

INFERNO

FURY FLURRY

INSTALLATION and MAINTENANCE Instructions

PATENTED RACING CLUTCH ** PAT. NUMBER 6,857,515 **

These instructions cover both the Fury Kart racing clutch and the Flurry Snowmobile racing clutch. The difference between the two models is the drum. The kart racing drums have holes for air flow and heat dissipation. The snowmobile racing clutch uses a solid drum that prevents excessive chain lubrication from entering the clutch. The parts are interchangeable between the designs.

This clutch is a two (2) piece mechanism. There is a potential that if the clutch is not assembled or installed properly that serious injury can occur. It is VERY important that you follow all the directions for proper clutch installation. Visit www.infernoclutch.com for more information.

***** For best results, perform the following weekly maintenance *****

- 1. Drum & Sprocket:** This area will get contaminated with oil, dirt, and other debris over time. Spray some WD-40 on a rag and wipe the inside of the drum. Wipe out as much dirt and debris as possible. The area where the drum and the shoes make contact is the heart of the clutch. A nice, clean, smooth surface provides the best consistency from race to race. Do not clean the drum with acetone, starting fluid, or carburetor cleaner. These cleaning fluids will remove all of the oil and will cause the clutch to become aggressive during engagement. A small amount of oil residue will give a more consistent coefficient of friction and longer clutch life. If the drum is galled and not smooth then you can sand the inside of the drum with fine sandpaper. Clean the drum I.D. with WD-40 after sanding.
- 2. Shoes:** Spray some WD-40 on a rag and clean the outside of the shoe. Do not clean the shoes with acetone, starting fluid, or carburetor cleaner. These cleaning fluids will remove all of the oil and will cause the clutch to become aggressive during engagement. A small amount of oil residue will give a more consistent coefficient of friction and longer clutch life.
- 3. Bushing:** Spray some WD-40 on a rag and clean the outside of the bushing. Apply one small drop of oil to the outside of the bushing. We recommend a lightweight oil. Do NOT use grease, never-seize, or lubricants containing Teflon. Do NOT excessively lubricate the bushing. Excessive lubricant will end up inside the drum. Only a small drop is needed. Centrifugal force and heat will cause some oil to come out of the pores of the bushing and it automatically lubricates the bushing during operation. Do NOT clean the bushing with acetone, starting fluid, or carburetor cleaner. The bushing is oil impregnated at the factory and these cleaning fluids will dissolve all of the oil out of the pores of the bushing. Do NOT put the bushing on a rag, paper, cardboard, or other porous surface because the oil will wick out of the bushing. The bushing must be wrapped in plastic or placed in a plastic bag for storage.

**Following these instructions will give you long life
and the best performance out of the clutch.**

CLUTCH ASSEMBLY:

Shoe Installation:

- Shoes are to be placed on the driving lugs of the hub (See illustration on page 4).
- Shoes should fit loosely on these lugs, and be able to slide freely on them.

Spring Installation:

- Use External Snap Ring Pliers to spread the springs apart for easy installation. DO NOT stretch the springs any further than necessary for installation.
- If mismatching springs, make sure similar springs are opposite one another in the assembly, keeping the clutch balanced. (see tuning section)

Sprocket Installation:

- Insert the sprocket into the drum.
- Using external snap ring pliers, place the bowed snap ring into the groove on the sprocket. Because the snap ring is bowed there are two sides. Make sure the side marked "A" in the following picture is away from the drum. Side "B" is toward the drum. The bowed snap ring keeps the sprocket tight in the drum.



Bushing:

- Oil the bushing with one small drop of lightweight oil. Wipe off excess oil before installing into the sprocket. The bushing is installed from the inside of the drum. The ears of the bushing will be inside the drum when properly installed (See illustration on page 4).

Clutch Installation: Inboard mounting (sprocket closest to the engine) is recommended unless using a small sprocket that requires outboard mounting.

