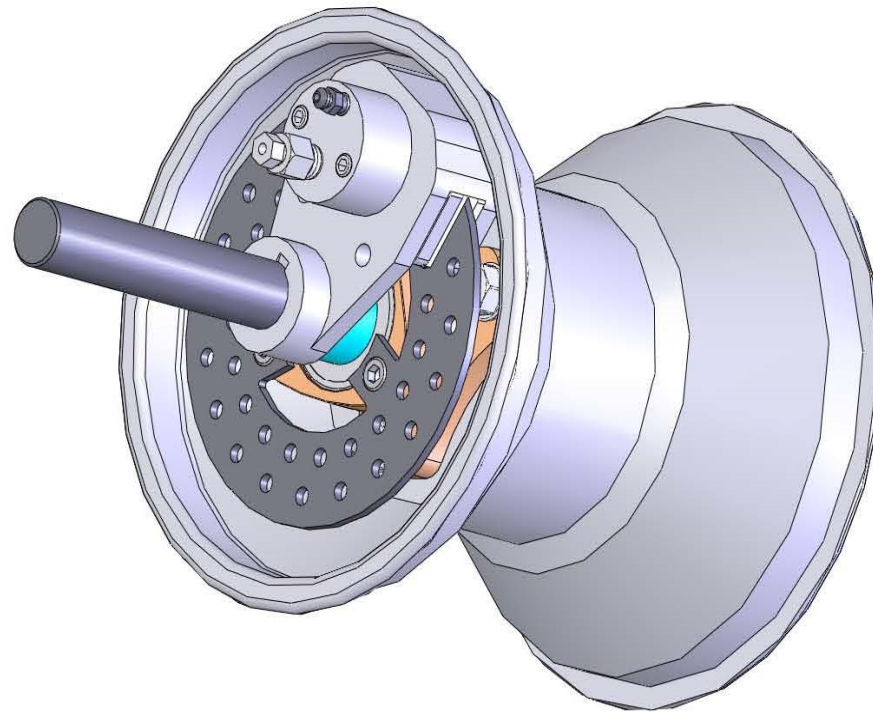


BX-1500 BLACK MAX



**3/4" Axle Heavy Duty Split Rim
Hydraulic Brake Kit
(Tires Not Included)**



PLEASE READ THROUGH THE ENTIRE MANUAL BEFORE INSTALLING YOUR BRAKE SYSTEM

*******WARNING - DO NOT USE BRAKE FLUID*****
USE ATF HYDRAULIC FLUID ONLY**

****IMPORTANT**** USE ATF FLUID ONLY (*Automatic Transmission Fluid*) ANY OTHER FLUID MAY DAMAGE THE SYSTEM

****IMPORTANT**** DO NOT USE ANY OTHER SEALS OTHER THEN WHAT IS SUPPLIED WITH THIS SYSTEM. INCOMPATIBLE SEALS WILL RESULT IN SYSTEM FAILURE

****IMPORTANT**** DO NOT USE BRAKE FLUID WITH THIS SYSTEM. BRAKE FLUID WILL DAMAGE THE SEALS

****IMPORTANT**** DO NOT EXCEED THE GROSS WEIGHT LIMIT OF 1500 LBS

****IMPORTANT**** USE PROVIDED LOCK NUTS AND LOCK WASHERS TO PREVENT WHEEL FROM LOOSENING

****IMPORTANT**** DO NOT USE IF THERE IS ANY SIGN OF LEAKING. MAKE REPAIRS IMMEDIATELY

****IMPORTANT**** MOUNT CALIPER WITH A BLEEDER SCREW LOCATED IN THE TOP POSITION ONLY. USE THE NYLON TIPPED SET SCREWS TO PLUG THE TWO OTHER UNUSED BLEEDER SCREW LOCATIONS.

****IMPORTANT**** MOUNT THE MASTER CYLINDER IN AN UPRIGHT POSITION TO PREVENT OIL FROM LEAKING FROM THE VENT PLUG.

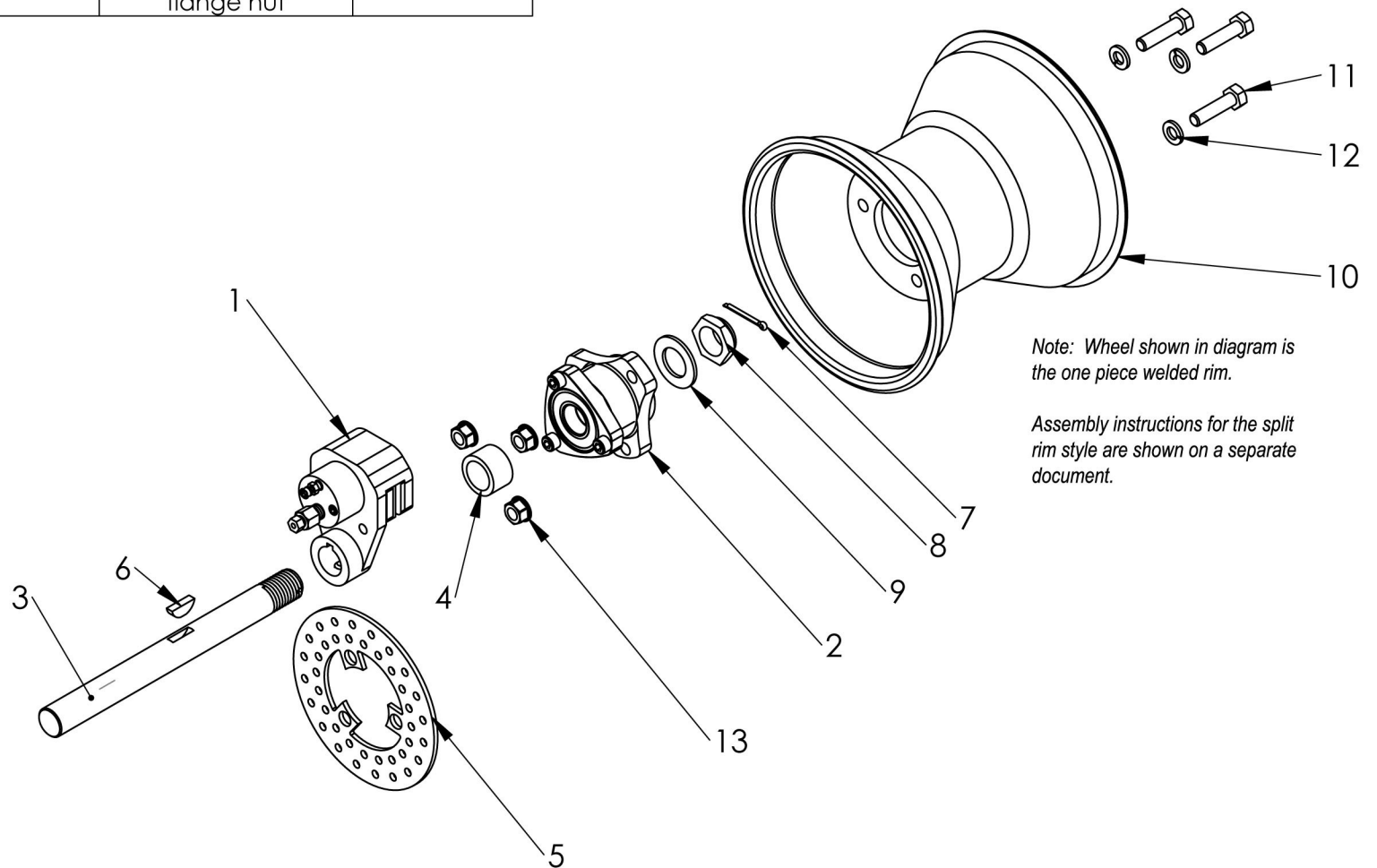
NOTE: MASTER CYLINDER CAN BE MOUNTED SIDEWAYS WITH SPECIAL VENT KIT.

