

# IRP Auto Clutch Manual

## KTM 65 SX

**P/N 920400 2009-2015**

**P/N 920400A 2002-2008**

### Forward

This manual provides instructions for installing the IRP Auto Clutch into the KTM 65 SX Engineered for MX racing as well as Hare Scrambles and Trail Riding. Note: The 2002-2008 clutch uses a different size standoff dog than the 2009-2013 clutch.

#### **The IRP Auto clutch features**

Fully automatic ... Bike can be started or stopped in gear without pulling in lever  
Manual override feature for MX starts  
Centrifugal force cam action lever design for powerful lock up as engine revs increase  
Reduces unwanted wheel hop during downshifting  
Aluminum components made from 7075-T6 alloy for max strength  
Hard coat anodized for greater wear resistance

### Tools Required

**17MM Socket**  
**8MM Socket and 8MM box wrench**  
**4 MM Allen wrench**  
**3 MM Allen wrench**  
**10MM open end wrench**  
**Feeler gauge**  
**Screwdriver and long nose pliers**  
**Center punch and ball peen hammer or automatic center punch**  
**Dremel Grinder with cut off wheel**  
**Torque wrench or Impact Wrench**

## Removing factory KTM Clutch

Allow engine to cool to ambient air temperature and put bike in 2nd gear.

1. Shut off fuel petcock We advise having only a small amount of fuel in tank to avoid spills. Avoid working in a closed environment when gas is present.

2. Drain oil.

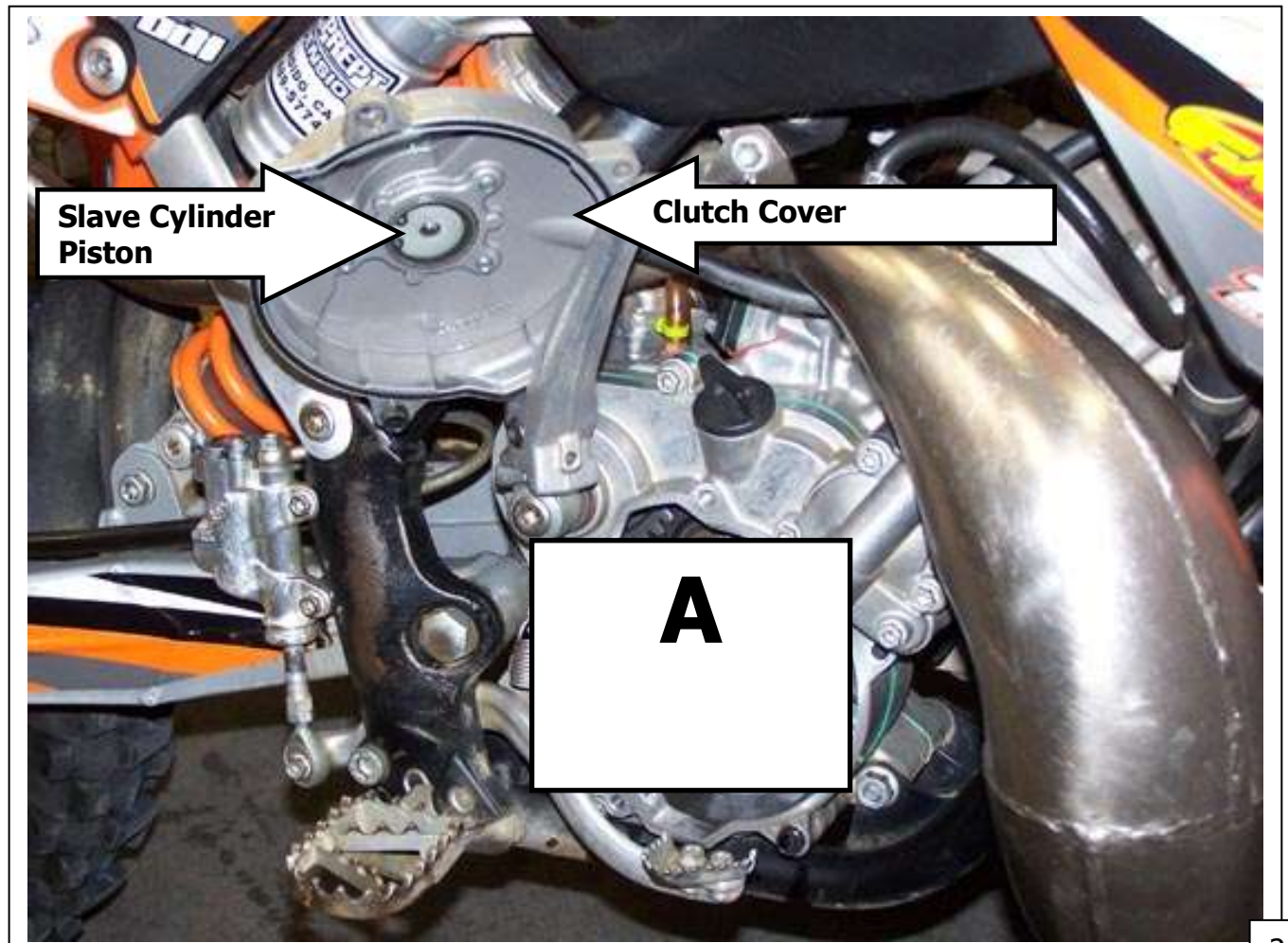
3. Place bike on bike lift if available or lay bike on side with clutch cover facing up.

