



## Instruction Manual for KEIHIN PE28 Racing Carburetor Kit

Item No.	: 0 3 0 5 0 1 9 3	(Carburetor Kit)
	: 0 3 0 2 2 5 6	(Inlet Pipe Kit)
Compatible Head	: Super Head only	
Fitting	: NSF100	

- Thank you for purchasing one of our TAKEGAWA's products. Please strictly follow the following instructions in installing and using the kit.
- Before installing the kit, please be sure to check the kit contents. Should you have any questions about the kit, please contact your local motorcycle dealer.

**Please note that, in some cases, the illustrations and photos may vary from the actual hardware.**

### Please read the following before starting the installation

We do not take any responsibility for any accident or damage whatsoever arising from the use of the kit not in conformity with the instructions in the manual.

We shall be held free from any kind of warranty whatsoever of products other than this product if the glitch takes place on the other products than this one after the installation and use of this product.

You are kindly requested not to contact us about the combination of our products with other manufacturers'.

This carburetor kit is designed for exclusive use in a motorcycle equipped with a TAKEGAWA-made super head bore-up kit. This cannot be installed to a stock engine.

This carburetor kit is developed for a racing purpose only. You are not allowed to drive your motorcycle on the public road with this kit alone without installing other necessary parts.

#### CAUTION

The following show the envisioned possibility of injuries to human bodies and property damage as a result of disregarding the following cautions.

- Always use a torque wrench to screw bolts and taps tight to the specified torque. (Otherwise, these parts may get damaged or fall off.)
- Work only when the engine and muffler are cold at below 35 degrees Celsius. Otherwise, you will burn yourself.
- Do the installation with right tools. (Otherwise, breakage of parts or injuries to yourself may take place.)
- As some products and frames have sharp edges or protruding portions, work with your hands protected. (Otherwise, you will suffer injuries.)
- Before riding, always check every section for slack in parts like screws. If you find slack ones, screw them securely up to the specified torque. (Otherwise, improper tightening may cause parts to come off.)
- Never look into the carburetor's intake pipe carelessly when the engine is running. Flames could spurt by the spitting-back of gasoline or backfire, which involves danger.

#### WARNING

The following show the envisioned possibility of human death or serious injuries to human bodies as a result of disregarding the following cautions.

- Those who are technically unskilled or inexperienced are required not to do the work. (Improper installation because of insufficient skill or knowledge could lead to parts breakage and subsequently to accidents.)
- Before riding, be sure to check every section for slack in parts like screws, and oil leak. When you notice something abnormal with your motorcycle while riding, immediately stop riding and park your motorcycle in a safe place to check what has gone wrong. (Otherwise, the abnormality could lead to accidents.)
- Always start the engine in a well-ventilated place, and do not turn on the engine in an airtight place. (Otherwise, you will suffer from carbon monoxide poisoning.)
- Before doing work, make sure your motorcycle is secure on level ground for safety's sake. (Otherwise, your motorcycle could overturn and injure you while you are working.)
- As gasoline is highly flammable, never place it close to fire. Make sure that nothing flammable is near the gasoline. Since vaporized accumulation of gasoline is at high risk of explosion, work in a well-ventilated place. (Otherwise, it may cause a fire.)

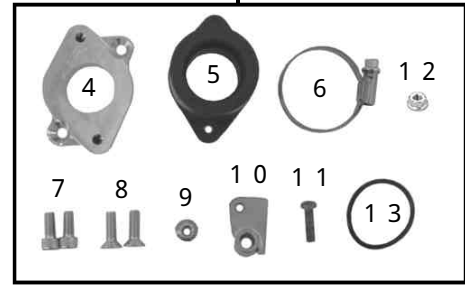
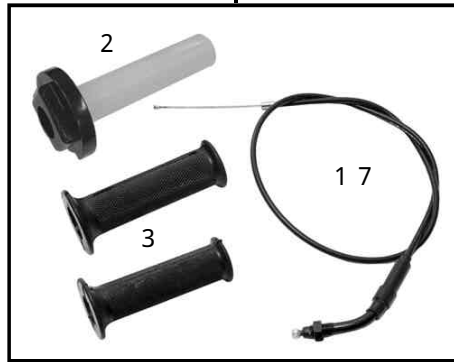
Please be informed that, mainly because of improvement in performance, design changes, and cost increase, the product specifications and prices are subject to change without prior notice.