- Slide the 3/4" I.D., 1-1/8" O.D. washer (part # 8444-22-009) onto the crankshaft until it hits the shoulder. This washer is used because some engines have a small shoulder or large radius on the shoulder that is not large enough in diameter to retain the sprocket.
- Slide the bushing/sprocket/drum assembly onto the engine shaft. You will have to line up the key in the bushing with the keyway on the engine shaft.
- Slide on the hub/shoe/spring assembly on the engine shaft. The key in the hub will need to be lined up with the keyway on the crankshaft to get the clutch to slide on completely. Make sure the shoes and springs are inside the drum and the cover is toward the outside of the clutch. You should be able to read the warning information on the face of the cover when it is assembled properly (see illustration on page 4). The shoes should be fully enclosed under the drum when installed properly. Please contact your clutch dealer if you are not sure if it is assembled correctly. Improper assembly can cause serious injury or death.
- The crankshaft should be approximately 1/32" longer than the clutch assembly. This will make sure the clutch has some free end play to move. You must not clamp tight against the clutch with the bolt and retaining washer or the bronze bushing will fail (Note: If you are using the Bully conversion kit, you can clamp tight against the clutch because the bronze bushing is not used with the conversion kit). After the bolt and retaining washer is tight you should be able to move the clutch hub back and forth 1/32" (about the thickness of a business card). If the gap is too large, then remove the clutch and place appropriate spacers (part # 8444-22-009 can be purchased as needed) on the engine shaft, and re-install the clutch following the same instructions. If the clutch is longer than the shaft then remove the bolt and retaining washer and place the necessary amount of 5/16" washers on the bolt so the retaining washer will clamp the 5/16" washers against the face of the shaft instead of the hub. These washers need to fit inside the I.D. of the hub and are meant to create a gap between the clutch retaining washer and the hub.
- Recheck your measurement for end play. You do not want to have the clutch clamped tight, nor do you want too much room for it to move. This step is critical, and needs to be confirmed.

****IMPROPER INSTALLATION/ASSEMBLY CAN RESULT IN SERIOUS INJURY****

For any additional support visit www.infernoclutch.com or contact your dealer.

INFERNO TUNING :

**** The most important tuning tip is to keep the clutch BALANCED****

Heavier springs = higher engagement speed

Weaker Springs = lower engagement.

