



REKLUSE[®]

EXP[™]

REKLUSE MOTOR SPORTS

The Rekluse EXP Kit for Yamaha YXZ1000R

INSTALLATION & USER GUIDE

Doc ID: 191-1004A

Doc Rev: 011216

WHAT YOU NEED TO KNOW

- Read the separate included Safety Information document before operating the vehicle with the product installed.
- If you are performing the installation of this product for a customer or another person, instruct them to read the Safety Information document and the Installation and User Guide before operating the vehicle with the product.
- Install the included safety warning labels as directed in this document so any potential vehicle operator is made aware of the installation of this product.
- Be sure to wear proper eye protection and hand protection.
- Read this entire document before performing any steps, so you will know what to expect.
- Use clean, quality JASO MA certified Yamalube oil designated for the YXZ1000R clutch.
- When reinstalling components, use the torque specifications found in your Yamaha service manual. Torque values listed are valid as of the date shown in the document revision number above.
- Do not leave the vehicle idling in gear while in operation. If this is done, clutch damage can result and/or the control unit will activate the warning light associated with code 42.

INSIDE THIS DOCUMENT

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- FREE PLAY GAIN & BREAK-IN
- TROUBLESHOOTING
- SHIFTING AND OPERATION
- MAINTENANCE AND BUMP STARTING

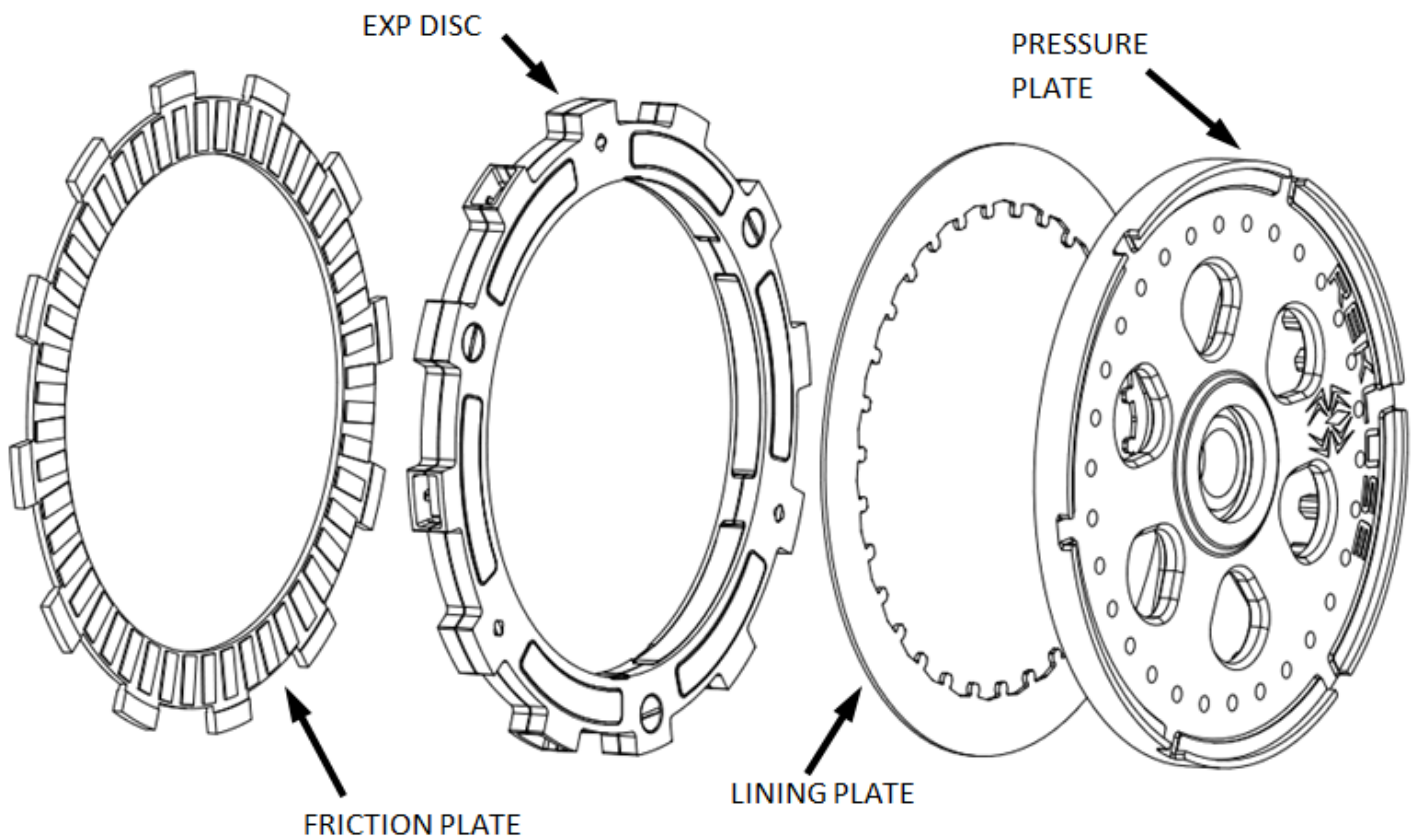
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Rekluse Motor Sports, Inc.
12000 W Franklin Rd
Boise, Idaho 83709
208-426-0659
support@rekluse.com

TOOLS NEEDED

- Metric socket set
- 4mm Allen key
- Torque wrench
- Metric open-end wrench set
- Hydraulic brake fluid (DOT 4)
- Feeler gauges (2 sets)
- Safety glasses
- Protective gloves
- Flashlight/shop light
- Magnetic stick (2)

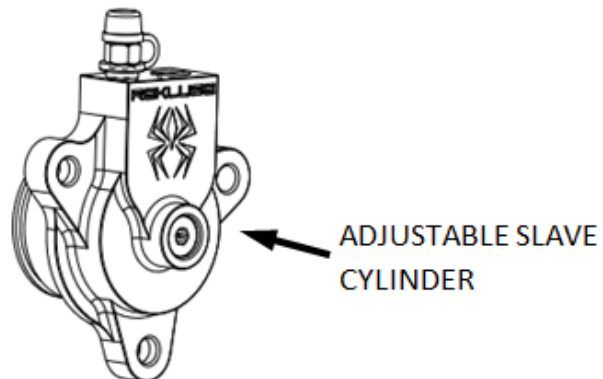
INCLUDED PARTS

Visit Rekluse.com/support for a full parts fiche illustration and a listing of specific part numbers.