****IMPORTANT**** NOTICE THE ATF HYDRAULIC FLUID WILL DISCOLOR IN DIRECT SUN LIGHT AND SHOW CLEAR IN SOME AREAS AND WILL APPEAR AS IF THERE IS AIR IN THE LINES

****IMPORTANT**** ALWAYS REPLACE THE NYLOCK AXLE NUT AFTER REMOVING IT MORE THEN TWO TIMES

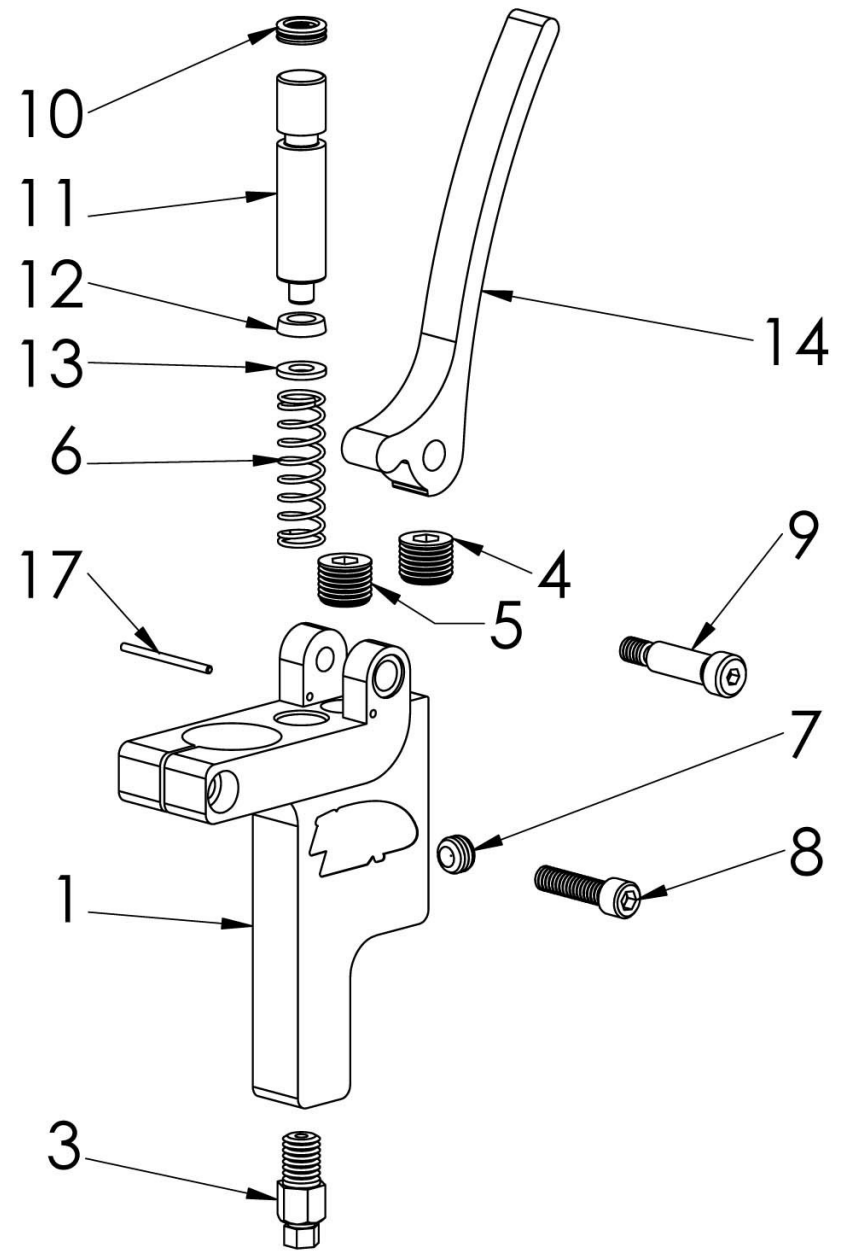
****IMPORTANT**** ONLY USE THE BRAKE LINE SUPPLIED WITH KIT OR A CUSTOM FITTED ALUMINUM BRAKE LINE
(Other plastic line may look similar but will not hold the pressure resulting in weak and spongy braking performance)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	44904	BX-1500 caliper .75" assembly	1
2	44901	Wheel hub assembly	1
3	44902	3/4" axle	1
4	44905	.75" axle spacer	1
5	44746	Brake rotor	1
6	44750	woodruff key	1
7	44871	7/64" x 1" Cotter Pin	1
8	44849	3/4"-10 Nyloc thin nut	1
9	AN960-1216	3/4" Flat washer	1
10	14302	6" polished aluminum wheel	1
11	Hex head bolt	5/16-16 x1	3
12	LW 0.3125	lock washer	3
13	44774	5/16-16 serrated flange nut	3