Note: When bike is laid on side gas will leak from the carburetor. Work in area with good ventilation and no open flames or sparks.

### **WARNING!!!**

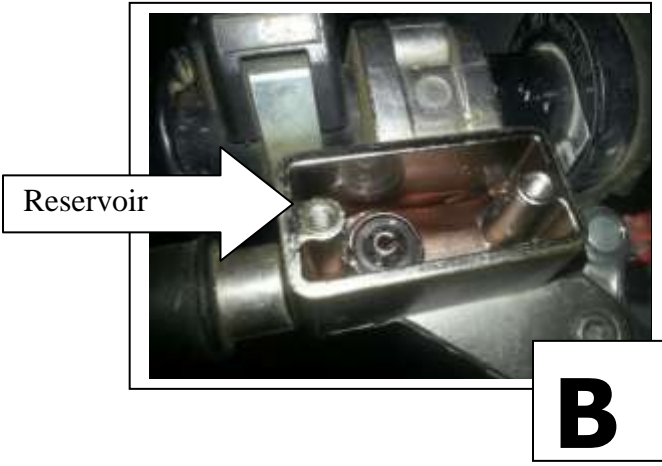
**Do not pump clutch lever when clutch cover is unbolted. The piston in the slave cylinder will over-travel and will break the snap ring area inside the housing of the slave cylinder. This is a very expensive repair that must be prevented.**

**SEE PICTURE A**

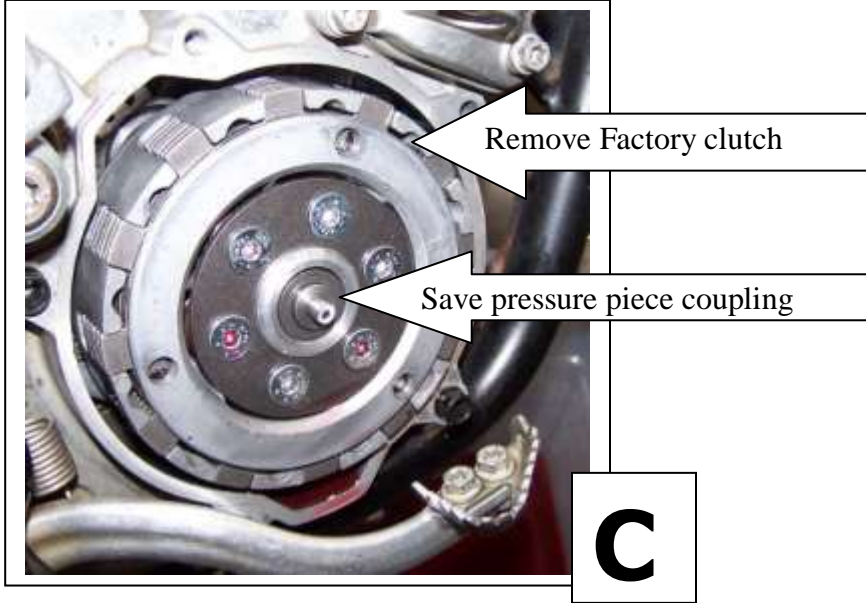


4. Remove clutch cover screws with 8MM socket. **Note:** Cover screws are several different lengths. Be sure to note where each length screw goes and save screws for later reassembly of cover.
5. Remove clutch cover but do not remove hydraulic line attached to slave cylinder.
6. Place the cover under the kick start lever to get it out of the way. Be careful to avoid damage to hydraulic line or O ring on backside of cover. **Picture A**
7. Remove cover and membrane from clutch fluid reservoir on the handlebar and remove about 10 ml of fluid . Inserting a paper towel into the reservoir will absorb the fluid for easy removal. New fluid level should be 6 mm from bottom of reservoir. See **Picture B**  
Put membrane and lid back onto reservoir.

*The reason for lowering the hydraulic clutch fluid level is to allow the slave cylinder to travel freer as auto clutch is engaging.*



8. Remove pressure piece coupling (see **Picture C**) ***Save for use with IRP clutch.***
9. Remove the factory KTM clutch.