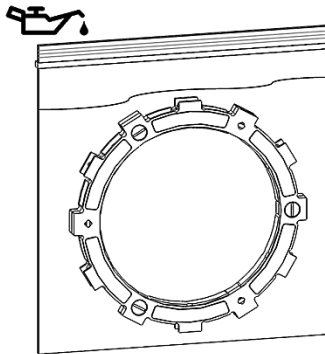
***INCLUDED ITEMS NOT SHOWN IN PICTURE:**

- SLAVE CYLINDER GASKET
- CLUTCH COVER GASKET
- BANJO BOLT CRUSH WASHERS



PREP & DISASSEMBLY

1. Soak the EXP disc **and** included friction plate in engine oil for at least 5 minutes.



2. Drain oil from the clutch area of the engine. Refer to vehicle service manual for instructions.

3. Remove the clutch cover bolts and clutch cover. Refer to vehicle service manual for instructions.

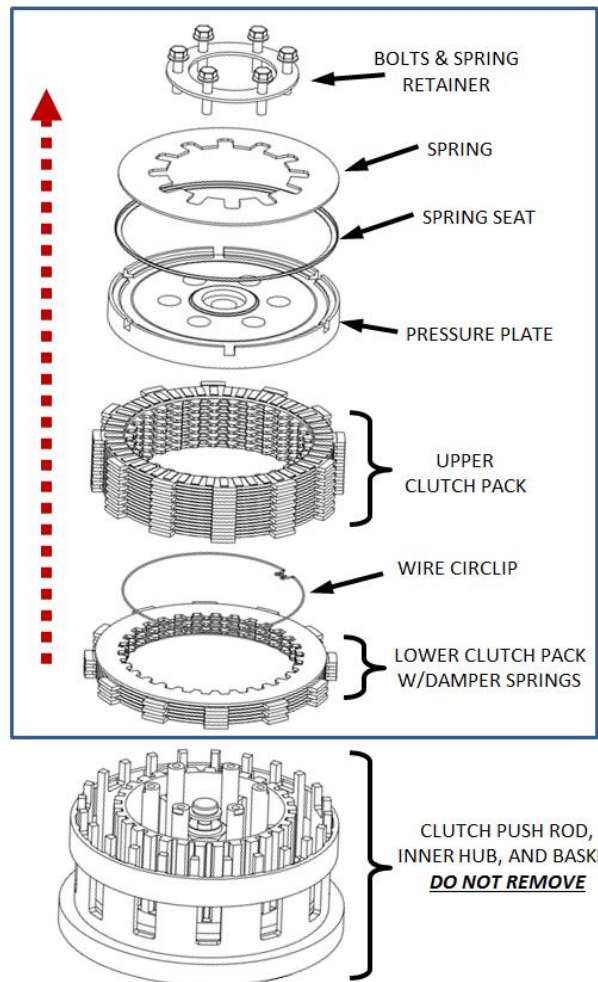
To provide access to the clutch cover and slave cylinder (clutch release cylinder) requires removal of the driver seat, passenger seat and center console body panels.

NOTE: The bolts along the bottom of clutch cover also have copper crush washers. Be sure to reinstall them with respective bolts in proper locations.

4. Referencing the following figure, remove the stock parts enclosed in the rectangular box of the following diagram.

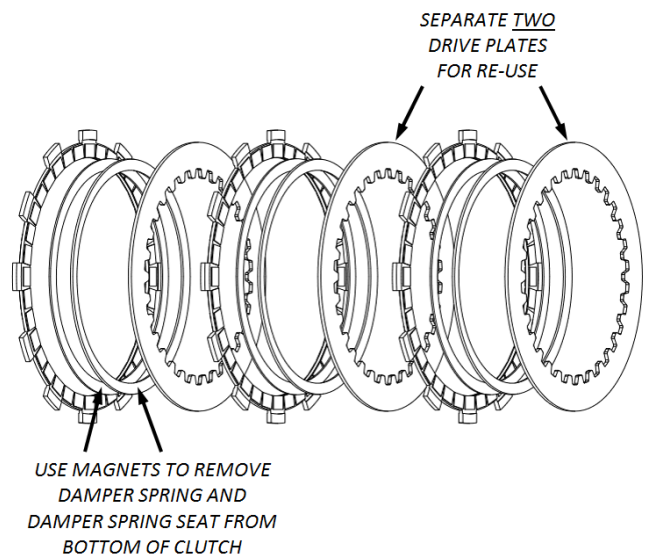
To remove the lower clutch pack you will need to remove the retention ring from the inner hub. To remove the retention ring, use needle nose pliers and/or picks. The retention ring will not be re-used.

The bolts, hold down plate, spring, spring seat, upper clutch pack, and two of the steel drive plates in the lower clutch pack will be re-used.



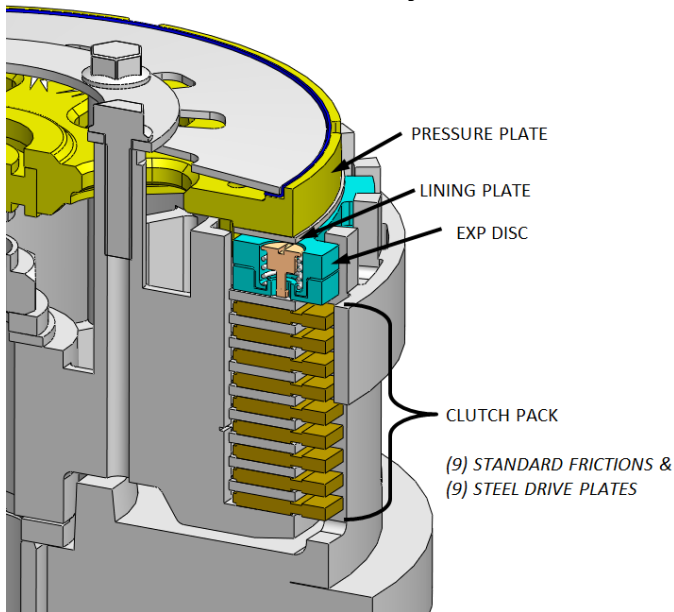
NOTE: Bolts, spring retainer plate, spring, spring seat, eight standard friction plates and nine steel drive plates will be re-used.

5. Separate two of the steel drive plates from the lower clutch pack for re-use.



CLUTCH INSTALLATION

Clutch Pack Cutaway Overview



1. Clutch Pack Installation:

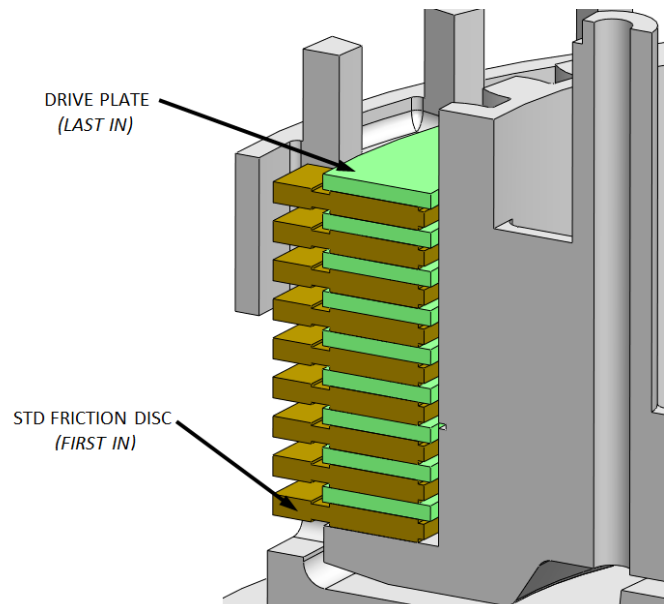
- a. Install the clutch pack onto the inner hub. The clutch pack consists of **nine** friction plates and **nine** steel drive plates.

Eight standard width friction plates are reused from the stock clutch pack. One standard width friction plate is included. Nine steel drive plates are reused from the stock clutch pack.