****Springs Available from Heaviest to Lightest****

****Speeds are listed as the point at which the shoes touch the drum, NOT LOCK UP RPM****

Black – 8443-35-006-A – 3000 RPM

White – 8443-35-005-A – 2300 RPM

Yellow – 8443-35-004-A - 2000 RPM

Orange – 8443-35-003-A – 1800 RPM

Red – 8443-35-002-A – 1200 RPM

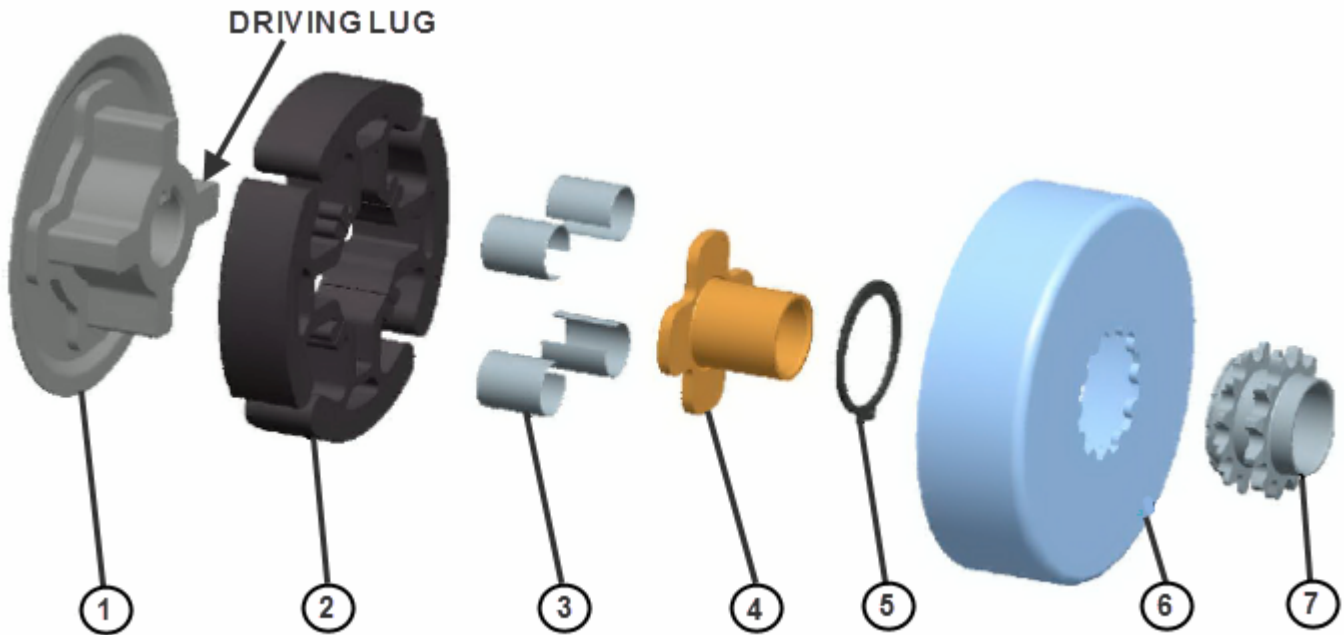
Green – 8443-35-009-A – 830 RPM

Visit www.infernoclutch.com to download the complete engagement speed chart.

1. Springs can be alternated. For example, reading around the clutch, white black white black, or any combination of colors. Keep balance in mind. As long as the springs that are opposite one another are of the same color, balance is retained.
2. All of the components within this clutch interchange with the Blaze/Blizzard racing clutch. The Blaze and Blizzard racing clutches contain shoes that are tunable by adding/removing weights and by orienting in a leading/trailing shoe rotation. You can purchase the adjustable shoes for use in this clutch if you would like to upgrade your clutch with the unlimited tuning capability of the Blaze/Blizzard racing clutches.
3. Follow the recommended weekly maintenance for the best performance and longevity of this clutch.
4. Please contact your dealer with any questions that you have regarding installation or maintenance.



Hilliard
EXTREME DUTY
INFERNO
RACING CLUTCHES



| FURY / FLURRY | | |
|----------------------|-----------------|--------------------------------|
| Ref # | PART No. | DESCRIPTION |
| 1 | 8444-23-089 | 3/4" HEAT TREATED HUB w/GUARD |
| 2 | 8444-31-007-C | STEAM TREATED SHOE |
| 3 | 8443-35-002-A | RED SPRING (1200 RPM) |
| | 8443-35-003-A | ORANGE SPRING (1800 RPM) |
| | 8443-35-004-A | YELLOW SPRING (2000 RPM) |
| | 8443-35-005-A | WHITE SPRING (2300 RPM) |
| | 8443-35-006-A | BLACK SPRING (3000 RPM) |
| | 8443-35-009-A | GREEN SPRING (830 RPM) |
| 4 | 8444-15-002-B | BUSHING 3/4 (SHORT) |
| 5 | 1279-01-136-T | BOWED SNAP RING |
| 6 | 8444-13-100 | STAMPED DRUM w/o HOLES (SHOWN) |
| | 8444-13-099 | STAMPED DRUM with HOLES |
| | 8444-9U-024 | BULLY CONVERSION KIT |
| 7 | 8444-47-XXX | SPROCKET |
| | #35 CHAIN | 11-23 TEETH AVAILABLE |
| | #219 CHAIN | 16-22 TEETH AVAILABLE |
| 8 | 8444-22-009 | WASHER (NOT SHOWN) |