## REMOVING GEAR FROM KTM BASKET

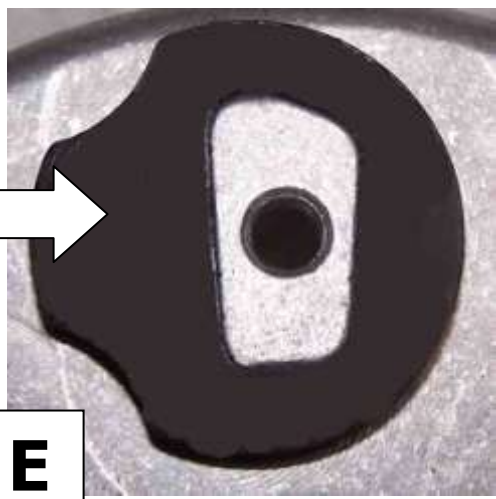
10. Clean oil from basket and gear.
11. Grind off top of rivets with Dremel until steel plate can be lifted off. Steel plate will not be needed therefore grinding into the plate is OK. SEE PICTURE D
12. Lift off gear from basket.  
SAVE GEAR FOR USE ON IRP BASKET
13. Remove the rubber damping elements and SAVE FOR USE ON IRP BASKET.  
Note: excessively worn damping elements must be replaced. KTM rubber elements from the 85 SX are the same size as the 65 SX rubbers and are available from KTM  
P/N 47032026000



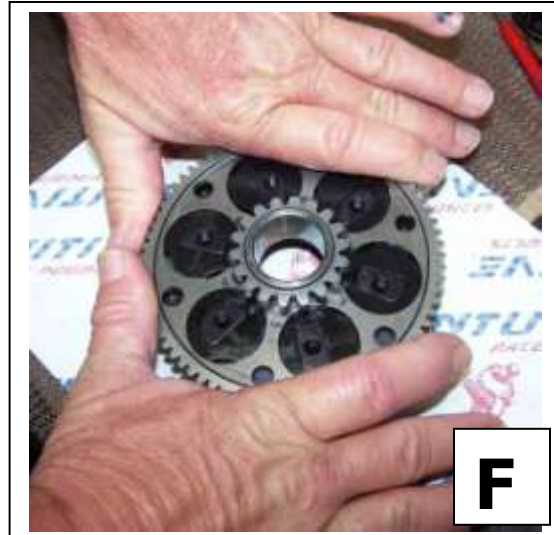
**D**

## INSTALLING GEAR ON IRP BASKET

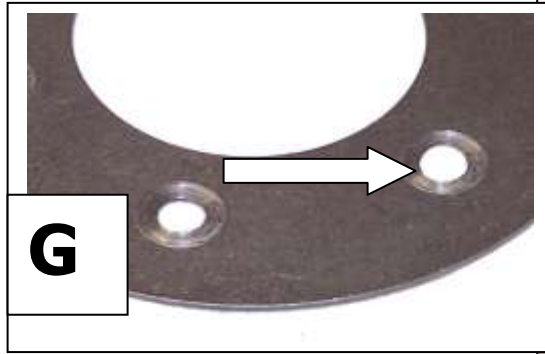
14. Install 6 rubber damping elements on basket. PICTURE E
15. Install gear PICTURE F
16. Install IRP steel plate with spot face outward PICTURE G
17. Apply 243 red loctite to special screws M6 and install in basket. Picture H  
Install all screws before torque sequence. Tighten screws in a diagonal pattern. Torque to 11NM or 96 inch pounds. . Picture I
- Warning! These are special screws for clearance and use of any other type screw will cause clutch or engine damage**
18. Peen each screw from the inside of basket to prevent them from backing out. PICTURE J