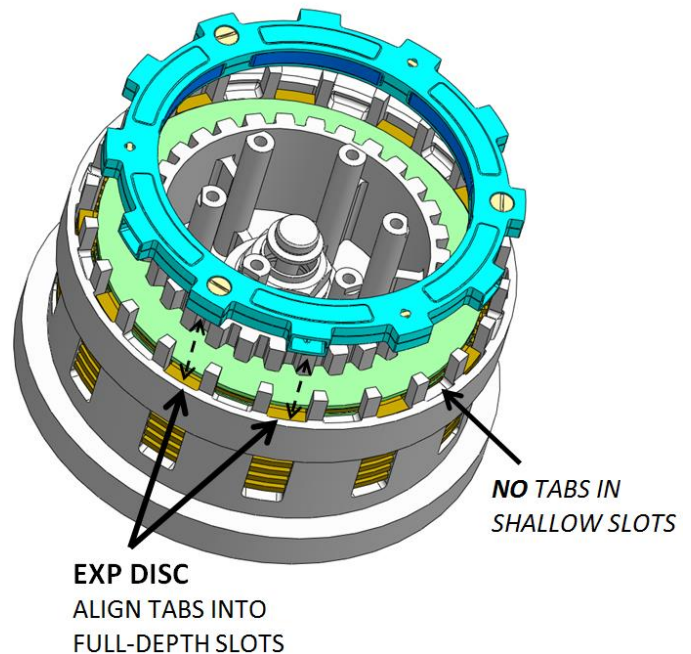
The first disc must be a friction disc, then alternate between steel drive plates and friction plates with the last disc installed being a steel drive plate. See following diagram.

NOTICE

Ensure damper spring and damper spring seat along with bottom narrow friction were removed as per step 5 of previous section. If these parts are still in place the installation cannot be completed properly.



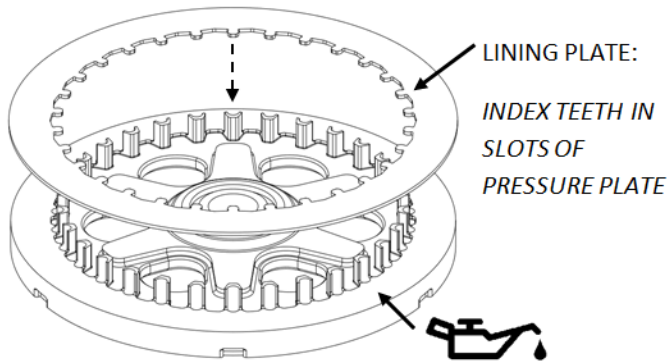
- b. Next, install the EXP disc on top of the last drive plate. This disc is symmetrical and can be installed with either side facing out. However, the **external tabs must align into the full-depth basket slots** with the other friction disc tabs.



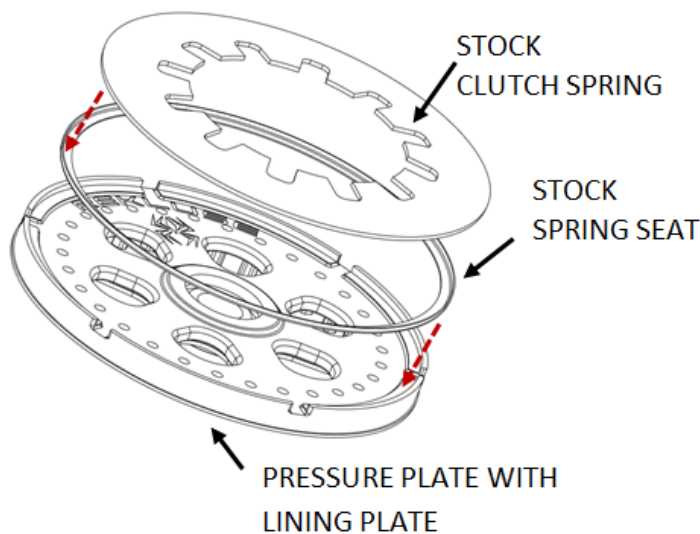
NOTICE

Failure to orient EXP disc and all friction plates properly with external tabs aligned into the full-depth basket slots will result in clutch damage.

- Place a thin layer of oil between the lining plate and the pressure plate. This will help hold the lining plate in place while installing the pressure plate over the clutch pack.

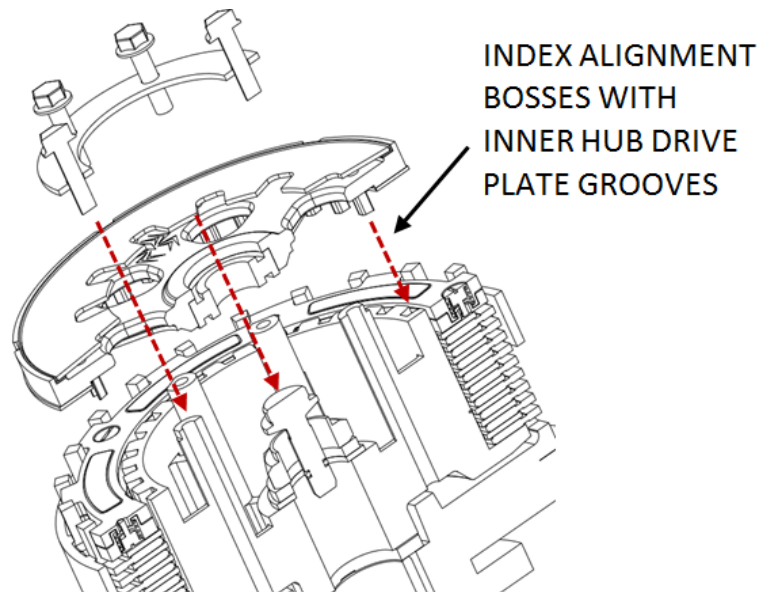


- While holding the pressure plate and lining plate together, place the stock spring seat into the top of the pressure plate followed by the spring.

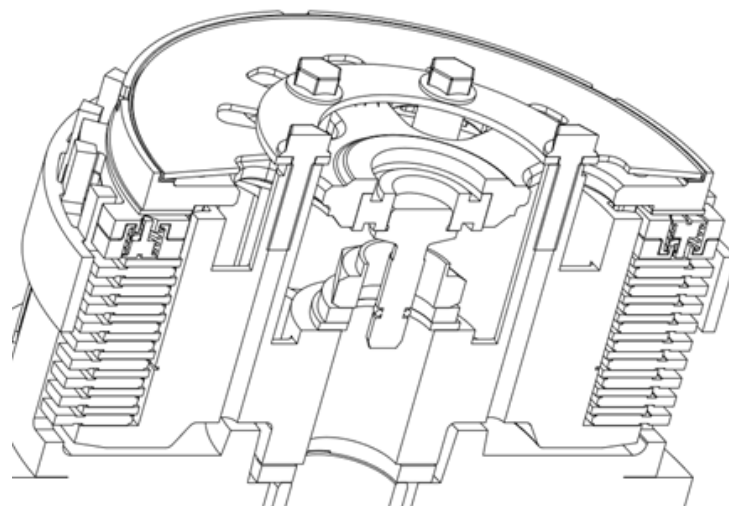


- Install the pressure plate with lining plate, spring seat and spring over the inner hub. Be sure to index the alignment bosses of the pressure plate into the drive plate slots of the inner hub and also index the push rod into the center of the pressure plate bearing.

While holding the pressure plate down against the clutch pack and inner hub, align the cutouts in the spring with the inner hub standoffs and install the spring retainer plate and six bolts. Thread the bolts in and tighten in alternating sequence to evenly compress the spring and position the pressure plate. Torque bolts to 8 Nm as specified in the Yamaha service manual.



Pressure plate installed



SLAVE CYLINDER INSTALLATION

Please read the entire section before beginning the process of installing the Rekluse slave cylinder.

