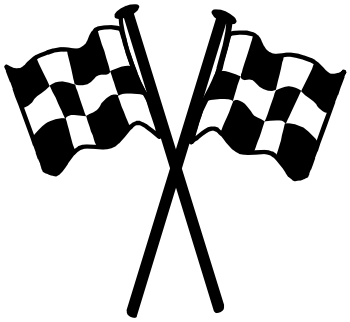
HRC
HONDA RACING

Setup Manual
Parts List

‘94-98 RVF400RR
Racing Kit



A) For further details issued, refer “Honda RVF400 (NC35) Service Manual” published by HONDA MOTOR CO., LTD.

B) Whole components listing are developed for racing purpose only based on ’94 SP class regulations. It would be necessary to modify a body to install specific components. Term of Use:

- Listed components are provided for competition use, not for common use. No refunds or warranty, not same as manufactured components for common uses.
- Any motorcycle installed these components must not allow riding common roads. The vehicle must specify NON MOT vehicle.
- HONDA MOTOR CO., LTD. may make changes to description, or to the specification described therein, at any time without notice.

‘94 RVF400RR Racing Kit / Setup Manual & Parts List

Content

1. Treatment

(1)Fuel

High Octane white gasoline

(2)Engine Oil

Recommended Oil: HONDA Ultra-GP (for four-cycle Motorbike) SAE20W-50 or 10W-40

Full Capacity: 3.0Liter (5.28pt) Oil Exchange: 2.5Liter (4.4pt) Filter Exchange: 2.4Liter (4.224pt)

(3)Spark Plug

NGK R 847-10(11)

(4)Cooling Water

Highly recommend checking the water level on each ignition/riding.

Ingredient: Tapped water or Drinking water

I. Unscrew a radiator cap. Apply water up to limb of intake.

II. Hold steering and heave the body two or three times to let air out.

III. Add water if necessary.

IV. Screw the cap tighten.

V. Start Engine then check water level again. Add water if necessary.

< Notes for racing condition>

- Keep your attention when you re-check the water level since the water would spill out of intake. Also cover the body with wastes.
- Drain cooling water in a catch-tank before riding.
- Drain whole water in a radiator after riding. It avoids corrosion or clog of components.
- It is admitted adding coolant in winter season. Handle carefully when you apply them. It makes the circuit slippery if it drops or spilled.

2. Operation

(1)Starting Engine

• Check on break oil level and cooling water then start engine.

(Also check oil drain bolts wiring)

①Turn a fuel cock to “ON”

②Kick gear into “Low”

③Pull a choke knob

④Push-start

⑤Warm up until the rev get steady then set the choke knob

<Note>

• It is not necessary manipulating choke knob when the engine is warmed up enough.

• Never running engine for a long time in unopened place.

(2)Turn Off

①Turn a fuel cock to “OFF”

②Push termination switch to “OFF” when the rev went down.

<Note>

• Keep a fuel cock on “OFF” position when engine stops to prevent any troubles on carburetor.

(3)Warming up

①Start raising the rev from lower level.

②Open throttle intermittently. Control the rev up to 6,000rpm until a water temperature scale reach to 50°C.

③After the scale raised over 50°C, warm up engine up to 10,000rpm.

④Check engine case and water cooler if any leakage exist.

⑤Stop warming up when the scale reached to 70°C

<Note>

• Don't raise the rev too much during warming up.

(4)In Riding

①Check if scales of water temperature and rev meter work well.

②Check if handling and throttle work smoothly.

③Check if breaks work well.

(5)After Riding

①Check spark plugs.

②Check water/oil leakage.

③Check bolts/nuts loosen or missed.

④Check chain belt extension.

⑤Check amount of fuel in a tank.

⑥Check break hose and break pads/disks

<Note>

• Only major items describe in check lists above. Please check other items you notes also.

3. carburetor Setting

• Remove the carburetor on a base vehicle and exchange by procedure below:

(1)Air Fanner

①Unscrew eight bolts which keeps air cleaner base washer.

②Up air cleaner base from carburetor. Rotate air fanner counterclockwise then remove it.

③Replace two air fanner(20mm) on rear-head side to front-head side.

④Install two air fanner(30mm) in a racing kit on rear-head side.

⑤Screw air cleaner base washer bolts.

(2)Jet Needle(J9MA:∅2.455, J9MB:∅2.465, J9MC: ∅2.475)

①Remove the Top cover unscrewing three bolts.

②Take a vacuum piston out. Attach a M4 screw on the head of jet needle holder and pull the holder out by pliers or other tools.

③Exchange a jet needle.

④If necessary, install a shim(Thickness:0.5mm). Set it over the top of the jet needle. The shim must be placed between a clip and vacuum piston.

⑤Set the jet needle on a vacuum piston and push down on the jet needle holder(check a spring is set) until snapped.