**E**



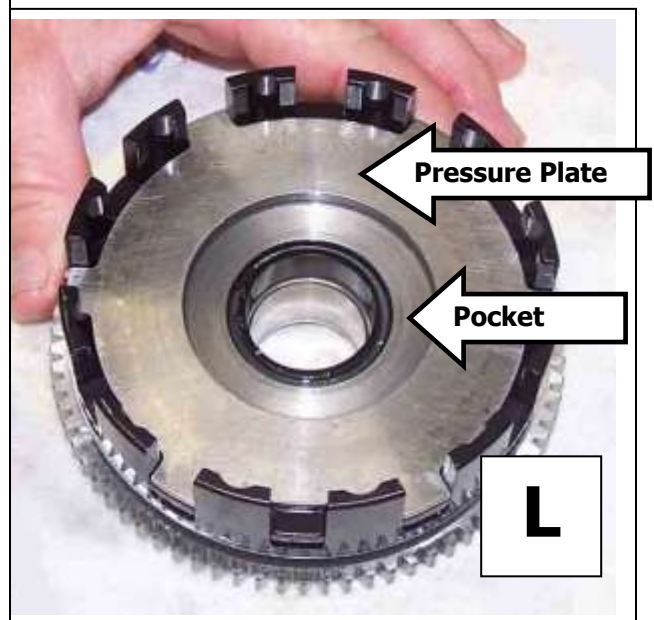
**F**



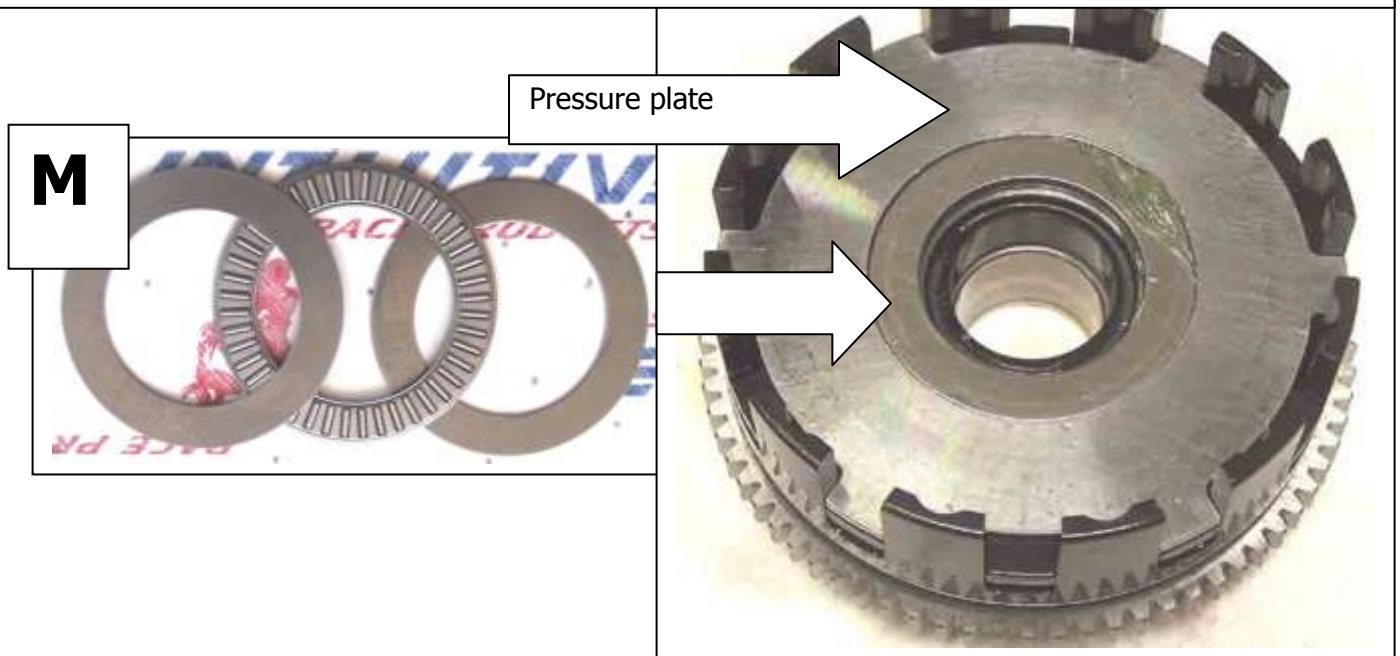
**INSTALLING LEVER SUPPORT INTO BASKET**

19. Lever Support goes into basket with pocket outward ... Picture K Note: levers are loose fit and may fall out if lever support is accidentally turned upside down !