⚠ WARNING

- When bleeding the hydraulic clutch system, fluid can squirt out from the slave cylinder port or master cylinder reservoir. Always be sure to wear eye protection and hand protection.
- Be sure to use the correct clutch fluid! DOT 4 brake fluid is specified in the vehicle's service manual. Other clutch fluids may cause the rubber seals to deteriorate, causing leakage and poor clutch performance.
- Refill with the same type of clutch fluid that is already in the system. Mixing clutch fluids may result in a harmful chemical reaction, leading to poor clutch performance.
- When refilling, be careful that water does not enter the clutch fluid reservoir. Water will significantly lower the boiling point of the clutch fluid and could cause vapor lock.

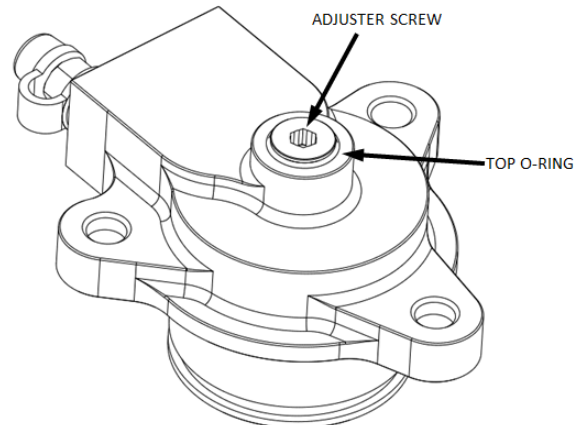
NOTICE

Clutch fluid may damage painted surfaces or plastic parts. Therefore, always clean up any spilled clutch fluid immediately.

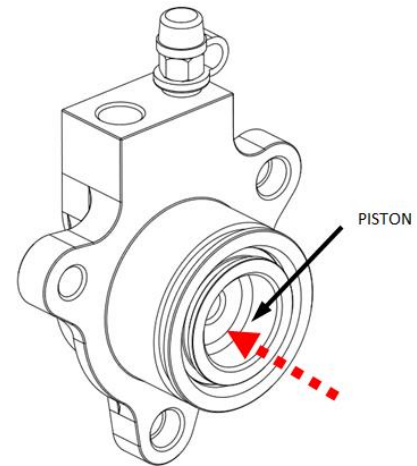
1. Bleeding the Rekluse slave cylinder:

On a workbench (away from the engine), bleed the Rekluse slave cylinder by this procedure:

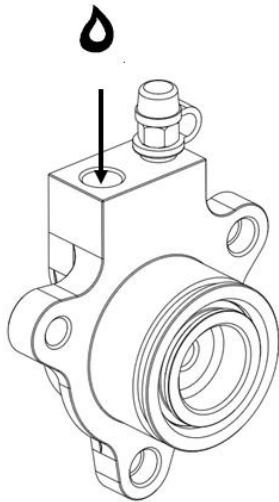
- a. Using a 4mm Allen key turn the adjuster screw counterclockwise until the top O-Ring of the adjuster screw is visible.



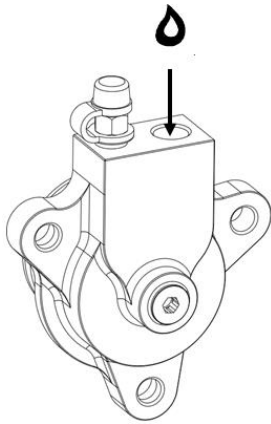
- b. Push the piston in until it bottoms against the adjuster screw.



- c. Pour clutch fluid into the banjo bolt port.

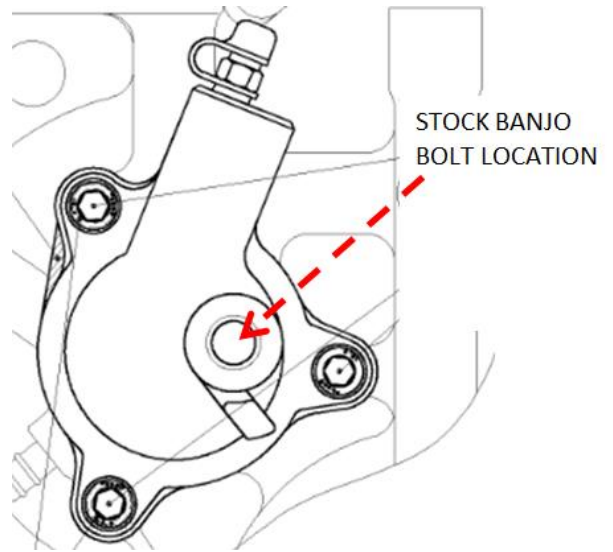


- d. Using a 4mm Allen key turn the adjuster screw clockwise (in) until it bottoms **under light pressure**, keeping the fluid topped off as you go.

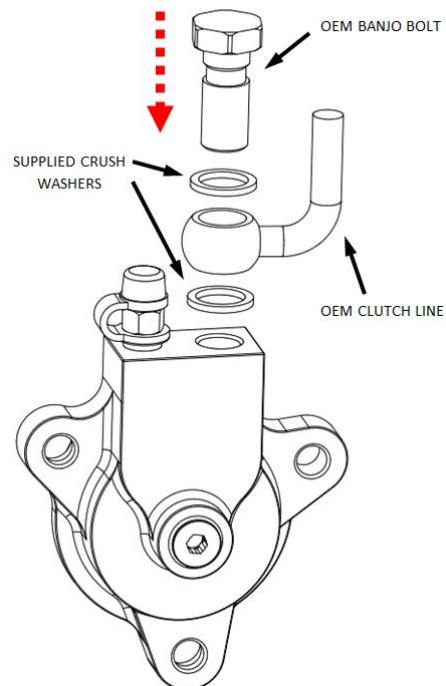


- e. Turn the adjuster screw counterclockwise to the initial position with the top O-ring visible while pushing the piston in keeping the piston against the adjuster screw.
- f. Repeat steps **a.** – **e.** until there is no longer air escaping from the banjo bolt port when the piston is compressed.
- g. When bleeding is complete, return the adjuster screw to the initial position with the top O-ring visible, and top off with fluid.

2. While leaving the stock slave cylinder (clutch release cylinder) attached to the engine, remove the Banjo Bolt and separate the clutch line from the stock slave cylinder.



3. Next, attach the clutch line to the Rekluse adjustable slave cylinder using the stock Banjo Bolt and the provided crush washers. Snug the banjo bolt with the unit in your hand. You will torque it to spec once installed on the vehicle.



NOTE: Performed quickly, this method retains the fluid inside the line and makes the final bleeding step much easier.

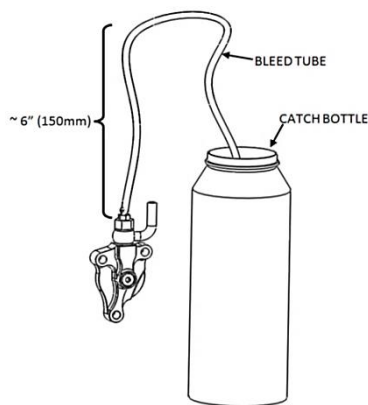
4. With the clutch line now attached to the Rekluse slave cylinder, remove the stock slave cylinder from the engine.
5. Remove the cap from the clutch master cylinder reservoir. Refer to vehicles service manual for instructions.