REVISIONS		
REV.	DESCRIPTION	DATE
A	Added new handle and spring pin for positive stop	3/24/2008

ITEM NO.	PART NUMBER	DESCRIPTION	Default/QTY
1	44742	Master Cylinder	1
2	44747	Brake handle	1
3	44756	1/8" NPT to 1/8" tube compression fitting	1
4	44758	1/8" NPT plug	1
5	44759	1/8" NPT vent plug	1
6	44761	Return spring	1
7	44760	1/8" NPT plug	1
8	44763	1/4"-20 SHCS S.S.	1
9	44762	Shoulder screw	1
10	44749	O-ring	2
11	44745	Master cylinder piston	1
12	44776	Cup Seal	1
13	44777	Cup seal washer	1
14	44747	Brake handle	1
15	44784	Foot brake lever	1
17	44881	spring pin	1



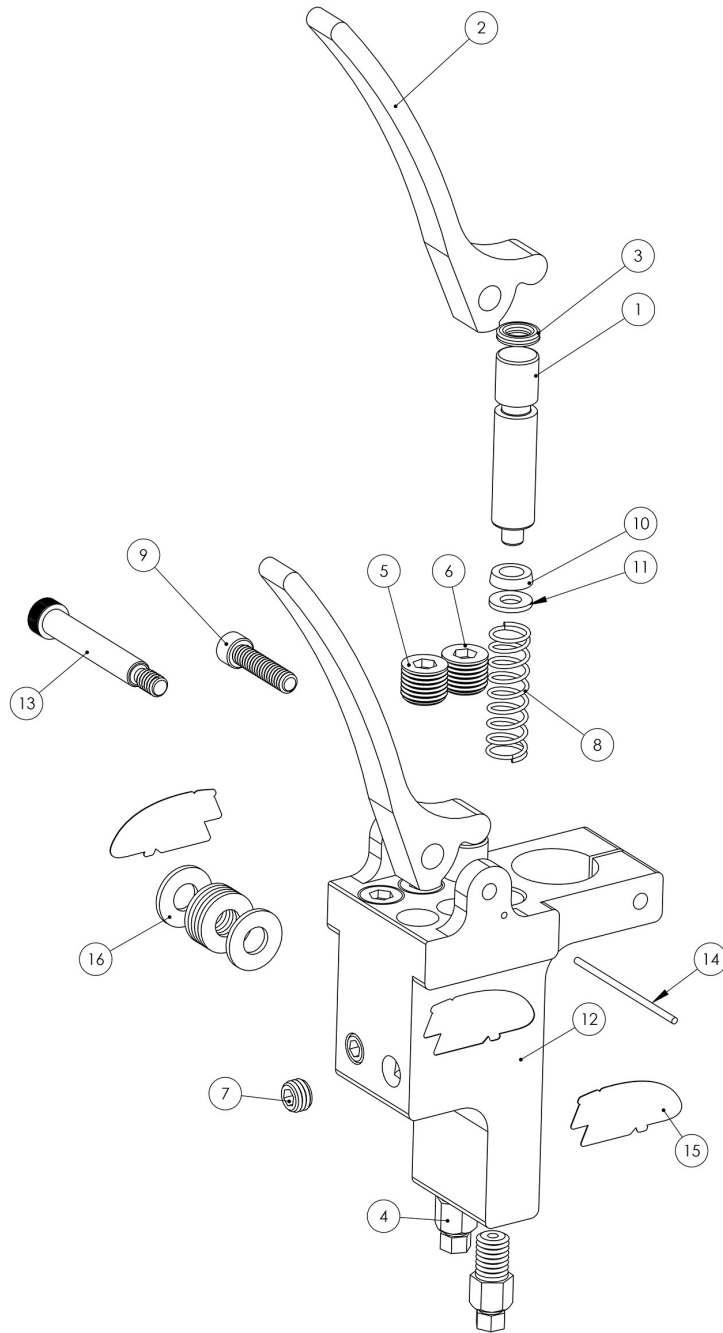
Notes:

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL $\pm 1/8"$
 ANGULAR: MACH $\pm .5^\circ$ BEND $\pm 1^\circ$
 TWO PLACE DECIMAL $\pm .030$
 THREE PLACE DECIMAL $\pm .005$

MATERIAL
 FINISH
 DO NOT SCALE DRAWING



TITLE: Master Cylinder Assembly		
Part #	44764	Qty Req'd A
SCALE: 1:8	WEIGHT:	REV:2

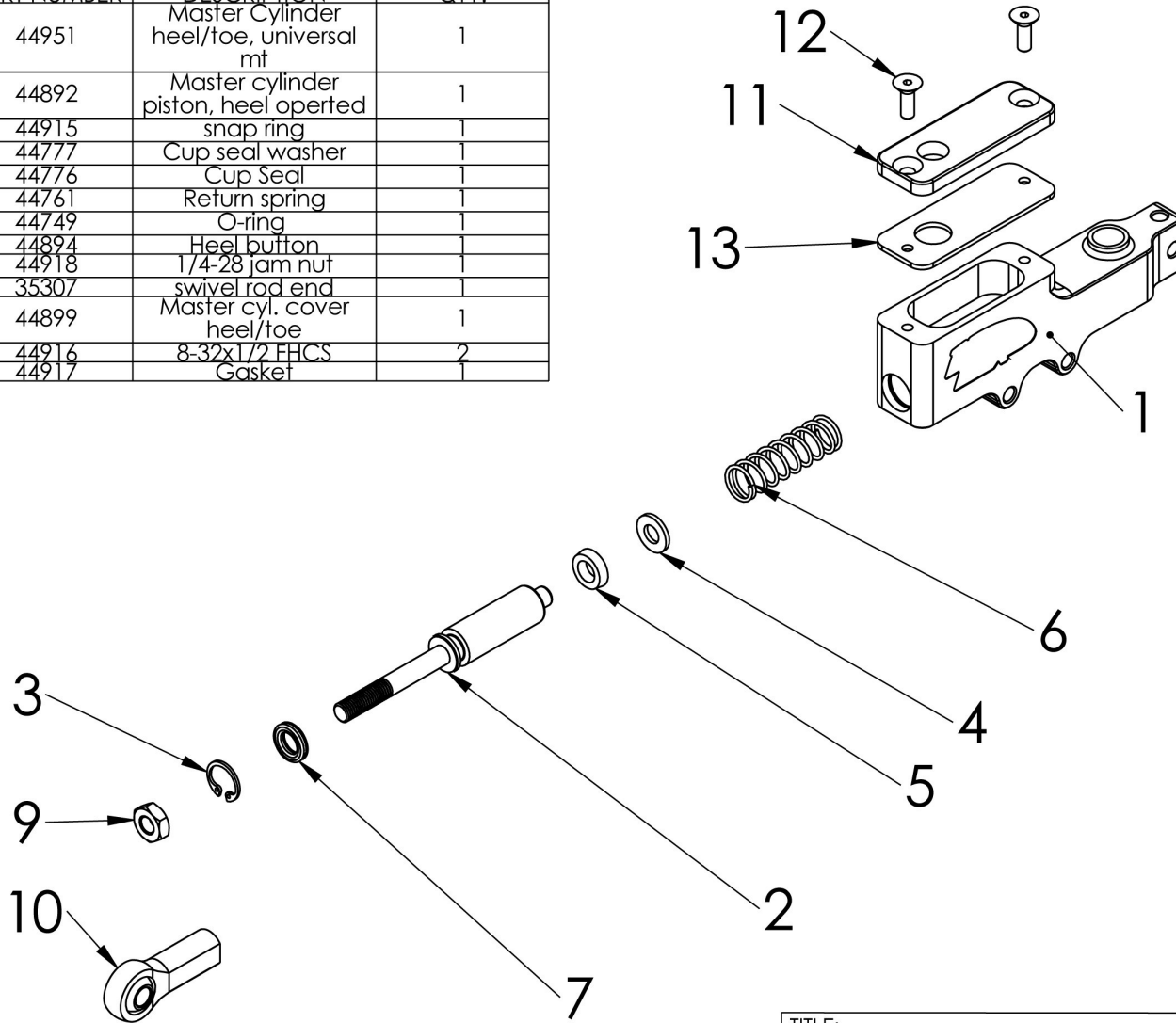


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	44745	Master cyl piston	2
2	44747	brake handle 2	2
3	44749	O-ring	2
4	44756	.125 npt to .125 tube compression fitting	2
5	44758	.25 NPT plug	2
6	44759	vent plug	2
7	44760	.125 NPT master cylinder plug	2
8	44761	master cylinder spring	2
9	44763		1
10	44776	master cylinder seal	2
11	44777	Cup seal washer	2
12	46005-1	Master cylinder	1
13	46007		1
14	46011		1
15	Block Max Logo Decal		2
16	46009		7

NOTE: This disclosure is to be maintained in confidence. All invention rights disclosed herein reserved by Sunrise Machine and Tool. It shall not be reproduced or its content disclosed in whole or in part without the prior written consent of Sunrise Machine and Tool.

DO NOT SCALE DRAWING	Engineer JV	7/9/2019	Weight 1.18 lb	Quantity	SCALE 1:1	
 FREE BIRD INNOVATIONS, INC.	Material	UNLESS OTHERWISE SPECIFIED: V THREADS: COUNTERSINK TAPPED HOLES TO MAJOR DIA., 120° INCLUDED ANGLE CHAMFER MALE THREADED PARTS TO MINOR DIA., 120° INCLUDED ANGLE. ALL DIMENSIONS SHOWN IN INCHES. BREAK ALL EDGES .01 MAX. WELDS MEASURED PER A.I.W.S. STANDARDS. TOLERANCES: X.X ± 0.05 X.XX ± 0.03 X.XXX ± 0.010 ANGLES ± 1°			 DRAWING SIZE	C
					CURRENT REVISION	-
TITLE Black Max Dual Lever stick mount master cylinder assembly- hand operated			PART NUMBER 46005			

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	44951	Master Cylinder heel/toe, universal mt	1
2	44892	Master cylinder piston, heel operted	1
3	44915	snap ring	1
4	44777	Cup seal washer	1
5	44776	Cup Seal	1
6	44761	Return spring	1
7	44749	O-ring	1
8	44894	Heel button	1
9	44918	1/4-28 jam nut	1
10	35307	swivel rod end	1
11	44899	Master cyl. cover heel/toe	1
12	44916	8-32x1/2 FHCS	2
13	44917	Gasket	1



Notes:

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL $\pm 1/8"$
 ANGULAR: MACH $\pm .5^\circ$ BEND $\pm 1^\circ$
 TWO PLACE DECIMAL $\pm .030$
 THREE PLACE DECIMAL $\pm .005$

MATERIAL

FINISH

DO NOT SCALE DRAWING



TITLE:

Master cylinder Heel/Toe

Part #

44952

Qty Req'd

SCALE: 1:2

WEIGHT:

REV:

5

↑

4

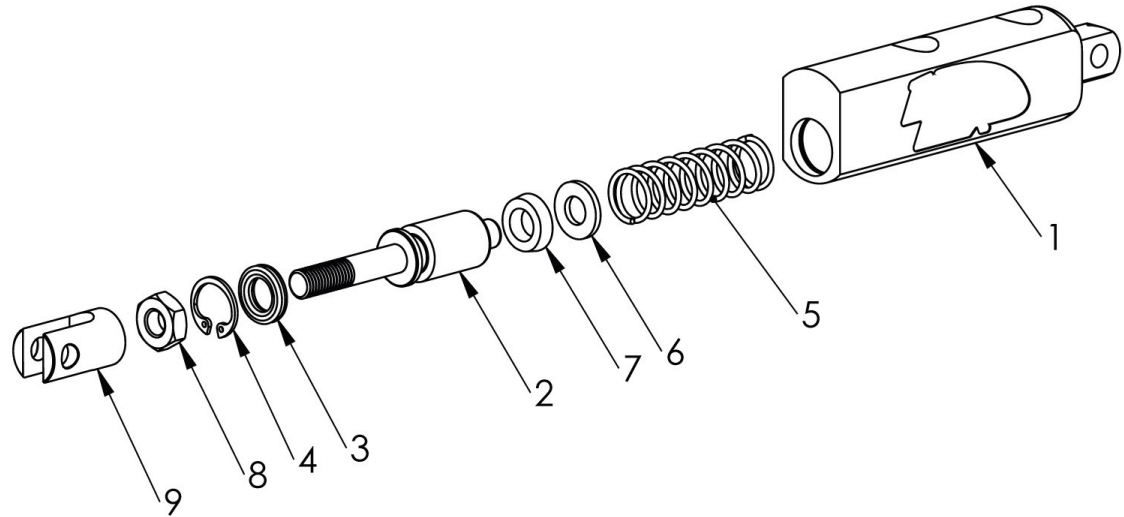
↑

3

2

↑

1



Note:

The pipe threads for this fitting (Item 5) must be sealed with Teflon tape or pipe sealant.

Notice: Item 4 (bleeder screw) must be located in the top position to assure all air is bled from the system. Use item 8 (Bleed screw hole plug) to plug of the other two bleeder screw locations. These locations are used in cases where the caliper needs to be mounted 90 degrees left or right.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	44960	Master cylinder, multi-function	1
2	44961	Master cylinder piston, multi-function	1
3	44749	O-ring	1
4	44915	Snap ring	1
5	44761	Return spring	1
6	44777	Cup seal washer	1
7	44776	Cup Seal	1
8	HJNUT 0.2500-28-D-N	1/4-28 jam nut	1
9	44963	Rod clevis 1/4-28	1

Notes:

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL $\pm 1/8"$
 ANGULAR: MACH $\pm .5^\circ$ BEND $\pm 1^\circ$
 TWO PLACE DECIMAL $\pm .030$
 THREE PLACE DECIMAL $\pm .005$

MATERIAL

FINISH

DO NOT SCALE DRAWING



TITLE:

Master cyl./multi-function

Part #

44962

Qty Req'd

SCALE: 1:1.5 WEIGHT:

REV:

5

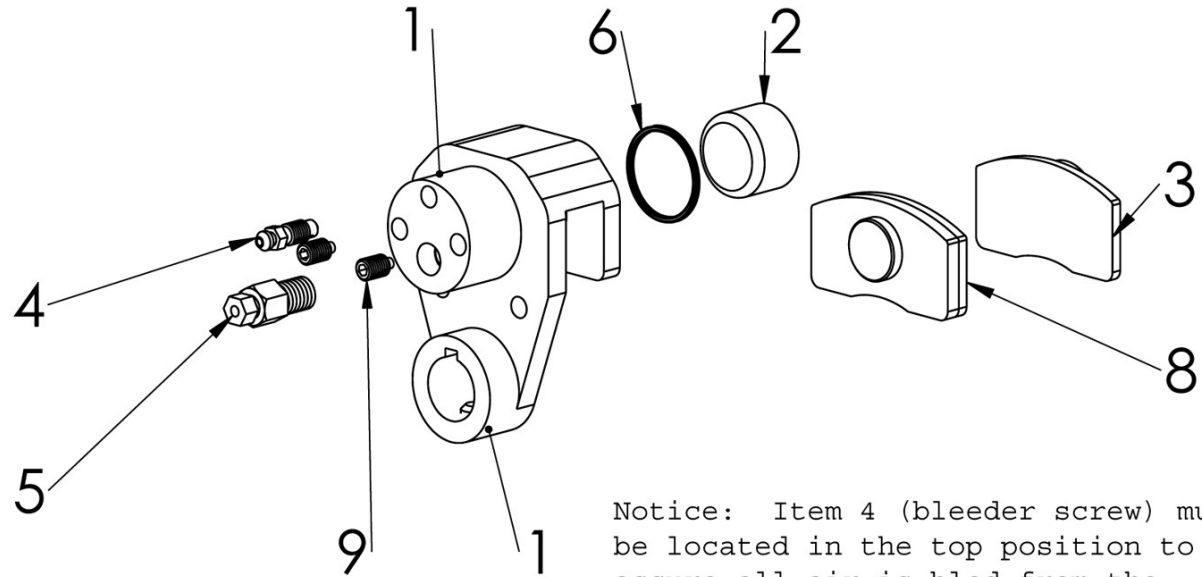
4

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2

1

The pipe threads for this fitting must be sealed with Teflon tape or pipe sealant.



Notice: Item 4 (bleeder screw) must be located in the top position to assure all air is bled from the system. Use item 9 (Bleeder Screw Plug) to plug off the other two bleeder screw locations. These locations are used in cases where the caliper needs to be mounted 90 degrees left or right.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	44851	caliper housing	1
2	44740	Caliper piston	1
3	44753	Outer brake pad	1
4	44767	Bleeder screw	1
5	44756	1/8" NPT to 1/8" tube compression fitting	1
6	44765	Quad ring seal	1
7	51035	Set screw 5/16-16	1
8	44931	bonded brake pad	1
9	44827	Bleeder screw hole plug	2

TITLE:
BX-1000 .75" caliper assembly

Part #
44904 Qty Req'd

SCALE: 1:2 WEIGHT: REV:

Notes:

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/8"$
ANGULAR: MACH $\pm .5^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .030$
THREE PLACE DECIMAL $\pm .005$

MATERIAL

FINISH

DO NOT SCALE DRAWING



5

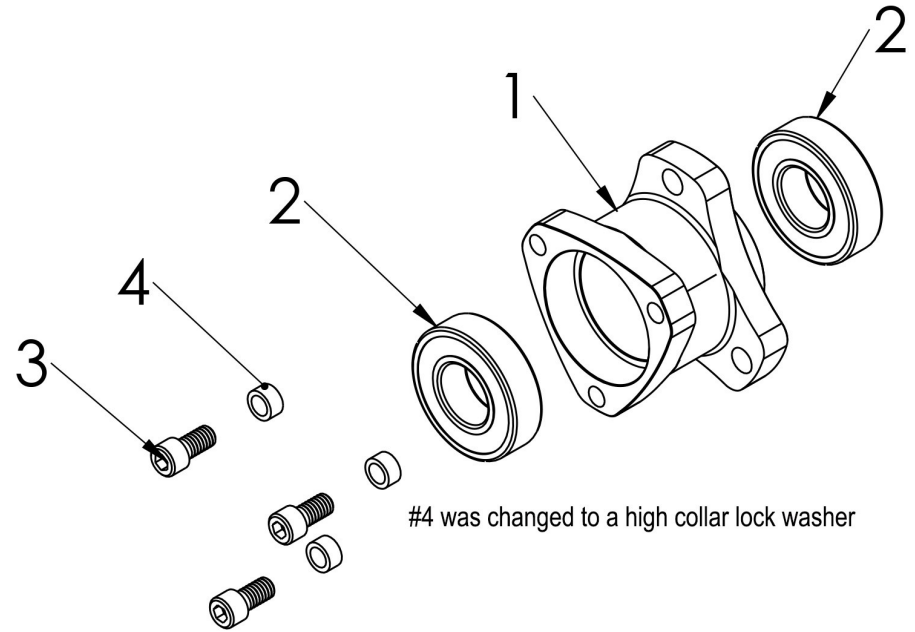
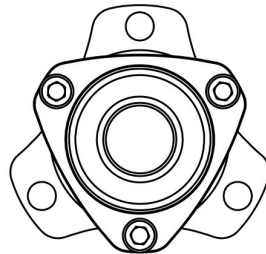
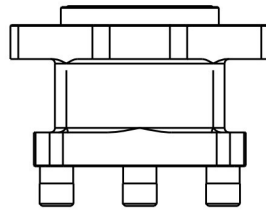
4

3

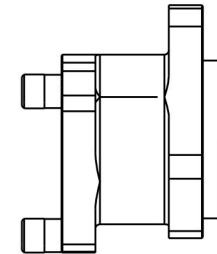
2

1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	44855	Wheel hub 3/4" axle	1
2	44900	3/4" sealed ball bearing	2
3	44972	1/4"-20 X .5 SHCS	3
4	44989	High collar lock washer	3



#4 was changed to a high collar lock washer



TITLE:		Wheel hub assembly	
Part #	44901	Qty Req'd	
SCALE: 1:2	WEIGHT:	REV:	

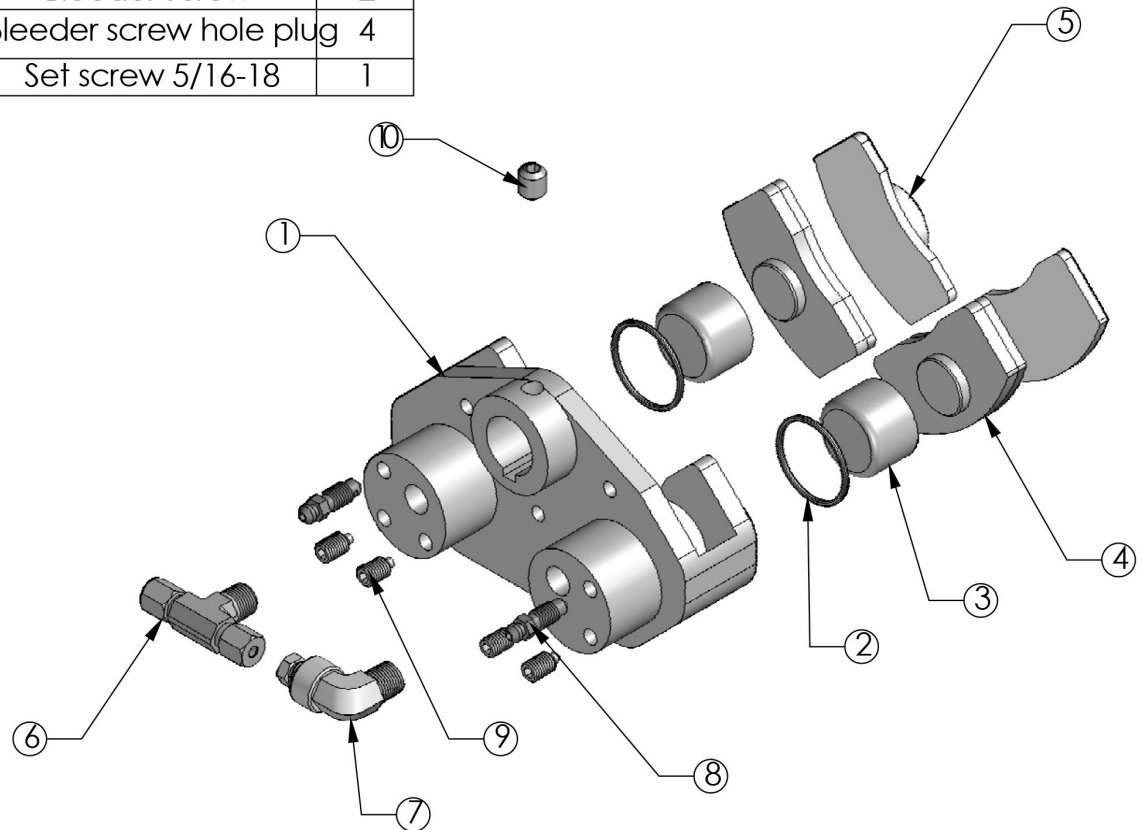
Notes:

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL $\pm 1/8"$
 ANGULAR: MACH $\pm .5^\circ$ BEND $\pm 1^\circ$
 TWO PLACE DECIMAL $\pm .030$
 THREE PLACE DECIMAL $\pm .005$

MATERIAL
 FINISH
 DO NOT SCALE DRAWING



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	44994	DOUBLE CALIPER HOUSING	1
2	44765 caliper quad ring	Quad ring seal	2
3	44740 Caliper piston	Caliper piston	2
4	44931 inner brake pad bonded	bonded brake pad	2
5	44753 Outer brake pad	Outer brake pad	2
6	44999	BRANCH TEE	1
7	44840	Brass Compression, elbow	1
8	44767 bleeder screw	Bleeder screw	2
9	44827 bleeder screw hole plug	bleeder screw hole plug	4
10	44757	Set screw 5/16-18	1



Notes:

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL $\pm 1/8$ "
 ANGULAR: MACH $\pm .5^\circ$ BEND $\pm 1^\circ$
 TWO PLACE DECIMAL $\pm .030$
 THREE PLACE DECIMAL $\pm .005$

MATERIAL
 VARIES
 FINISH
 NONE

DO NOT SCALE DRAWING

TITLE

DUAL CALIPER ASSEMBLY

Part #

44998

Qty Rec'd

SCALE 1:8

WEIGHT:

REV: A

5

4

3

2

1

1. Mount Tire *(See Split Rim Section for Mounting Split Rims)*

Apply soapy water to edge of tire bead and wheel rim. Apply the tire to the rim and spread it apart. Connected to the air chuck to valve stem and with the air flowing into rim pinch the ends of the tire to spread the bead of the tire until the tire seats and pops on to the bead on both sides. Inflate to desired pressure. Note the stock tire is a 4.00-6 tire that is installed on both the 4" and 6" wide rims. See the installation videos on our website for more info (www.flyfbi.com/html/hydraulic_brakes.html)



2. Mount Hub To Wheel

Attach the hub to the wheel on the opposite side of valve stem with supplied hex headed bolts. Apply the flange nuts to the back side of hex headed bolts to secure hub to wheel.

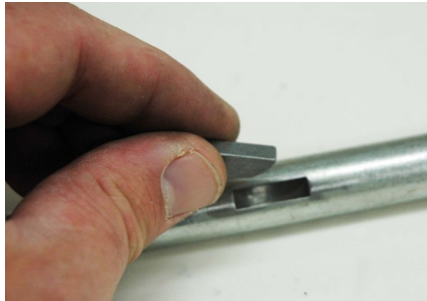
Note: Make sure to insert lock washers under the bolt head



3. Mount Axle to Frame

Tap woodruff key into the axle and attach the supplied 5/8" axle to your frame. *(Note the caliper can be mounted vertical or horizontal by locating the bleeder screw at the highest location (plugging the other two with the supplied plugs)* Locate the desired position of the axle before drilling the axle.

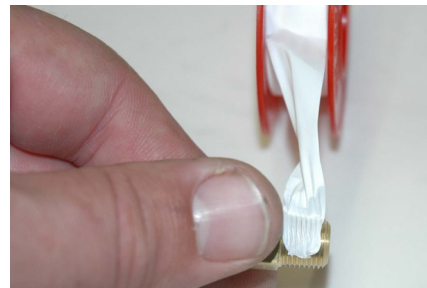
(Note: You may need to fabricate your own mounting system or contact FBI for custom made mounting hardware.)



4. Apply Sealant To Fitting

Apply either loctite sealant or Teflon tape to the straight thread of the compression fitting. Rap the tape in the direction shown in the picture or use loctite 592 thread sealant instead of the tape.

Note: sealant is not used on the plugs or the bleeder screw



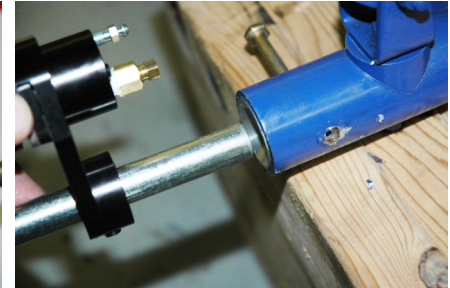
5. Install Caliper Hardware

Tighten down the bleeder screw plugs into the opposite holes of where you are going to locate your bleeder screw at the highest position of the piston. When the plugs are inserted the nylon tip will form to the shape of the seat. *(Do not over tighten)*



6. Install Caliper to Axle

Tighten up the compression fitting and insert the caliper on to the axle and slide it over the woodruff key. *Make sure you use sealant on the pipe thread side of the fitting. Teflon tape or loctite thread sealant.*



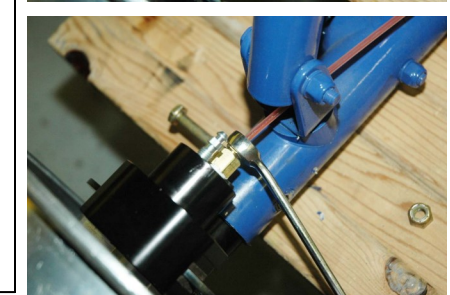
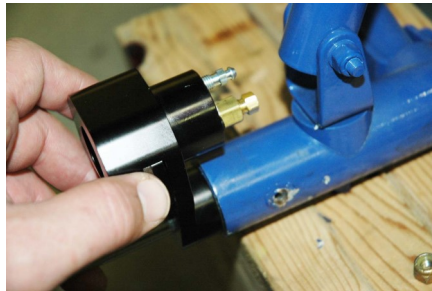
7. Install Brake Line and Compression Fittings

Secure the caliper to the axle by tightening the set screw located at the bottom of the caliper. Connect the straight compression fittings to the calipers and master cylinder making sure to use either Teflon tape or loctite thread sealant on the pipe threads only. You do not need to seal the threads on the bleeder screw, bleeder screw plugs, or the compression fitting threads, just the pipe threads going into the caliper and the master cylinder. Using the "T" connector, route the brake line and connect both calipers to the master cylinder by inserting the brake line about 1/2" through the male compression fitting into the female fitting keeping the line inside fitting as far as it will go and then tighten the ferrule part of the fitting finger tight and then 1-3/4 more turns.

Note: On the straight compression fitting the ferrule will break free from the male compression fitting once it has been tightened and crimp on to the brake line. The TEE compression fitting will also crimp on to the brake line after the nut has been tightened. It is a good idea to lube the ends of the tubing by dipping them in the ATF fluid before inserting into the compression fitting.

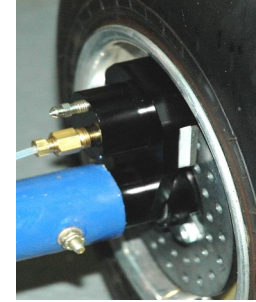
Important: Install the AN10 washer between the hub assembly and the caliper. This will prevent the hub from rubbing against the caliper and will provide the proper spacing for the rotor. Route the line between the calipers and the TEE keeping the distance as short as possible.

Make sure to use Teflon tape or pipe sealant on pipe threads going into the caliper



8. Insert The Rotor

Slide the rotor over the axle and between the pads in the caliper. Hold it there while sliding the wheel hub assembly on to the axle.



9. Mount the Wheel

Slide the wheel on to the axle and locate the pins (Socket Head Cap Screws) on the Azusa adaptor to the holes on the rotor. Slide the wheel up tight and make sure the pins are still located in the holes of the rotor.



10. Secure the Locknut

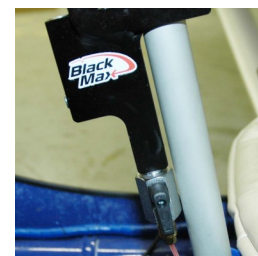
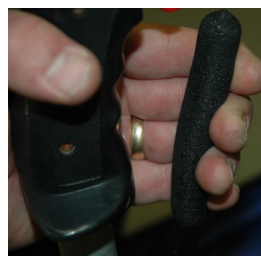
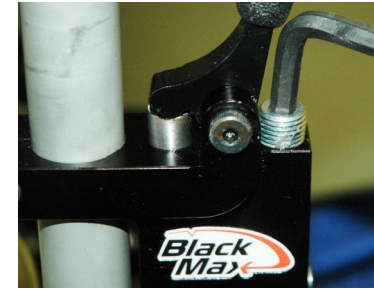
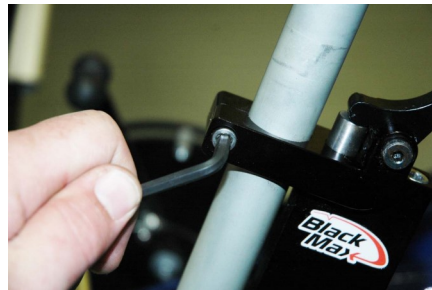
Tighten main axle nut up slightly snug and back it up 1/4 turn or until wheel spins freely.

Note: This rotor is a full floating rotor and does not have any other mounting hardware to fasten to the wheel hub.



11. Mount Master Cylinder

Slide Master cylinder over 1" control stick locating the brake handle forward and secure by tightening the clamp screw. Remove reservoir plug and fill the chamber with Hydraulic Fluid or ATF fluid. Crack the bleeder screw and bleed the air from the lines and caliper. Note you will need to add more oil after every 2 pumps. Continue until all the air is gone and hold pressure on the handle and retighten the bleeder screw. Repeat this for the other caliper. Once you have bled the system leave the oil level below the depth of the plug to prevent seepage when reinserting the cap.



Black Max Split Rim

Assembly Instructions

Apply a thin layer of grease to the both halves of the split rim.



Grease to the O-Ring and align the spacer plate with the holes in the rim



Insert hub bolt and lock washer through the front side of the rim half
(The half with the valve stem) and O-Ring spacer plate



Apply soapy water to both sides of the tire bead and insert front half and back half of the rim together using the 3 hub bolts. Insert hub bolts from the valve stem side.



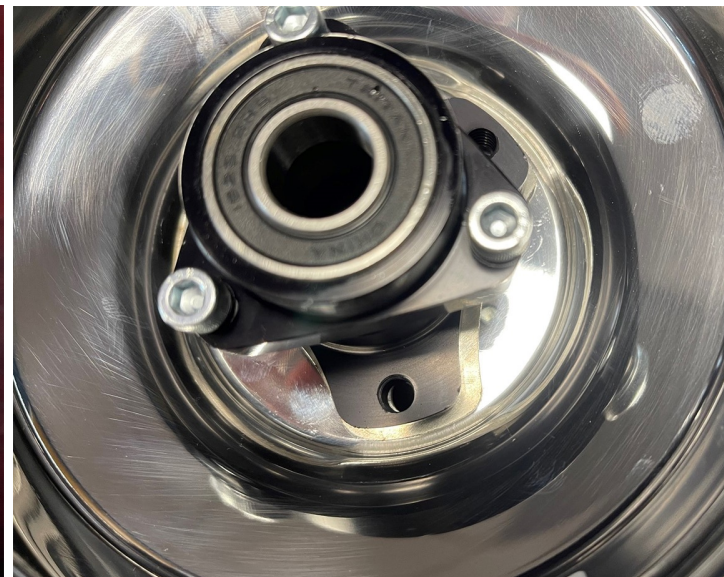
Tighten the bolts to the hub attach the flange nuts to the excess thread protruding from the back of the hub to secure the hub bolts for safety.



Use a ratchet strap to help seal the bead. Apply air pressure and release the strap as the bead begins to seal before there is too much pressure on the strap



In 2021 we were unable to get our standard one piece welded rims that we have supplied since we started, however, we were able to source a new wheel that is very close but has a .500" deeper inside half then our standard rim. This did not leave quite enough clearance for our caliper so with this rim we have to use the supplied hub spacer (59120) to push the hub away from the wheel .125". This will give enough clearance for the caliper to assure it will not make contact with the rim.



WARRANTY

**1 YEAR LIMITED WARRANTY ON ALL PARTS ONLY
UNDER CONDITIONS OF NORMAL AND INTENDED USE.
MISUSE, DAMAGE OR ALTERATION OF ANY
COMPONENT VOIDS THE WARRANTY.**

**BRAKE PADS AND ROTORS ARE EXCLUDED FROM
WARRANTY**

**USE OF ANY OTHER FLUID OTHER THAN ATF FLUID
VOIDS THIS WARRANTY.**

**NO OTHER WARRANTIES WRITTEN, VERBAL, IMPLIED
OR OTHER THAN LISTED HERE WILL BE HONORED.**



**1380 LEGION ROAD
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Website: www.flyfbi.com
Email: salesdept@flyfbi.com**