20. Install Pressure Plate into basket with pocket facing outward .... Picture L

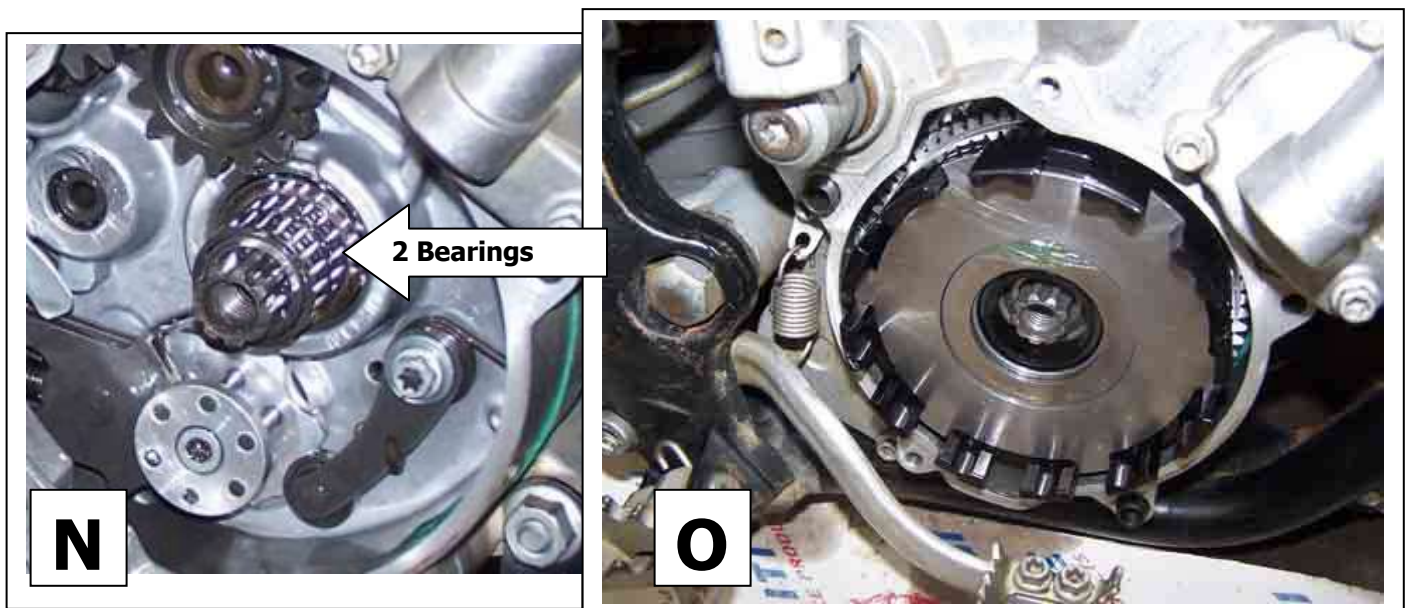


**21 Apply grease to thrust washers and thrust bearing and install onto pressure plate pocket as follows: washer, bearing, washer ..... grease will keep them in place when putting basket on shaft of engine Picture M**



**22. Be sure the 2 KTM needle bearings are in place on main shaft. Picture N**

**23. Install Basket onto main shaft. Push down on brake lever to clear basket. Wiggle basket back and forth to insure gears are meshing and basket seated entirely onto main shaft. Picture O**





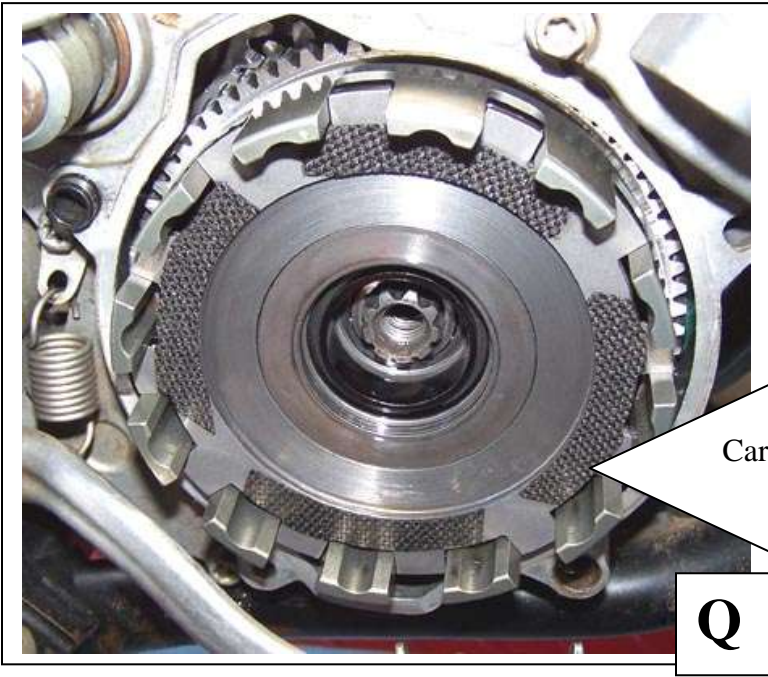
**24 Install Stop Disk over splined shaft and push it all the way in against basket with screwdriver** Note: this is a special size washer 26.9 OD x 17.2 ID x 1.5 thick  
*Clutch will not work if washer not installed.*  
**Picture P**