6. Mount the Rekluse slave cylinder with provided gasket to the engine using the stock bolts. Apply blue Loctite (medium strength thread locker) to bolts and torque to 10 Nm as per the specification found in Yamaha service manual.

7. Torque the banjo bolt to 27 Nm as per the specification found in Yamaha service manual.

8. Fill the clutch master cylinder reservoir with fluid as per the specification in the vehicle service manual.

9. Attach a suitable length of tubing to the bleed screw and loop it into a suitable catch bottle.

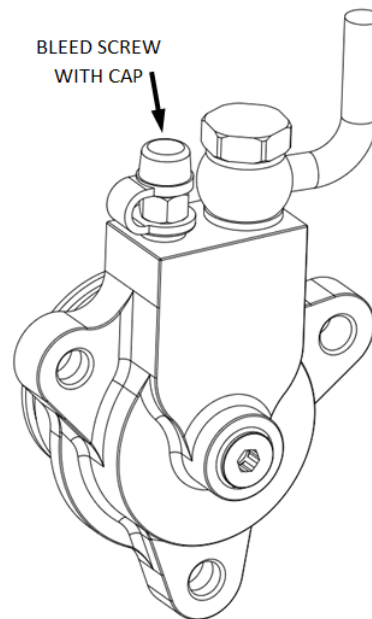


10. Pump the clutch pedal 3-5 times then hold it against the floor.

11. While continuing to hold the clutch pedal against the floor:

a. Loosen the bleed screw using an 8mm wrench. Air and fluid may flow into the bleed tube.

b. Tighten the bleed screw when pressure is lost.



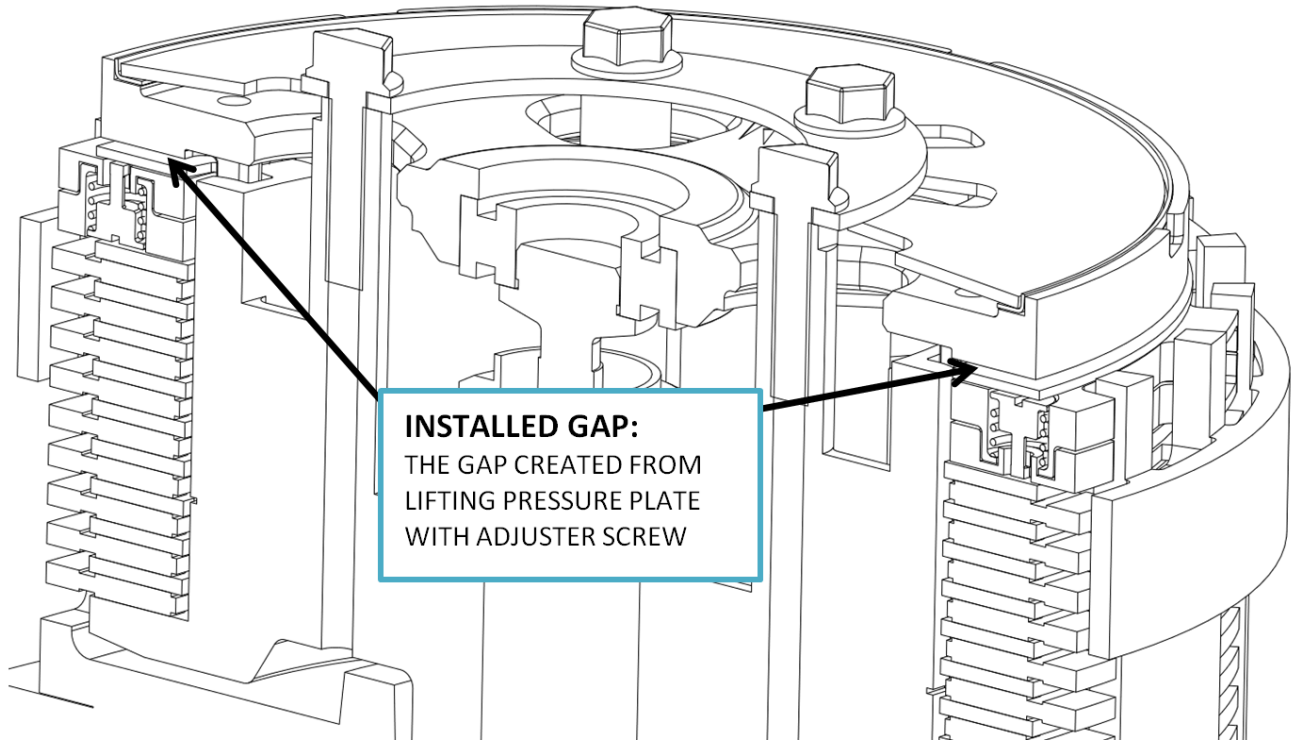
12. Slowly release the clutch pedal and check the fluid level in the clutch master cylinder. Fill if necessary.

13. Repeat steps 10 – 12 until air no longer comes out of the bleed port.

14. Finally, remove the bleed tube and place the cap over the bleed screw.

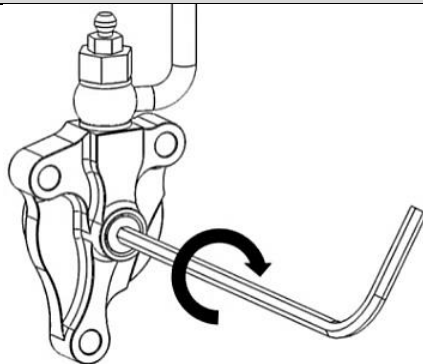
INSTALLED GAP SETTING AND MEASUREMENT

DEFINITION: the “**Installed Gap**” is the separation in the clutch pack created by the adjustment of the Adjuster Screw in the Slave Cylinder. This gap is what allows the clutch to spin freely until the desired RPM is reached for engagement; it must be set correctly for optimal performance.



1. Using the long end of a 4mm Allen key, turn the adjuster screw clockwise until it stops under light pressure. This is the “**starting point.**” You are trying to feel for the point at which the piston will start to lift the pressure plate from the adjuster screw pushing it.

NOTE: It may take a few tries to feel the **starting point.** You should feel a distinguishable change in turning effort at this point.



2. From the starting point, found in previous step, turn the adjuster in clockwise **1 turn + 6 marks.** *This results in 2 marks less than 1 and ½ turns.* This is NOT your final setting, but should allow you to get a gap measurement as per the following step.

