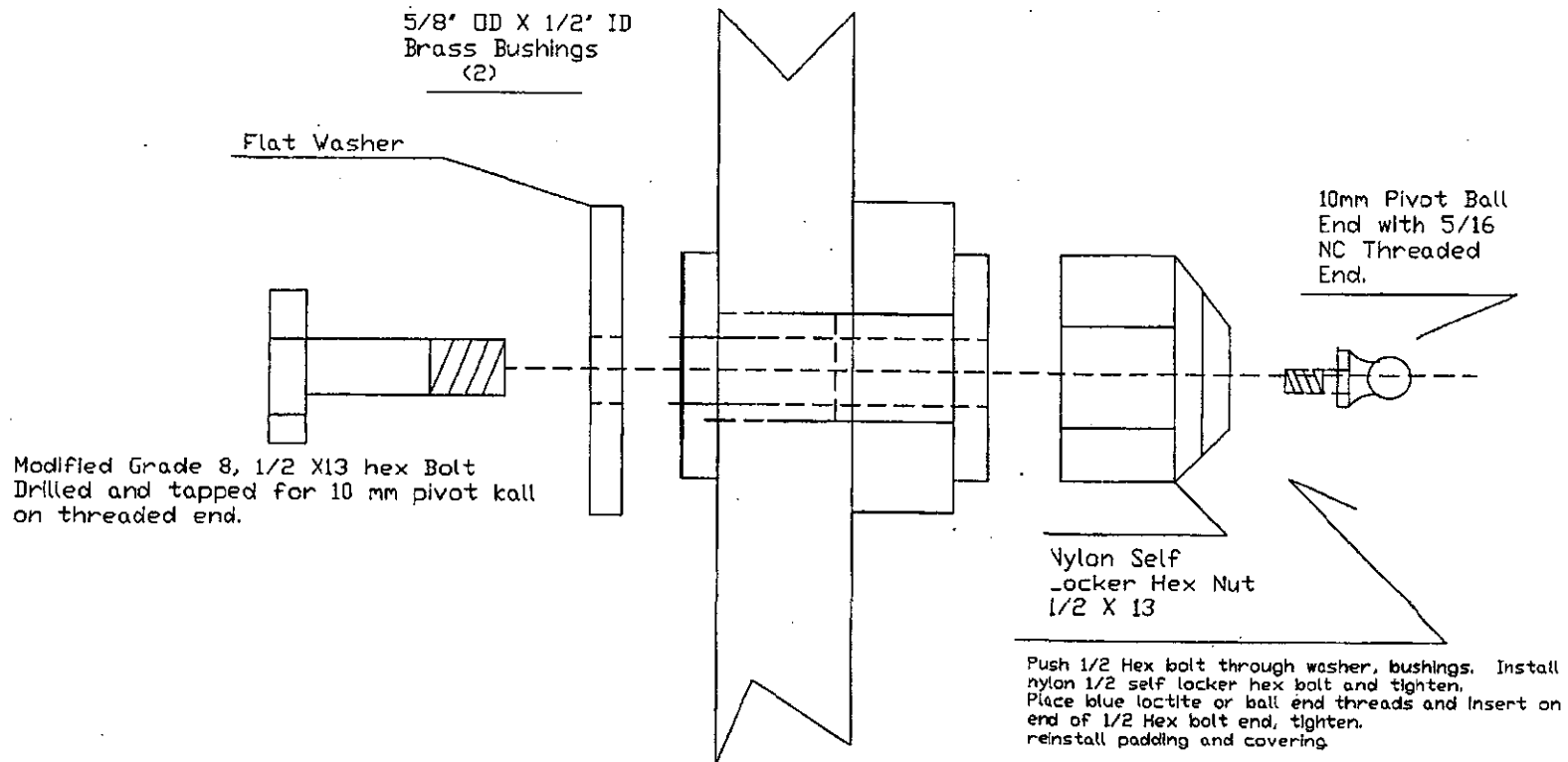


REVISIONS



Item	Qty.	Description (Part Number)
Parts List		
TITLE: Crotch Belt Lower Buckle Mount Hinge		
MAXFLIGHT CORPORATION 1 Executive Drive Toms River, NJ 08755 1-732-281-2007 FAX 1-732-281-0209		
P.N.	DWG SBI22004-2	
Scale:	None	DRAWN BY: WVB
Mat:	DATE: 30 Nov 2004	REV
APPROVED BY:		

Shoulder Restraint  
outer support bar.