This manual should be retained for future reference.

~ Kit Contents ~

0 9 0 2 0 2 2 2

0 3 0 2 2 5 6



No.	Part Name	Qty	Repair Part Item No.	Qty
1	Carburetor Assembly	1	03-03-027	1
2	Throttle COMP.	1		
3	Throttle Grip Rubber Set	1	09-02-0002	1
4	Inlet Spacer	1	17111-NX2-T01	1
5	Insulator	1	16212-181-T01	1
6	Norma Torro Band	1	00-00-0050	1
7	Socket Cap Screw, 6x15	2	00-00-0042	10
8	Flat Screw, 6x20	2	00-00-0138	6
9	Collar	1		1
10	Cable Holder	1	00-03-0204	1
11	Truss Screw, 5x30	1		1
12	Flange U nut, 5mm	1		1
13	O-Ring	1	00-03-0008	1
14	Main Jet, #110	1	00-03-0094	1
15	Main Jet, #115	1	00-03-0096	1
16	Slow Jet, #35	1	00-03-0137	1
17	Throttle Cable, 710 mm	1	09-02-0071	1
	Soft Cushion	1	00-03-0205	5
	Hex Wrench, 3 mm	1		
	Hex Wrench, 5 mm	1		

Item No. 03-02-256 shows those parts included in the manifold kit.

Please note that in ordering repair parts, be sure to quote the Repair Part Item No. Otherwise, we may not be able to accept your orders.

There are some parts, however, for which we are not in a position to accept your order in just the quantity to be used. In this case, please take them in the quantity packed.

Factory preset mode of the carburetor

Main jet	#128
Slow jet	#52
Jet needle	F1343H24NAAC
Clip position	2nd groove from top
Throttle valve cut-away	# 6.0
Air screw opening	1 ± 1/4 turns

[ Setting parts ]

Main jet:

#82,#85,#88,#90,#92,#95,#98,#100,#102,#105,#108,#110,#112,#115,#118,#120,#122,#125,#128,#130,#132,#135,#138,#140,#142,#145,#148,#150,  
#152,#155,#158#160,#162,#165,#168,#170,#172,#175,#178,#180,#182,#185,#188,#192,#195,#198,#200

Slow jet:

#35,#38,#40,#42,#45,#50,#52,#55,#60,#62,#65,#68,#70

Setting of a carburetor must be adjusted depending on the natural phenomena like the weather, temperatures and barometric pressure, and machine and carburetor themselves. Arrange the setting to match the engine and other conditions.

An air filter, etc. are not included in this carburetor kit, or a stock air cleaner cannot be installed, either. Therefore, the engine will go wrong if water gets into the engine. So, please refrain from driving in the rain. Besides, before washing your vehicle, cover the carburetor with a plastic sheet or the like to prevent water from getting into the carburetor.

## ~ Installation Procedures ~

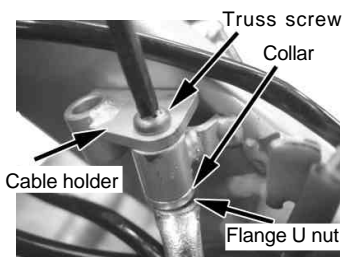
The installation of this kit is subject to the condition that a bored-up engine is mounted on the frame.

Detach the inner cable of the clutch cables from the receiver, and for the moment detach the clutch cables from the frame.