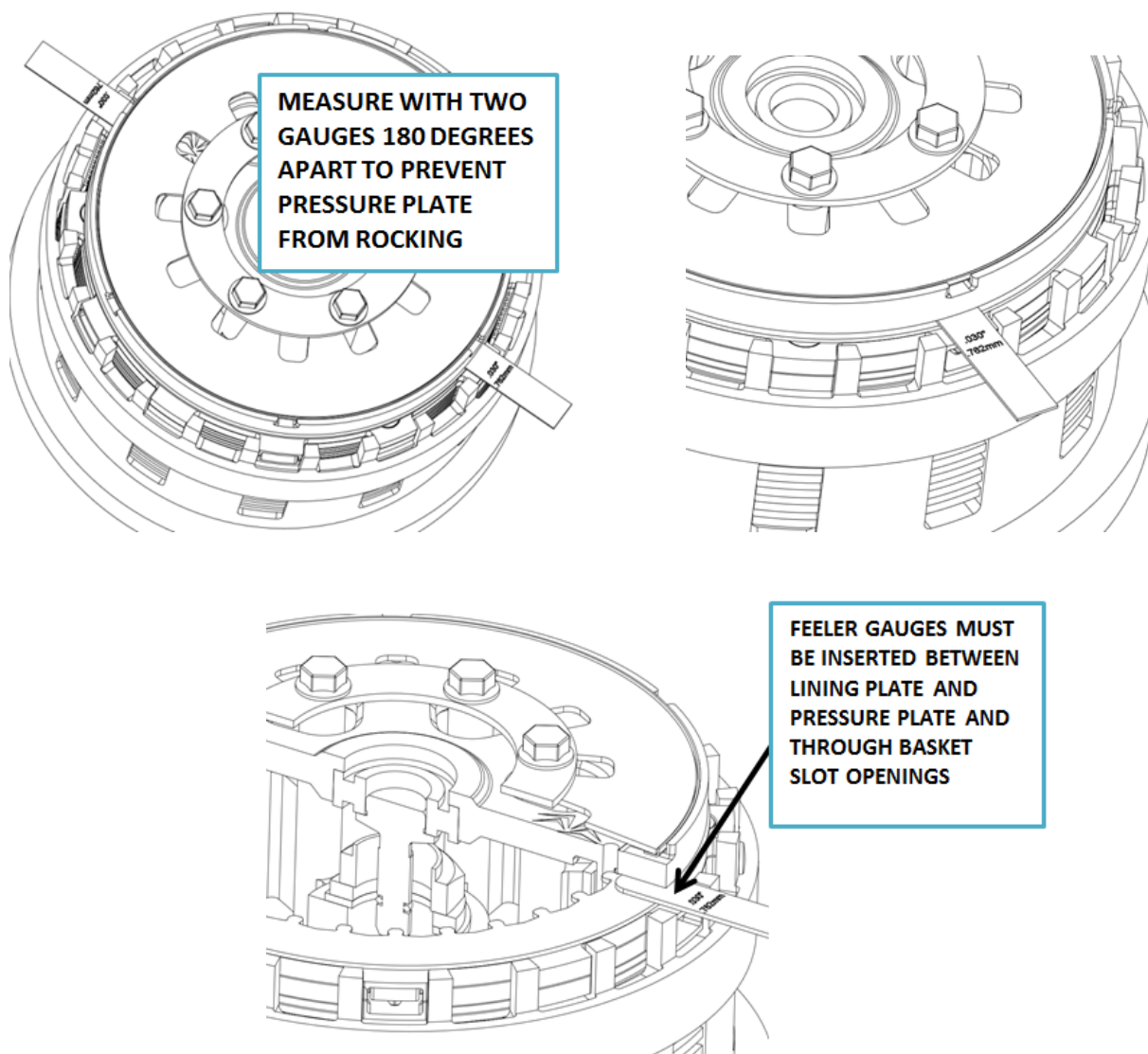
3. Measure the installed gap:

Use two sets of feeler gauges and simultaneously measure 180 degrees apart. Try to slide in .035" (.89-mm) gauges **between** the lining plate and pressure plate through the basket slots.

Note: You will need to push the lining plate off of the pressure plate flange down against the EXP disc in order to easily slide the gages in.

Turning the adjuster screw in (clockwise) increases the gap. Turning the adjuster screw counterclockwise will decrease the gap. Adjust the adjuster screw until you achieve a .035" (.89-mm) installed gap measurement. The gauges should have moderate drag when sliding in and out to signify proper measurement.

Note: Each tick mark engraved on the slave cylinder housing represents about .002" (.05-mm) of gap spacing change.

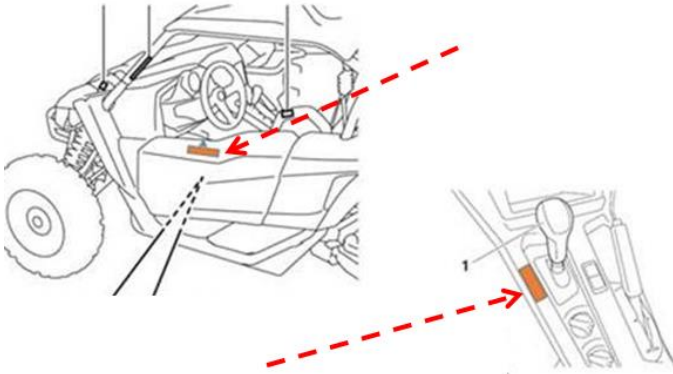


4. Check fluid level in clutch master cylinder reservoir and fill if needed. Reinstall the reservoir cap.
5. Install the clutch cover with supplied gasket and torque bolts to 10 Nm as per the specification found in the Yamaha service manual.

CLUTCH WARNING LABELS

1. Install the provided warning labels. The larger label needs to be placed on the door. The smaller label attaches to the shifter console.

Warning labels must be installed in positions specified and maintained in order to make vehicle operators aware that a Rekluse Clutch has been installed. Understanding the information contained in the safety information document included with this Rekluse clutch product is required prior to vehicle operation.



CHECKING FOR FREE PLAY GAIN

Pedal Free Play is the “normal slack” in the clutch pedal before it starts actuating the clutch. Applying light pressure to the pedal takes up this slack.

“Free Play Gain” is an increase of pedal free play caused when the auto-clutch engages. This happens when engine RPM increase from idle.

Free Play Gain is caused by the expansion of the EXP disc which lifts the pressure plate away from the throwout assembly. **A tighter installed gap setting results in more free play gain than a looser installed gap setting.**

An installed gap setting of .035” (.89-mm) yields approximately 1/4” (6mm) of free play gain when the engine is revved to at least 4000 RPM.

To check free play gain, read the following warning and then perform the following three steps:



Verify that the vehicle is in NEUTRAL before checking Free Play Gain. Failure to do so may result in the vehicle lurching forward, and loss of control and/or injury may result.

A Rekluse auto-clutch can make your vehicle appear to be in neutral when in gear, even when the engine is running and clutch pedal released.

Vehicles equipped with a Rekluse auto-clutch can move suddenly and unexpectedly and cause operators to lose control of vehicle.

To avoid death, serious injury, and/or property damage, always sit in the vehicle with seat belt/harness fastened to start it.

If the installed gap is set too tight excessive free play gain can allow the clutch to drag and remain engaged when the engine is accelerated while the clutch pedal is activated.

1. Place the vehicle in neutral, start the engine and let it warm up for 2-3 minutes.
2. Apply enough pressure to the clutch pedal to take up the normal pedal free play and perform the next step.
3. With the vehicle idling in neutral, quickly blip the throttle to rev the engine to at least 4,000 RPM and let it return to idle. **The clutch pedal should move in about 1/4” (6mm) toward the floor as you rev the engine while applying light pressure.** If you detect more than 1/4” (6-mm) of free play gain, you may not be able to fully override the clutch with the pedal at max engine speed (RPM).

Note: Free play gain may be difficult to feel initially. If you are having difficulty detecting proceed to break-in the clutch as directed in the next section. After break-in, see the “Free Play Gain Troubleshooting Guide” section of this document which follows the Break-in section next.

BREAK – IN

Follow these procedures for a new installation and any time new friction plates or EXP bases or wedges are installed.