On systems that were modified with brass bushings, verify that bushings are in good shape before installing new bolt and pivot ball assembly.

On systems that were never modified and have the original 1/2" hole through shoulder restraint, verify hole and shoulder restraint is in good condition before installing new pivot ball assembly.

MaxFlight Corporation			
1 Executive Drive (732)-281-2007		Toms River, NJ 08755 FAX (732)-281-2009	
TITLE Top Pivot bolt/ball installation			
PN:		DWG: SB122004-3	
DRAWN BY:	DATE: 29 Nov 2004	Scale: None	REV
CHECKED BY:		Matl:	
APPROVED BY:		DATE:	

REVISIONS

1 X 1 Square  
Tubing

Front lower shoulder  
restraint cross bar

6.75"  
C/L

Front  
Face

Hole  
centered

5.5"

2.69"

Dia 0.25"  
two plcs

13.5"

MAXFLIGHT CORPORATION

1 Executive Drive Toms River, NJ 08755

1-732-281-2007

TITLE Shoulder Restraint Cross bar

DOCUMENT NUMBER SB122004-4

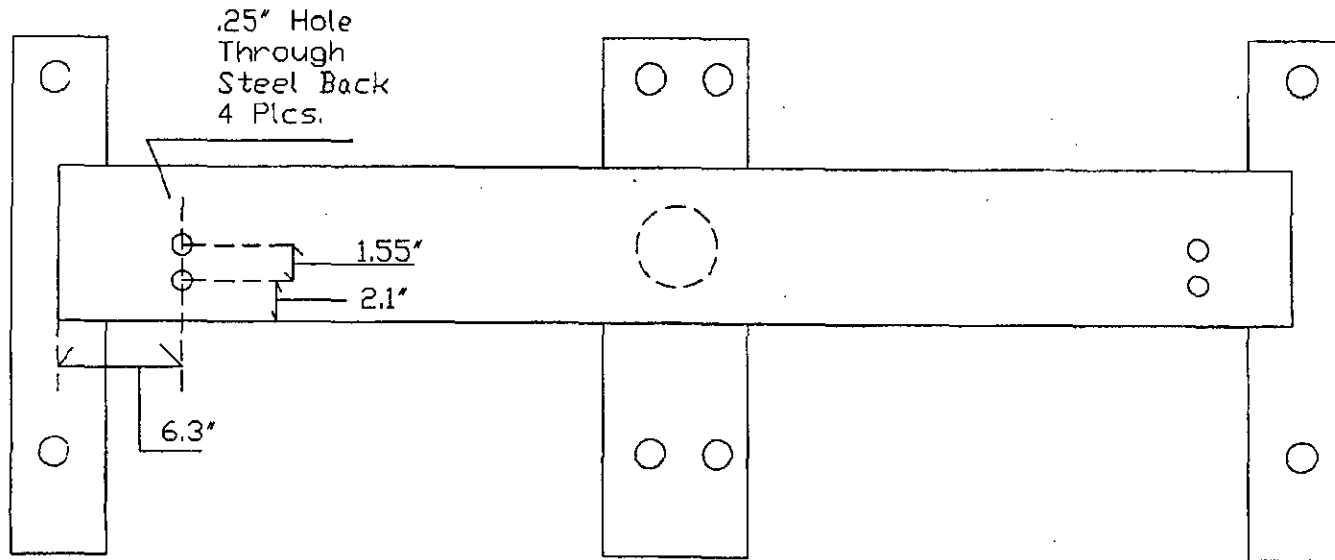
SIZE DRAWN BY: **WVB** REV

CHECKED BY: APPROVED BY:

DATE 29 Nov 2004

REVISIONS

Rear View



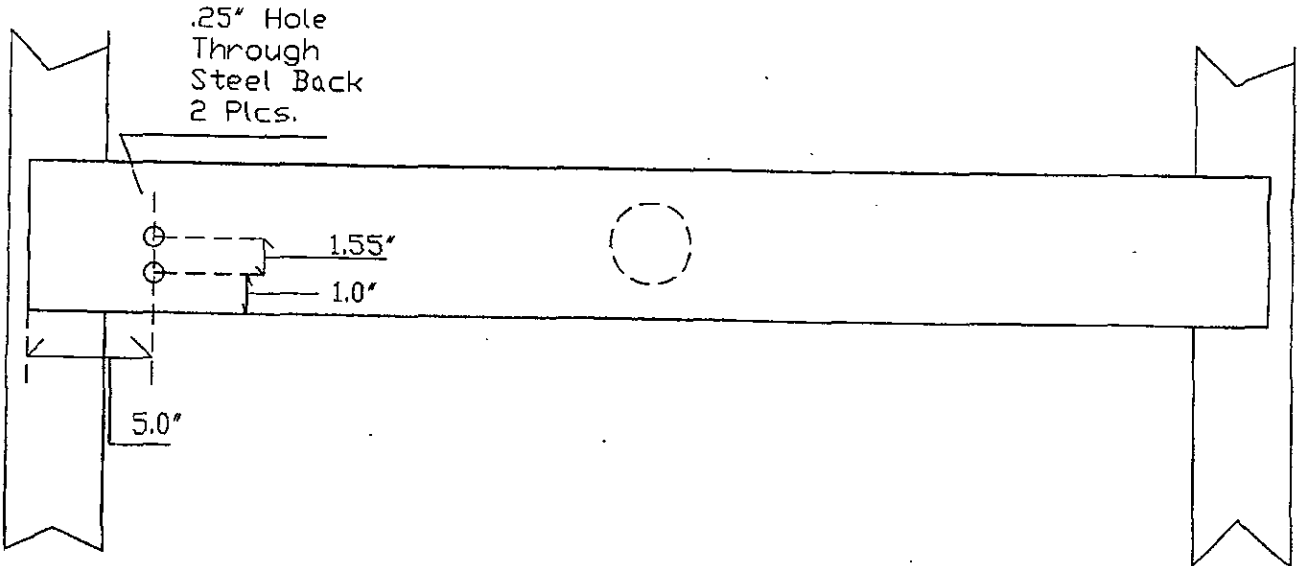
Double Wide Units with On-Board Computers

Item	Qty.	Description (Part Number)
Parts List		
TITLE: Steel Back Lower Pivot Bracket Location		
MAXFLIGHT CORPORATION 1 Executive Drive - Toms River, NJ 08755 1-732-281-2007 FAX: 1-732-281-0209		
P.N.		DWG: SB122004-5
Scale: None		DRAWN BY: VWB
Meth:		DATE: 29 Nov 2004
APPROVED BY:		REV
		DATE:

REVISIONS

Rear View

Left Side

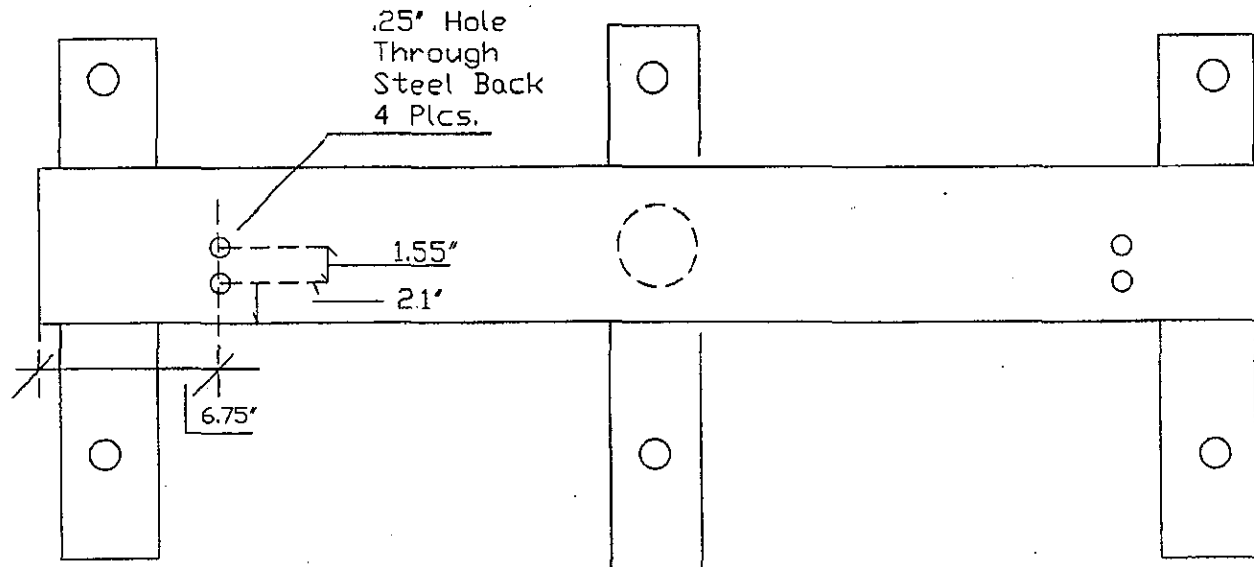


VR2000 Single Seat Flight Simulator

Item	Qty.	Description (Part Number)
Parts List		
TITLE: VR2000 Lower Pivot Bracket Location		
MAXFLIGHT CORPORATION 1 Executive Drive Tomp River, NJ 08755 1-732-281-2007 FAX: 1-732-281-0209		
P.J.L.		DWG: SB122004-6
Scale: None		DRAWN BY: VVB
Mott		DATE: 29 Nov 2004
APPROVED BY:		REV
		DATE:

REVISIONS

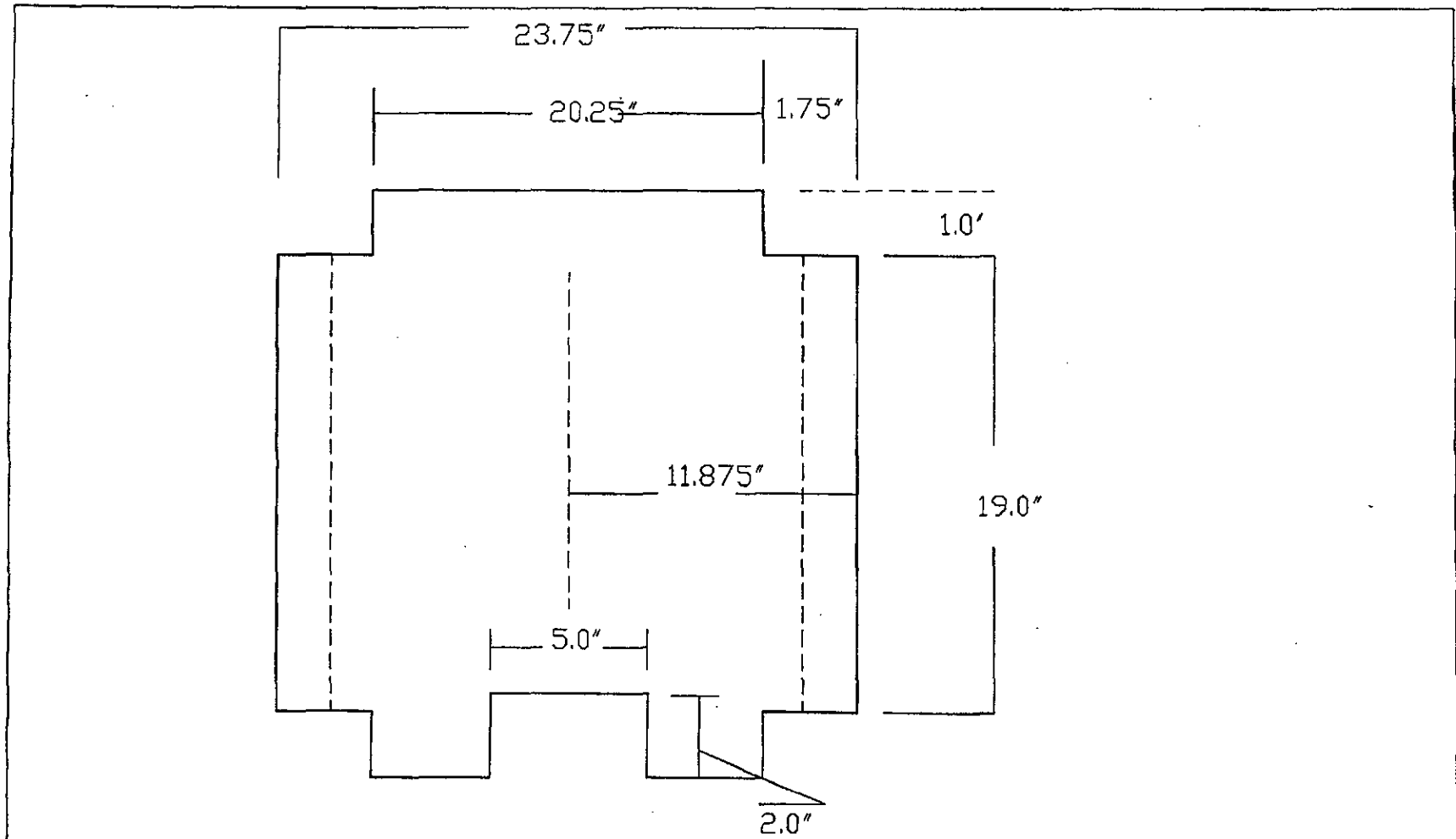
Rear View



Hydraulic Units with Standard Seats with Steel Seat Backs, VR2002, VR2500, MT3000

Old Aluminium Seat Backs are no longer authorized and should have been replaced with steel back mount system along with roll hub retention system.

Item	Qty.	Description (Part Number)
Parts List		
TITLE: Standard Seat Units Pivot Bracket Location		
MAXFLIGHT CORPORATION 1 Executive Drive Toms River, NJ 08755 1-732-281-2007 FAX: 1-732-281-0209		
P.N.		DWG: SB122004-7
Scale: None		DRAWN BY: WWB
Note		DATE: 29 Nov 2004
APPROVED BY:		REV
		DATE:



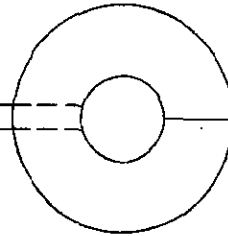
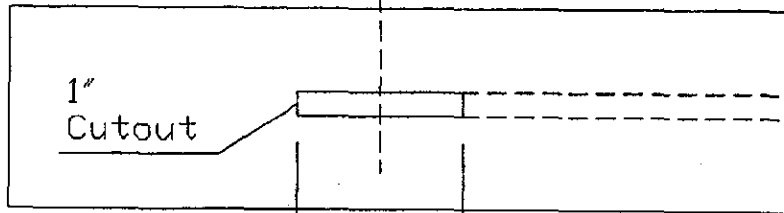
MaxFlight Corporation			
1 Executive Drive		Toms River, NJ 08755	
(732)-281-2007		FAX (732)-281-2009	
TITLE: Seat Pan Modified			
PN:		DWG: SE122004-8	
DRAWN BY:	DATE/30 Nov 2004	Scale: None	REV
CHECKED BY:		Matl:	
APPROVED BY:		DATE:	