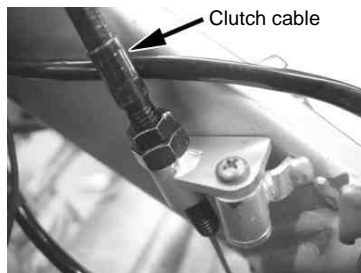
Install the supplied clutch cable holder to the clutch-cable-holding portion on the frame using a collar, M5x30 truss screw, and M5 flange nut. And tighten the flange nut to the specified torque.

△Note: Be sure to tighten to the specified torque.

**Torque: 5.1 N · m (0.52 kgf · m)**



Pass the clutch cable through the cable holder just installed onto the frame. And connect the inner cable to the receiver. And adjust the clutch just as you do with the normal one.



Attach an O-ring to the groove on the supplied inlet spacer. And install the inlet spacer to the cylinder head with the supplied two flat head screws, and tighten the screws to the specified torque.

△Note: Be sure to tighten to the specified torque.

**Torque: 10 N · m (1.0 kgf · m)**

Attach the supplied insulator to the just-installed inlet spacer with the supplied two socket cap screws. And tighten the screws to the specified torque.

△Note: Be sure to tighten to the specified torque.

**Torque: 10 N · m (1.0 kgf · m)**

Attach the insulator band to the just-installed insulator.

Detach the stock throttle housing.

Fit the supplied throttle cable into the lower throttle housing, and connect the inner cable to the throttle pipe. And attach the throttle housing to the handle pipe with two screws, and tighten the screws.

In fitting the parts as above, apply grease to the rubbing surface of the throttle pipe, inner cable end, and to the cable taking-up portion.

△Note: Be sure to tighten to the specified torque.

**Torque: 5.1 N · m (0.52 kgf · m)**

Route the throttle cable to the frame, but do not pull the cable forcibly not to bend it.

Detach a float chamber from the supplied carburetor, and detach normal main and slow jets, and attach the supplied main and slow jets.

Remove a top cover from the supplied carburetor, and pull out the spring and the throttle valve. Pass the inner cable of the throttle cable through the carburetor top cover and then through the spring. And compressing the spring, fix the cover top and all to the throttle valve. Fix the throttle valve to the carburetor by aligning a notch on the throttle valve with the throttle stop screw.



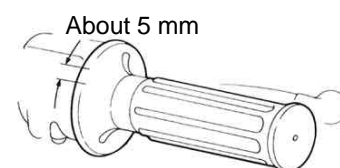
Fit the carburetor into the insulator, and set its location where the carburetor does not interfere with the frame.

Affix the supplied soft cushion to the carburetor but at the place where the carburetor and frame are almost closest to each other.



Tighten an insulator band to hold the carburetor firmly.

Adjust the free play at the throttle grip to be about 5 mm by turning the adjuster of the throttle cables.



Apply lightly the adhesive, Cemedine F540, to the throttle pipe, and by turning the grip, fix the grip before the adhesive gets dry.

Apply lightly the adhesive, Cemedine F540, to the throttle pipe, and by turning the grip, fix the grip before the adhesive gets dry.

Snap the throttle a few times to make sure that the throttle moves smoothly without sticking and that the throttle valve is fully open. Also check that the throttle has free play even when a steering handle is turned all the way to the right or to the left.

Insert a fuel tube and fasten it with a tube clip. Open the fuel cock and check for oil leaks.

(Do not leave the cock open for many hours.) Pull the choke lever to start the engine.

Gradually push the lever back and warm up the engine till the revolution becomes smooth, and finally push the lever back to its original location.

In case the engine does not run idle after the warm-up of the engine, or the engine idling speed is high, adjust the setting by turning the throttle stop screw.

Adjust the setting with utmost care in a safe place to meet the specification of each motorcycle.