1. Warm up the vehicle for 2-3 minutes.
2. With the vehicle in neutral rev the engine 10 times, being sure to let it **return to idle** between each rev cycle.
3. With the engine running, apply the clutch pedal and place the vehicle into first gear. Slowly release the clutch pedal. The vehicle should stay in place, perhaps with a slight amount of forward creep.
4. Now that the vehicle is idling in first gear, slowly apply throttle to begin moving and then release the throttle to come to a stop. To break in the clutch components, perform the following:
5. While in 1st gear accelerate moderately to approximately 5,000 RPMs and come to a stop—repeat this 10-15 times.
6. Now that the clutch is broken-in and the clutch is warm, shift the vehicle to neutral.
7. With the vehicle in neutral, re-check free play gain at your clutch pedal and adjust installed gap setting if necessary.

The installed gap typically increases by approximately .005" (.13-mm) after initial break-in.

Alternatively, you can re-measure the installed gap. The optimal post break-in installed gap setting is .040" (1-mm). **The optimal gap is typically achieved by adjusting the adjuster screw 1 and ½ turns from the starting point.**

NOTICE

Do not operate vehicle without sufficient free play gain, doing so correlates to an installed gap larger than .045" (1.14-mm). Operating the vehicle with too large of a gap can result in clutch damage due to excessive slipping.

Checking free play gain is easy and takes less than a minute to perform. For optimum performance and longevity, check free play gain when the vehicle is warm, prior to operation. Doing so will allow you to detect when an installed gap adjustment is needed to compensate for wear.

FREE PLAY GAIN TROUBLESHOOTING

Symptom:

- Clutch pedal moves in too far (too much free play gain)
- Clutch has excessive drag
- It is difficult to fully override the clutch with the pedal

Answer: Installed Gap is too small

Solution: Turn the Adjuster Screw inwardly (clockwise) to increase the Installed Gap. Each adjustment should be done in small increments – 1-2 tick marks at a time. After each adjustment, check free play gain until optimal free play gain is achieved.

Symptom:

- Clutch pedal does not move enough or does not move at all (too little free play gain)
- Clutch is slipping

Answer: Installed Gap is too large

Solution: Turn the Adjuster Screw outwardly (counterclockwise) to reduce the Installed Gap. It may be helpful to re-find the starting point.

The acceptable post break-in gap range is: .038" (.965-mm) to .044" (1.12-mm)

SHIFTING AND OPERATION

- Always use proper gear selection for the speed and situation whether accelerating or slowing down.
- When accelerating from a stop it is best to start in 1st gear in order to prevent excessive slipping of the clutch. Starting in too tall a gear repeatedly will prematurely wear out the clutch resulting in failure.
- Shifting without using the clutch pedal is possible with good timing similar to clutch-less shifting a manual clutch equipped vehicle.
- You can use the clutch pedal to fully over-ride the clutch at any moment. If you notice excessive clutch drag when the clutch pedal is engaged, the installed gap is too tight, or the hydraulic clutch system needs re-bled.
- Resolving code 42 warning light:
 - **Do not leave the vehicle idling in gear while being operated for any period greater than 1-2 minutes.** If the vehicle is left idling in gear for 5 minutes, the ECU will throw code 42 activating the associated warning light. If this occurs, you can reset the system by performing the following:

The ideal way to transfer code 42 into a past code is to drive the unit in 1st or 2nd gear for more than 5 minutes without depressing the clutch, shifting gears or coming to a stop. The engine warning light will shut off to indicate when the elapsed 5 minute time frame has been met.

NOTICE

When operating the vehicle to turn off the code 42 warning light, keep the RPM's low and be mindful of the temperature light so as to not overheat the vehicle. Once code 42 has been transferred to a past code then your YXZ1000R can be taken to an authorized Yamaha dealer to have the past code erased (if desired).

PARKING

Always engage the vehicle's parking brake to prevent the vehicle from rolling when unattended. With this product installed, the vehicle can now roll even when the transmission is in gear. Refer to the Safety Information document for more information.

⚠ WARNING

Rekluse auto-clutch-equipped vehicles may roll back unexpectedly.

Vehicle will move in gear with the engine off because the clutch is only engaged when engine speed is above the engagement RPM of the auto-clutch. Engine compression will not prevent parked vehicles from moving while in gear.

To avoid death, serious injury, and/or property damage:

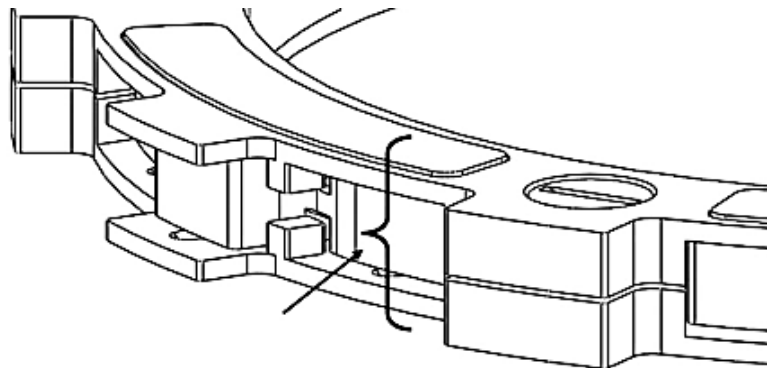
- Use vehicle parking brake to prevent vehicle from moving when parked.
- Avoid parking on steep inclines with the vehicle parallel to the incline direction. The tires may skid and cause the vehicle to become unstable when the parking brake is applied.
- Always position the downhill tires firmly against a curb or other type of wheel chock.
- Engage the parking brake.
- Never leave the vehicle parked without a parking brake engaged.

MAINTENANCE

- Monitoring free play gain will provide the indication for when adjustment to the installed gap via the adjuster screw in the slave cylinder is needed. Check free play gain before every ride and adjust the adjuster as necessary to maintain the installed gap setting. If you have trouble feeling pedal free play gain, you can measure the installed gap to confirm or readjust the adjuster to 1 and ½ turns.

The acceptable installed gap range after clutch break-in is .038" (.965-mm) to .044" (1.12-mm). Setting the gap closer to .040" (1-mm) allows for more time between adjustments.

- Keep up with regular oil changes as per the vehicle manufacturer's recommendations. Clutch function and longevity depends on oil quality.
- Inspect all of your clutch parts at regular engine service intervals for signs of wear or excessive heat, and replace components as necessary.



- If you find yourself making frequent slave cylinder adjustments to fix free play gain, drag, or performance, it is likely time to replace worn clutch discs. Measure your friction plates and replace as necessary.
 - o EXP disc minimum allowable thickness = **0.416" (10.57-mm)**
- Excessive heat or clutch slip can cause premature clutch failure. Once extreme temperatures are reached, irreversible damage will occur. Inspect your clutch plates; if the friction plates look burnt or glazed, or the drive plates are warped, it is best to replace the entire clutch pack.
- Repeat the break-in procedure anytime the friction plates, EXP bases or wedges are replaced. Always soak new friction plates or new EXP bases in oil for at least 5 minutes before installing.

BUMP-STARTING INSTRUCTIONS

If your vehicle needs to be bump-started due to a dead battery or any other reason, follow the steps below to quickly bump-start your vehicle.

1. Use a 4mm Allen key to turn the adjustment screw counter-clockwise, just until it turns freely. This removes the installed gap and locks the clutch
2. Bump start the vehicle. The clutch will function like a manual clutch at this point, but the clutch will not be fully over-rideable at high RPMs.
3. Once the vehicle is started, readjust the gap to set the installed gap.