⑥Set the vacuum piston in a carb-body and snap a diaphragm lip in a slot of the body.

⑦Set the Top cover on the vacuum piston carefully as is not to bent a compression spring.

⑧Check the vacuum piston works properly. Move it by hand from a side of air fanner.

(3)Main Jet / Needle Jet Holder

①Place the carburetor upside down and remove float chamber.

②Replace needle jet holder

③Change a main jet to certain number’s jet.

④Set a float chamber back.

(4)Case Study

		#2 #4	#1 #3
Main Jet	(MJ)	#148	#152
Jet Needle	(JN)	J9MB(second column)	J9MB(second column + one shim)
Slow Jet	(SJ)	STD	STD
Pilot Screw	(PS)	STD(1 and half pitch back)	STD(1and half pitch back)

Setting Procedure

①Proper jet's setting depends on temperature, humidity and location. Start trying to use big number's jet.

②Procedure: Confirm → Number(MJ) / Shim(JN) / Pitch(PS) Modify → Confirm → OK

- Fixing Main Jet: Check on riding home stretch → Confirm → Modify → Confirm →OK
- Fixing Jet Needle(Shim): Check on riding corner's ends
- Fixing Jet Needle(Strait): Check on riding corner's ends through strait
- Fixing Pilot Screw: Check the timing when throttle's open ends/ through corner's ends

4. Air-cleaner Box Set Parts

• It is possible to install to ’89-’93 VFR400R(NC30).

(1)Install

①Remove an air-cleaner case cover and cleaner elements off from the base vehicle.

②Install an air-cleaner upper cover in racing kit.

(2)Air-vent tubes Layout

①Cut down a front head air-vent tube at the straight end. Remove a position marker and tube top.

②Turn a rear head air-vent tube right at the joint(See pg1-7ae.jpg).

③Connect modified tubes to T-shaped joint and Tube (8X80) in racing kit.

<Note>

• Sub cleaner tube(connecting carburetor and upper cover) on the based vehicle must be opened from carburetor.

(3)Air-guide Plates

• Make an air-guide plates with polypropylene(thickness: 1-1.2mm) which covers the top of the radiator through the top of front head cover(including a carb-insulator). Install it to flow clean air to air-cleaner box constantly.

<Note>

NASA ducts(upper cowl, inlet duct) and fuel tank cover of the base vehicle are necessary combined with racing kit.

5. Sealing Plug Set and Other Peripherals

(1)Starting Motor

• It is used for a dummy after removed an ignition by racing regulation. Set it with an oiled O-ring to the case then screw and wire.

Sealing Plug Set: 11220-NE4-752

A color(6.5x11x3) isn't necessary for RVF400RR, except for CBR400RR.

(2)Oil Pressure Switch

• Take the oil pressure switch off. Tape the taper plug and set it in a case.

Taper plug: 90001-NH8-000

Screw torque: 1.2kgf•m

(3)Oil Filler Cap

• Drill the oil filler cap on the base vehicle(∅2) and wire with R-cover(Also drill a flange of R-cover).

(4)Oil Drain Bolt

• Drill the oil drain bolt on the base vehicle(∅2) or replace to the bolt in racing kit(Also drill a flange of oil pan).

Oil drain bolt 12mm: 90081-NC2-000

Screw torque: 3.5kgf•m

(5)AC Generator

①Take an ACG cover off

②Take a flywheel off with special tools.

Flywheel holder: 07725-0030000

Rotor puller: 07733-0020001

③Take a generator coil off with wrench.

④Install a grommet in racing kit on ACG cover and set the cover back to vehicle.

Grommet: 32972-NF2-720

<Note>

In a case of riding by battery ignition, charge the battery full before riding.

6. Thermostat

(1)Detachment

①Detach a thermostat to uprate a cycle of cooling water.

• Remove a thermostat cover and detach a thermostat.

• Set a thermostat cover back.

②Install a thermostat seal and O-ring. Screw the cover.

Screw Torque: 1.0Kgf-m

7. Fuel (auto) Cock

• It is necessary to modify a fuel cock of base vehicle. It may cause a fuel flow shortage in racing condition. (See pg1-10ae.jpg)

①Remove a boost joint places at right side of rear cylinder head. Apply a screw lock glue to removed screws then screw tighten.

②Remove a dia-flam cover of fuel auto cock.

③Pull out a dia-flam COMP on a spacer.

④Remove dia-flam A, B and collar and plate(Don't scratch dia-flam A).

⑤Remove a pipe. It helps expanding a fuel flow.

⑥Remove a plate on dia-flam B then attach to dia-flam A.

<Note>

• Spring, dia-flam B and collar are not in use.

8. Transmission

(1)Transmission Set

• Use a transmission set in a kit combine with STD gear (M2 gear) of VFR400R(NC30).

(2)Standard Mission

• It is recommended using VFR400R(NC30) because the transmission of RVF400RR is wide-ratio(first to third).

<Note>

• Use whole gear set(first to six) because of differences of gear ratio. Use counter shaft from RVF400RR.

9. Radiator Set

• Modify some parts and install as below.

①Attach top of upper radiator steer.

②Attach bottom of lower radiator steer.

③Drill R/L radiator and lower stay to attach with lower radiator and connect both upper and lower radiator.

④It is necessary to use the left hose of base vehicle. Place it right side or the body and modify length. It is also necessary to use a water hose A in the kit.

<Note>

• Cut the bottom-end of front fender to 80mm for enough spacing (See pg1-11ae.jpg).

• If necessary, cut or modify the body cowl.

10.Steering Damper Set (See pg1-12ae.jpg)

(1)Handle Stopper

• It is necessary to change turning angle of handle in base vehicle by stopper in the kit:

①Detach a hone from steering stem.

②Install the stopper.

Screw torque: 1.2kgf•m

(2)Install

①Unscrew steering stem nuts and front fork cotter pin-bolts on the head pipe, and detach a top bridge.

②Unscrew bolts of steering handle pipe, and detach both of left/right handle pipes .

③Install a steering damper stay.

④Cut stopper boss on steering handle pipes. Set handles to front fork and screw temporary.

⑤Set the top bridge.

Screw torque

Steering stem nuts: 10.5kgf•m

cotter pin-bolts: 2.3kgf•m

⑥Install a holder to the steering damper and place to the frame body.

⑦Check a performance of the damper steering handle left and right. Then place as not to bother bearings performance. Screw bolts of steering damper stay.

Screw torque 6mm bolts: 1.0kgf•m

11. Suspension

(1)Front Fork

Extrusion:	10mm
Oil level (STD):	74mm (See pg1-13ae.jpg)
Oil amount (STD):445cc	
Cushion oil:	Honda Ultra cushion oil #10
Pre-loading adjuster level:	Match the top edge of fork cap to the forth index(from top) of adjuster.
Rebound adjuster level:	Loosen six clicks from the maximum setting

(2)Rear Cushion

Spring placement setting:	173mm
Spring complement(STD):	14.0kgf•m
Spring complement(OP):	15.0kgf•m

(3)Rear Cushion Spring -Replacement

Pin Spanner: 07702-0020001

①Jack up a main frame. Set a jack on step stand or between a rear tire and seat rail.

②Detach a rear cushion from the frame body.

③Unscrew rock nuts by pin spanner and loosen adjuster up to the limit.

④Heave a spring sheet and detach a stopper plate. Exchange the spring.

⑤Confirm the setting of spring placement as above.

⑥After the trial run adjust performance if necessary.

Screw torque Rear cushion UP/LOW: 5.5kgf•m

(4)Rear Cushion - Height Adjustment

①Unscrew nuts placing rear cushion bracket to cross pipe.

②To adjust a height, set the plate(build your own as pg1-14ae.jpg) between the cross pipe and cushion bracket and screw tighten.

Using 1mm thick plate makes adjusting about 3mm body height on RR acceleration.

It is recommend to make two each kinds of plates, 1mm thick plate and 2mm thick plate

12. Front Brake Hoses Set

• Set hoses as go through inside of front fork pipe(See pg1-14ae.jpg).

13. Spark Units Set

- It is necessary to use the unit with wire harness together. Kill switch is used as main switch.
- Setting of wire harness (See pg1-15e.jpg).

14. Tappet Clearance -Adjustment

	IN	EXH
Base Vehicle	0.15	0.25
Racing Kit	0.20	0.30

15. Breather Case Set -Install

- Set an air-tube from breeze case COMP to air cleaner case as blowby gas exhaustion is prohibited.

①Attach the breeze case COMP to the seat rail (if necessary, make a stay).

②Set an oil breeze hose to the seat rail with tie strap (See pg1-16ae.jpg).

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PLEASE NOTE THAT THIS TRANSLATION OF THE JAPANESE HRC RVF400RR RACE SETUP MANUAL WAS MADE POSSIBLE BY THE FOLLOWING PEOPLE:

Pete Panagi of the NC30 Owners Club in England: He supplied the part number for the HRC RVF400RR manual.

Me, Todd S. Thompson: I obtained the manual while in Okinawa Japan with the United States Air Force and did all the scanning and some fine tuning.

Yoko Koh from Osaka Japan: If you want to thank someone for this manual translation then thank Yoko, she spent many hours translating the Japanese to English. I would like to encourage you to stop by her web site or send her an email thanking her for all of her hard work. All the NC35/RVF400 riders of the world owe her for her time and her work!!!!

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