**SPECIAL PARTS TAKEGAWA Co.,Ltd.**

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# How to Set the Carburetor

- When the carburetor does not match the engine and the engine fails, the engine failures are caused by either too dense or too lean air-fuel mixture.
- The engine failure symptoms for the engine are as follows:

When the air-fuel mixture is too dense:	When the air-fuel mixture is too lean:
<ul style="list-style-type: none"> <li>• The explosion sound with a dull thud continues intermittently.</li> <li>• The engine malfunctions further if you use the choke.</li> <li>• The engine malfunctions when you warm it up.</li> <li>• The engine works well if the cleaner is detached.</li> <li>• The motorcycle belches dense (or, black) exhaust gas.</li> <li>• The plug smolders, getting blackened.</li> </ul>	<ul style="list-style-type: none"> <li>• The engine overheats somewhat.</li> <li>• The engine starts working well if you use the choke.</li> <li>• The engine does not accelerate well. (No smooth acceleration)</li> <li>• Revolutions change, generating weak power.</li> <li>• The plug burns white.</li> </ul>

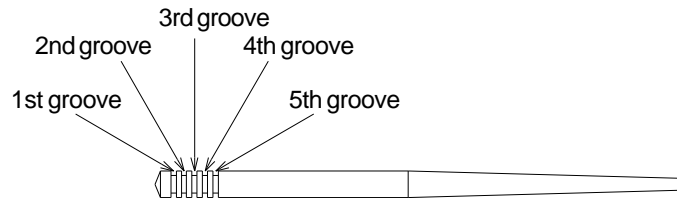
Set the carburetor only after warming up the engine, and then test-drive. And use a plug with the right heat value. Do the setting in the following manner, studying at what throttle opening position the engine starts failing.

## Jet needle (Throttle position at 1/4 - 3/4)

Whether or not the engine revolution is in proportion to the throttle operation

- When the acceleration is not smooth or even, make the air-fuel mixture dense.
- Make the air-fuel mixture lean when the engine revolution goes up heavily and belches black gas.

The mixture ratio at this throttle position can be adjusted by the location of E-ring in the grooves. The air-fuel mixture becomes dense as the location of the E-ring moves down from the 1st to the 5th groove.



## Main jet (The throttle position at 3/4 - 4/4)

The air-fuel mixture ratio at this throttle position can be adjusted by changing the number of the main jet. The larger the main jet numbers, the denser the mixture ratio becomes.

In view of the engine and muffler specifications, select the most appropriate main jet to get the highest revolutions.

## Pilot jet (First of all, please adjust the air screw.)

- In case you have given more than three turns to the air screw to tighten it, use a pilot jet with a small number.
  - If you have tighten the air screw (clockwise) to the full, use a pilot jet with a larger number.
- Check whether you have made a right choice of the pilot jet by seeing if the engine starts up revolving smoothly from the idling to running at slow speed.
- When the engine revolves up unevenly, the pilot jet number is too small. (At idle)
  - When the motorcycle belches black exhaust gas and produces heavy exhaust sound, the pilot jet number is too big. (At idle)
  - After replacing the pilot jet, you need to readjust the airscrew.

## Air screw

The air screw adjusts the air mass flow at the time of engine's revolving at slow speed. (At idling)

- Give the air screw a right turn The air-fuel mixture gets dense.
- Give the air screw a left turn The air-fuel mixture gets lean.

Loosen the tightened air screw back to the 1.5-turn position. And then from this position, give to the airscrew a right or left turn of 1/4 to 1/2 till the engine revolves at the highest speed.

Loosen the idle stop screw till you get the steady idling revolutions. And once again adjust the position of the airscrew to get the highest revolutions.

## On how the barometric pressure, temperatures and humidity affect the setting:

- At highlands or at high altitudes, the barometric pressure and air density go down and the air gets into the carburetor in less amounts. This makes the air-fuel mixture dense which was adjusted at low altitudes.
- Under the weather conditions with very low temperatures, the air density increases, which makes the air-fuel mixture lean.
- Under the rainy and humid weather conditions, the air density decreases, which makes the air-fuel mixture dense.

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