← Stop Disk Washer

**P**

**FRICITION INSTALLATION**

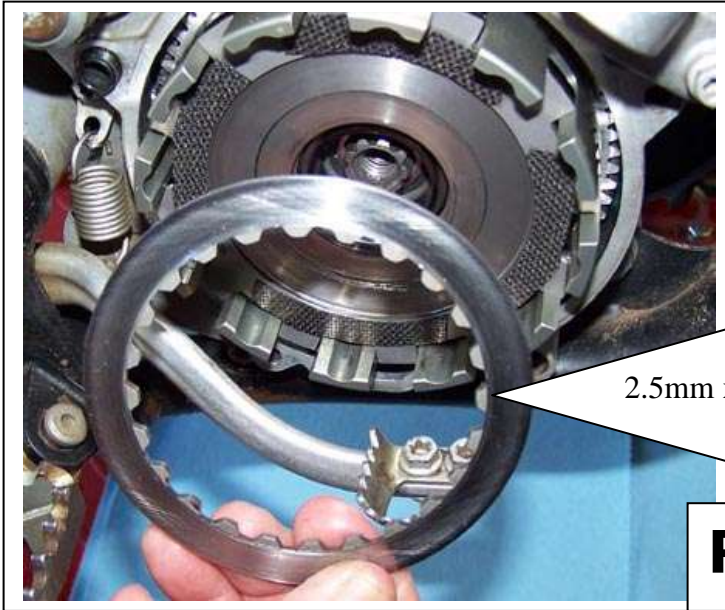
- 1 - Friction Disk with Carbon friction material on one side ... 1.6MM Thick
- 3 - Friction Disks with Carbon friction material on both sides ..... 2MM Thick
  - 1 - Thick Steel Floater 2.5MM thick at spline offset to 1.3MM
  - 3 - Thin Steel Floaters 1MM thick



**Step 25**  
 Install Friction disk (1.6MM) as shown ...this disk only has carbon friction material on one side only. The side with carbon material must face outward  
**Picture Q**

Carbon friction side must face out

**Q**



**Step 26**  
Install 2.5MM (.100") X 1.3MM Offset (.050") floater with flat side facing toward engine ... see arrow  
*The thick floater must be installed in this sequence for proper operation of clutch.*

**Picture R**

2.5mm x 1.3mm Offset Thick floater... install into basket

**R**



**Step 27** Install a friction disk with carbon material on both sides  
**Picture S**

Friction disk

**S**



**Step 28 Picture T**  
Install a thin floater (1MM)

Thin floater 1MM

**T**





**Step 29 Picture U**  
Install a Friction Disk with carbon material on both sides

Friction disk

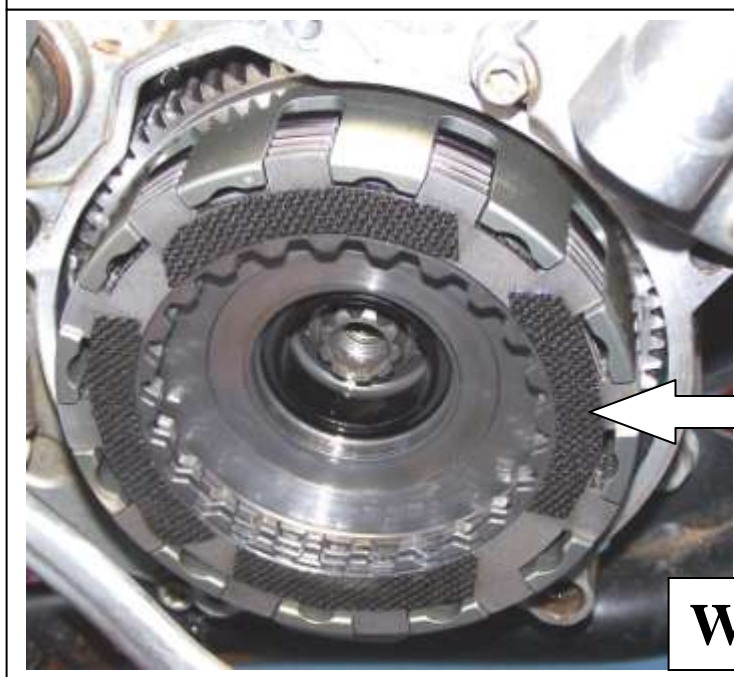
**U**



**Step 30 Picture V**  
Install a thin Floater

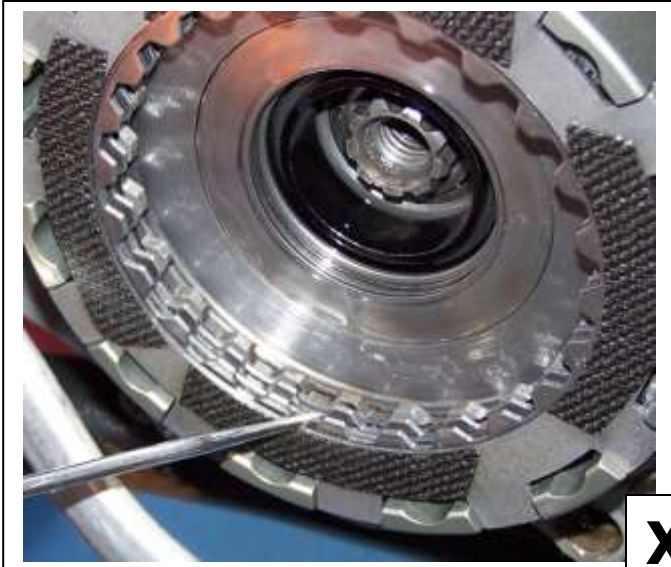
Thin floater 1MM

**V**



**Step 31 Picture W**  
Install a Friction Disk with Carbon material on both sides

**W**

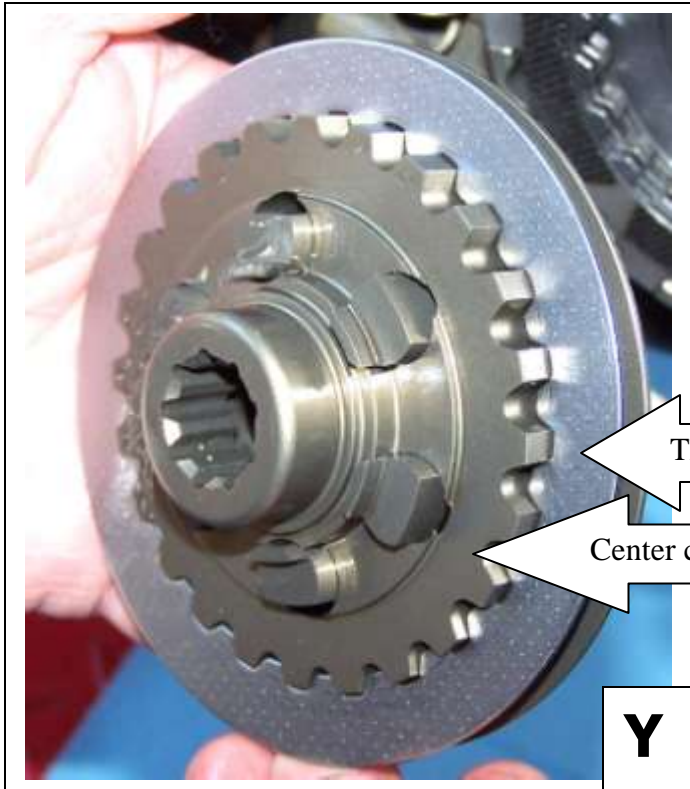


**X**

**Step 32** Align spline tabs in all floaters before installing Center Clutch ... this will make installing center clutch a lot easier

Use small screwdriver or probe to align

**Picture X**



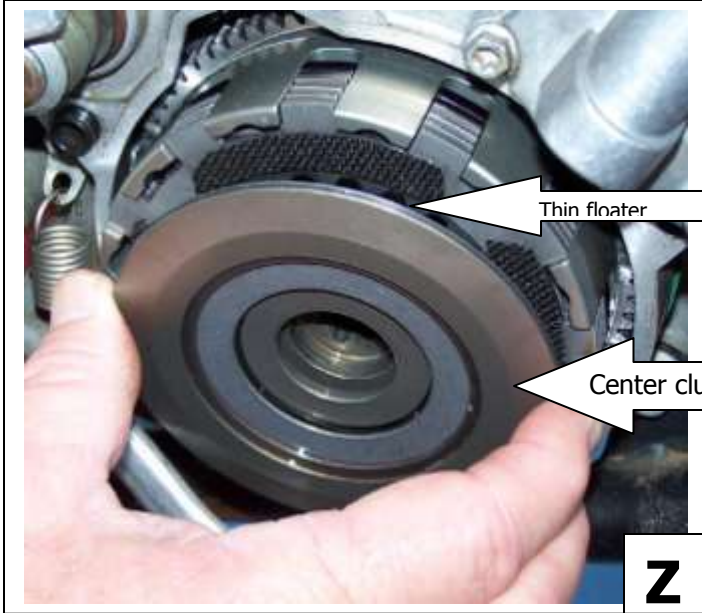
Thin floater

Center clutch hub

**Y**

**Step 33 Picture Y**

Place the last remaining thin Floater over Center Clutch Hub



**Step 34** Install Center clutch  
Picture **Z**

Thin floater

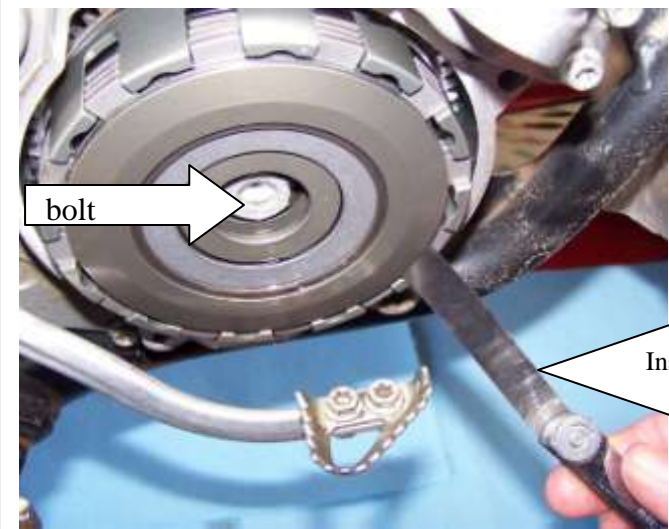
Center clutch

**Z**



**Step 35** When installed correctly the center clutch will have a spring effect as it is pushed inward  
Picture **AA**

**AA**

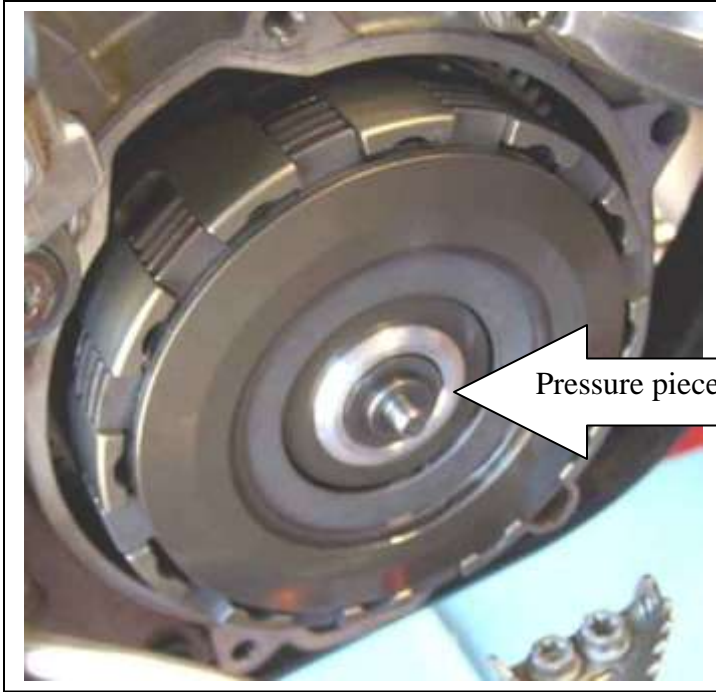


**Step 36** Picture **AB**  
Install factory clutch bolt and tighten to 60 Nm  
When properly installed clearance should be .020" +/- .005" or .5MM +/- .12MM

bolt

Insert feeler gauge between top clutch and 1<sup>st</sup> floater

**AB**



**Step 37** Install pressure piece coupling

Picture AC

Pressure piece coupling



**38. Install Clutch Cover and tighten screws to 10NM 88 inch lbs**

**39. Add .53 qt of SEMI-SYNTHETIC ATF ... OR IRP CLUTCH LUBRICANT ...**

***DO NOT USE GEAR OIL !!! AS IT HAS A HIGH VISCOSITY THAT PREVENTS TOTAL LOCK UP OF THIS SLIPPER STYLE CLUTCH!!***

Item No	Part No	Description	Units Required
1	920401	Basket	1
2	920402	Backing Plate	1
3	920403	Screw, for backing plate	6
4	920404	Stop disk washer for main shaft	1
5	920405	Flanged piston	1
6	920406	Washer	1
7	920407	Wave Spring	1
8	920408	Retaining ring	1
9	920409	Lever Support	1
10	920410	Dowel pin	12
11	920411	Lever	12
12	920412	Pressure Plate	1
13	920413	Thrust washer, each	2
14	920414	Thrust bearing	1
15	920425X	Rebuild Kit, (1-920415C, 3-920415D, 1-920416D, 3-920416)	1
15	920415C	Friction disk, carbon fiber on one side	1
	920415D	Friction Disk, carbon fiber on two sides, ea	3
16A	920416D	Floater, .100" x .050" offset	1
16	920416	Floater, .039" (1 MM thick) Steel, ea	3
17	<b>920417</b>	<b>Standoff dog 2009-2013</b>	1
	<b>920417A</b>	<b>Standoff dog 2002-2008</b>	1
18	920418	Center Clutch hub	1
19	920419	Wave Spring	1
20	920420	Front Washer 2 1/2" Ø	1
21	920421	Retaining ring	1

### SAFETY WARNING!

We advise cold starting with transmission in neutral. The IRP Auto Clutch allows starting in gear therefore the bike may move suddenly if excessive throttle is applied and the clutch lever is not pulled in. Keep brake applied until rider is ready to go. Use kill switch if throttle sticks open.

### MAINTENANCE

*IRP auto clutches are designed to slip when exiting tight corners as rider is rolling on the throttle or when slower race traffic conditions occur as the rider may roll off and on the throttle numerous times. Slip keeps the engine at its peak power curve to help performance and reduce risk of stalling. **Expect a higher wear rate of the friction disks over a traditional clutch.***

Inspect friction disks every 20 hours and replace frictions as follows: one sided disk when worn below .055" or 1.37MM, two sided friction disk worn below .070" or 1.77MM. Check all parts for excessive wear or cracks and replace if needed. Due to the intended usage of products offered, all products are sold on an "as is" basis and no warranties of any kind, whether written or oral are made by IRP or its agents or employees.