REVISIONS

Center opening side to side

Bottom View of Padding

End View of Cross Bar Padding



1" Cutout

2" Wide Cutout

Hair side of velcro strip on cover

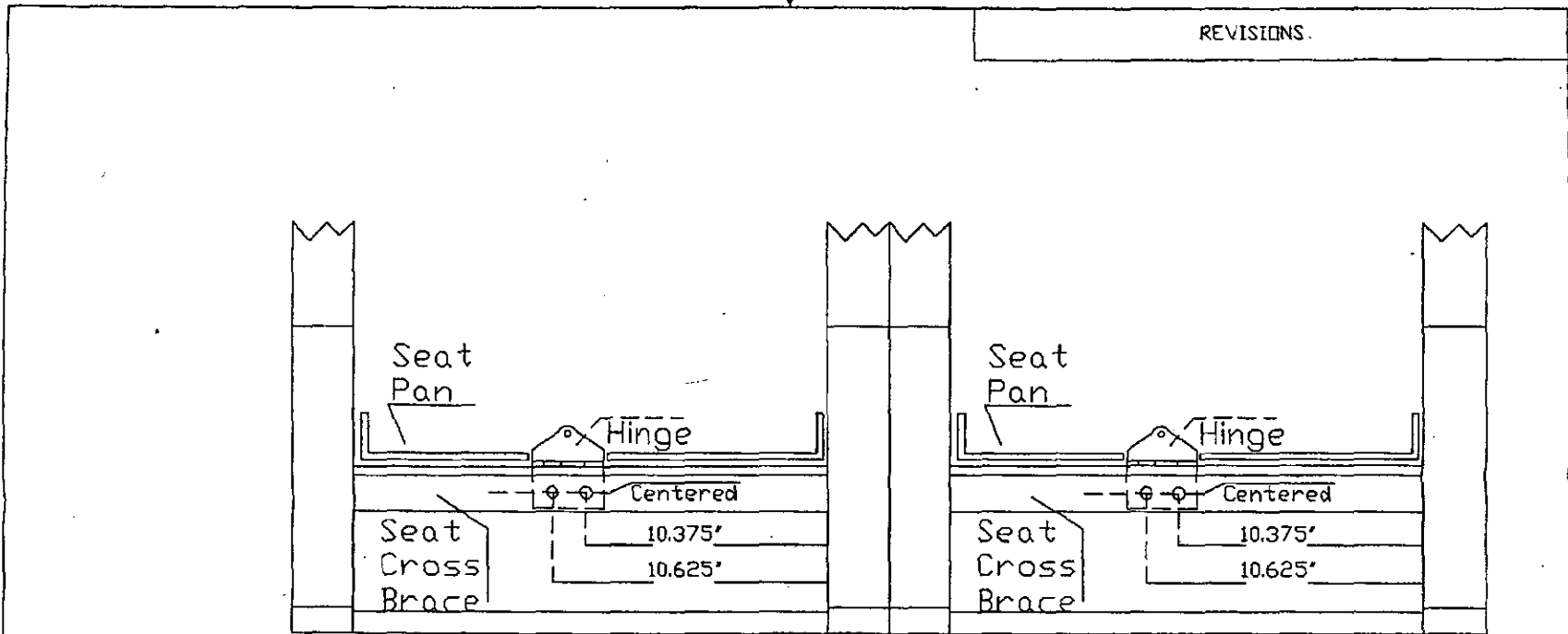
Cut a slit to match padding cut.

bottom edge of Cover

Hook loop side of velcro strip on cover

Item	Qty.	Description (Part Number)
Parts List		
TITLE Restraint Cover and pad modification		
MAXFLIGHT CORPORATION 1 Executive Drive Toms River, NJ 08755 1-732-281-2007 FAX: 1-732-281-0209		
P.N.	DWG:	SB122004-9
Scaler: None	DRAWN BY:	VWB
Mat:	DATE:	30 Nov 2004
APPROVED BY:	DATE:	





REVISIONS

Front of Seat Frame  
Assy.

Shown are double wide seats. Standard wide seats will be measured the same. The difference will be only one center down tube instead of two as shown.

VR2000 single seat flight simulators will use the right side of drawing for measurements.

Item	Qty.	Description (Part Number)
Parts List		
TITLE: Hinge location drawing		
MAXFLIGHT CORPORATION 1 Executive Drive Toms River, NJ 08755 1-732-281-2007 FAX 1-732-281-0209		
P.N.		DWG: SB122004-10
Scaler: None		DRAWN BY: WVB
Mettl		DATE: 30 Nov 2004
APPROVED BY:		REV
		DATE:

