

Paul's write-up on...

# 1<sup>st</sup> Gen Mazda RX7: Rear Brake-Caliper Rebuild

## Things you will need

1 – Brake calliper rebuild kit: (about \$83 for a pair from Mazda – cheaper elsewhere)



This includes: (apologies for any incorrect terminology)

- Inner piston seal
- Outer piston seal
- Outer piston seal spring
- Hand-brake arm seal
- 2 Types of grease

**Grease colours – thanks mr ouija of rx7club.com**

**Orange Grease:** Bearings, adjusting bolt, strut and piston boot

**Pink Grease:** Piston seal

## 2 – Tools

- 17mm open-ender to loosen the brake hose
- 14mm socket/ring for disconnecting brake calliper
- 16mm? open ender for hand brake cable (I think)
- 8mm ring for bleeding
- Hose to fit over the bleed nipple
- Vice grips to help remove hand brake cable
- Bricks to chock your wheels (preferably 6)
- Jack
- Jack stand

## 3 – A nice sunny afternoon and a bbq loaded with snags →

The first time it took me many hours, I would recommend starting before midday so you have a chance of finishing before its dark. Depends how slow you work ☺





## Getting started

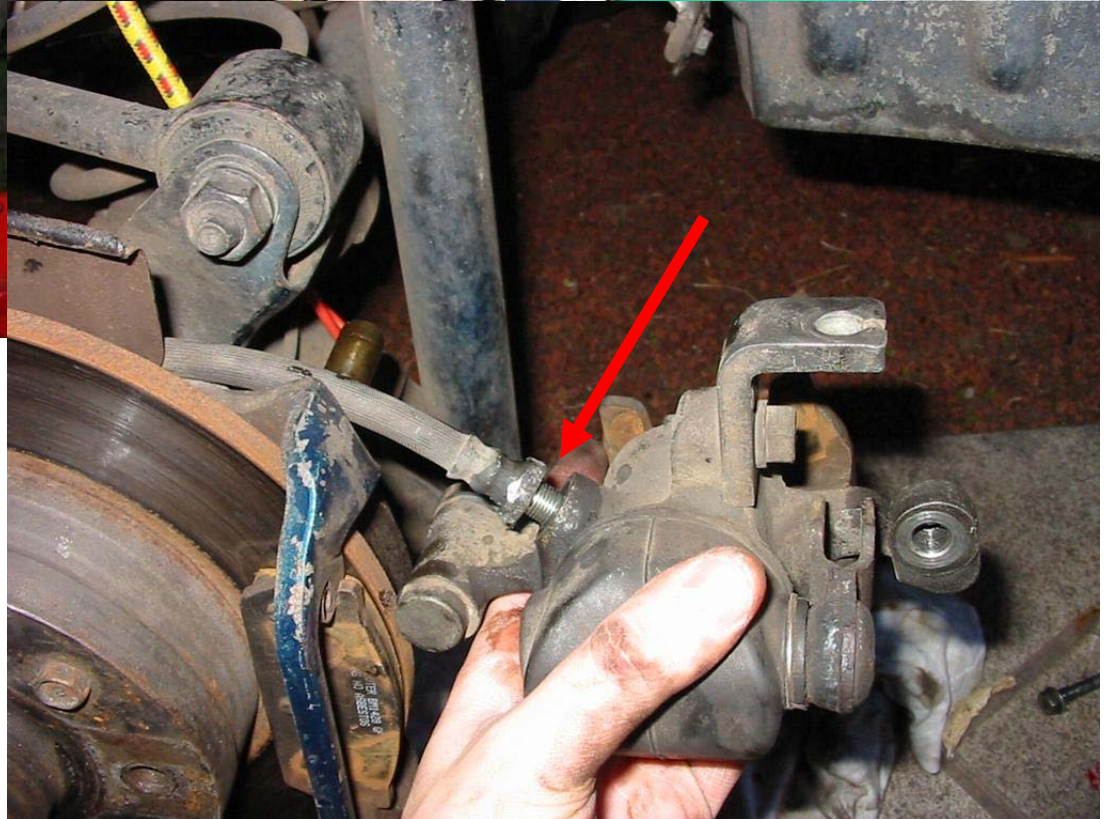
- Chock the other 3 wheels on both sides
- Release handbrake
- Put the gearbox into neutral
- Loosen wheel nuts
- Jack up the car
- Remove wheel nuts + wheel
- Place jack-stand under car for safety





## Removing the brake calliper

- Loosen the brake hose fitting from the calliper
- Loosen the nuts on the handbrake cable and remove
- Remove bolt holding calliper on
- Rotate calliper up and slide off idle post
- Unscrew calliper from the brake hose
- Block brake hose with something to prevent leak





## Tearing down the brake calliper

- First drain brake fluid into a container / wipe with rag
- Mount calliper in vice on handbrake arm
- Either using a cube brake piston tool or a couple of spanners, screw the brake piston right in
- In the outside seam of the rubber seal, you will need to dig out the metal spring clip
- Now unscrew the brake piston completely, the seal will pop out of the housing
- You can now remove the seal from the piston + clean up the piston with a rag





## Removing the rear section (handbrake mechanism)

- Remove the 2 spring clips holding the rubber casing on the rear
- Pull back the rubber casing
- Remove the circlip from the end of the hand brake actuator shaft
- Give the shaft a light tap on the end and slide it out



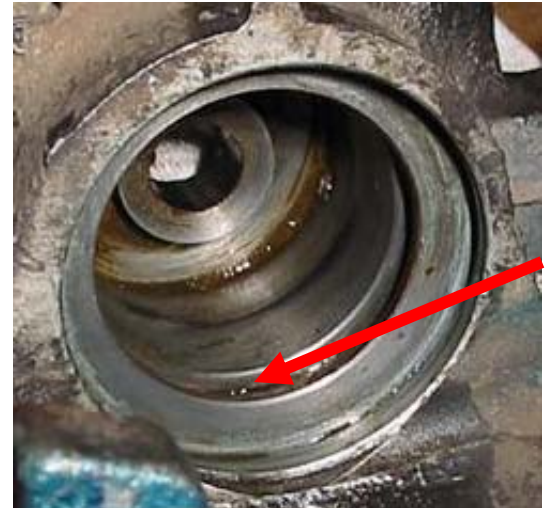
- Remove all the little bits and pieces and clean them all up with a rag





## Cleaning up and installing new seals

- Using a clean rag and perhaps a screwdriver inside, clear out as much gunk as you can from the piston chamber without scratching anything
- Dig out the seal in the cylinder with a fine screwdriver or scribe
- Thoroughly clean out the seal groove
- Push in the new cylinder seal (*lightly grease this seal with the red/pink grease first*)
- Remove the old seal from the hand brake arm thing that the piston screws onto, and replace with new seal after cleaning
- 



## Cleaning up the back section

- Check the needle bearings and use WD40 to loosen, then dry with rag and lubricate with grease
- Try and scrape off any corrosion with a rag over a screwdriver
- Re-assemble the mechanism in the opposite order that you took it apart
  - o Insert the threaded rod (with 7 sprung washers in order as pictured above) (*you may have to remove one washer to get it back together – then tighten hand brake cable later*)
  - o Insert the spring
  - o Insert the little wedge onto the top of the threaded rod
  - o Slide in the handbrake actuator arm (you may need to apply pressure to the threaded rod in order to get this in) – **this is probably the hardest part of rebuilding your callipers (2 person job)**
- Replace the circlip on the end of the handbrake actuator arm
- Cover everything in grease to ensure another 25 yrs of trouble-free braking experiences

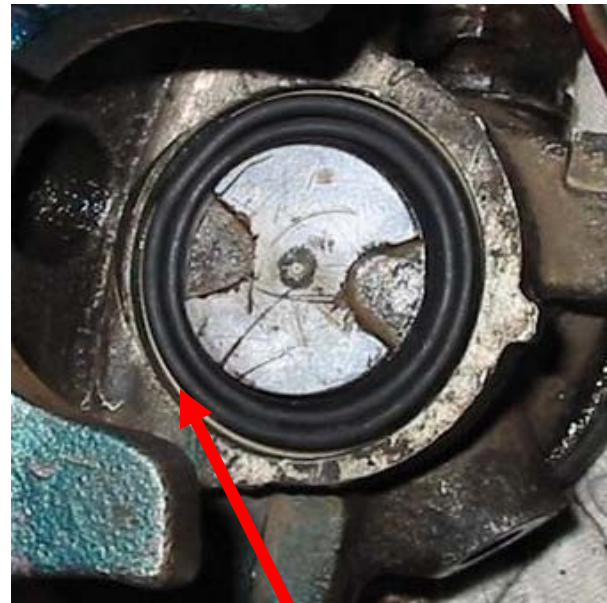


## Replacing rear dust jacket

- Pull the dust jacket over the handbrake arm hook
- Re-install both of the spring clips to hold the jacket in place

## Putting the piston back in

- Put the calliper into the vice
- Ensure the piston is clean – start to screw it in by hand
- Using a couple of spanners or cube tool, screw the piston all the way in until it stops going down and ensure that one of the indents in the piston face lines up with the hole in side of calliper.
- Now push in the new dust seal into the housing and insert a new spring clip into this to hold it there
- Next push the middle of the dust seal down around the piston and into the groove



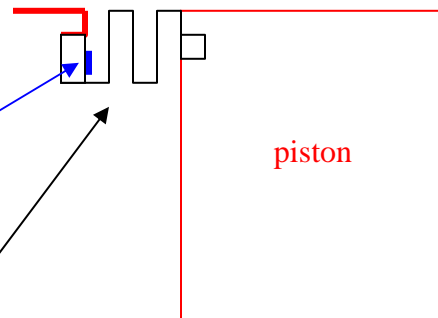
Spring clip

Housing

Spring clip

seal

piston





## Finishing up

- The brake piston will need to be screwed out a complete half turn – make sure the cutout/indent lines up with the hole on the calliper side housing and that there is not too much free-play when installed on the pads – if there is free play you will need to adjust this.
- Connect the brake hose up to the calliper again and tighten
- Slide the calliper onto the idle post
- Rotate the calliper down and do up the bottom bolt
- Re-connect the handbrake cable (ensure you push the threaded casing through the mount before hooking the end into the hook.
- Tighten the nuts on the handbrake cable
- Test the handbrake
- Connect up hose for brake bleeding + get someone to help you do that (consule manual for bleeding instructions) **(Note: bleeding is EXTREMELY IMPORTANT! Do not skip this step)**
- Test drive at low speed (flat roads). Note if the pedal feels spongey, bleed again. If you hear weird noises, investigate them.



**I take no responsibility for your actions or any consequences that occur as a result of those actions taken based on information you have read here.**

**I am not a mechanic by trade, I just like to save a bit of money here and there and learn about my car ☺**

**If you find anything that you believe to be incorrect, or something I have missed, please let me know via email to [paul@pw.cx](mailto:paul@pw.cx)**

**Thankyou!**

**Last updated: 4 June 2006**

**<http://rx7.pw.cx/>**