CLUTCH NOISE & DRAG

Although it is harmless, the clutch may emit a “squeal” or “chatter” sound at low RPM as it engages. Clutch squeal is caused by the clutch components vibrating as the clutch engages and can become more audible as the clutch gets hot. If you notice clutch squeal or chatter here are some recommendations to reduce or eliminate it:

- **Oil:**

Dirty or over used oil can make the clutch more likely to squeal or chatter. Some heavy-duty oil stabilizers or other additives have been known to reduce noise and make shifting smoother. Be sure that any additives you might use do not affect the friction properties of the oil. Rekluse recommends using JASO-MA certified oil for best clutch performance. Heavier weight oils that are JASO-MA certified such as Yamalube 20W50 typically provide best performance.

- **Installed Gap:**

Adjusting the Installed Gap will NOT affect clutch squeal or chatter

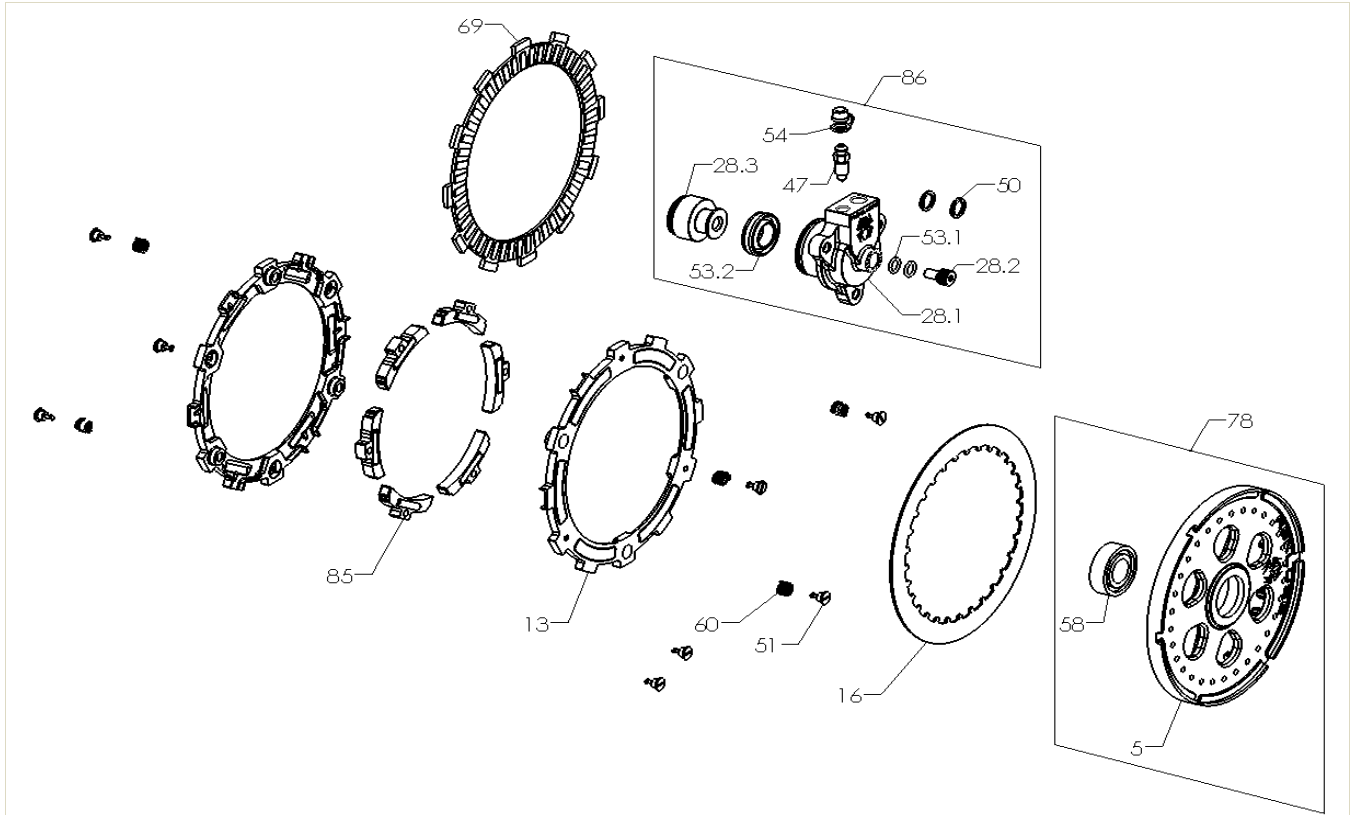
- **Drag:**

It is possible for the clutch to drag noticeably when cold. If this occurs, warm the vehicle up by allowing it to idle for a few minutes before operating. If drag persists verify the installed gap is correct.

REKLUSE®



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Item	Part Number	Item Description	Qty	Assembled as EXP Friction Disk
Not Shown	191-1004A	CUSTOMER DOCUMENT - YAM-6100 EXP CLUTCH	1	<input type="checkbox"/>
Not Shown	192-289A	CUSTOMER DOCUMENT-SAFETY INFORMATION - S x S	1	<input type="checkbox"/>
	195-6100A	YAM-6100 Part Fiche Document	1	<input type="checkbox"/>
Not Shown	420-002A	GASKET-2HC-15453-00-CLUTCH COVER	1	<input type="checkbox"/>
Not Shown	821-011A	WARNING LABEL - 3.5 X 1 - SXS	1	<input type="checkbox"/>
Not Shown	821-012A	WARNING LABEL - 3/8 x 3.5 - SXS	1	<input type="checkbox"/>
13	140-230C	YRAD EXP BASE	2	<input checked="" type="checkbox"/>
16	143-030A	LINING PLATE-YRAD	1	<input type="checkbox"/>
51	415-000	FASTENER - Quarter Turn Pin	2	<input type="checkbox"/>
51	415-000	FASTENER - Quarter Turn Pin	6	<input checked="" type="checkbox"/>
55	420-001A	GASKET-2HC-17472-00-SLAVE CYL.	1	<input type="checkbox"/>
60	442-006A	EXP ADJUSTMENT SPRING EXP - 17LB (White)	6	<input checked="" type="checkbox"/>
69	469-075A	PLATE, FRICTION 1 - 5YU-16321-00	1	<input type="checkbox"/>

78	710-240A	YXZ1000R PRESSURE PLATE WITH BEARING	1	<input type="checkbox"/>
5	113-030B	YRAD EXP PRESSURE PLATE	1	
58	433-315A	SINGLE ROW, DEEP GROOVE, BALL BEARING- 17 ID, 35 OD, 10 THK - NO SEAL OR SHIELD	1	
85	741-041B	Wedge - 450 RP - Heavy	6	<input checked="" type="checkbox"/>
86	742-018A	ADJUSTABLE SLAVE ASSEMBLY - YAM 07S	1	<input type="checkbox"/>
	411-163A	M8 x 1.25 Bleed Screw	1	
	414-230	HARDWARE - Crush Washers: 10mm	2	
	419-124A	Bleed Screw Cap	1	
28.1	180-123A	SLAVE CYLINDER HOUSING-Y07S	1	
28.2	180-124A	SLAVE CYLINDER ADJUSTER - 17mm	1	
28.3	180-125B	SLAVE CYLINDER PISTON-Y07S	1	
53.1	418-907	HARDWARE - 011 EPDM O Ring	2	
53.2	418-030A	2HC-1638G-V0-CUP, CYLINDER	1	