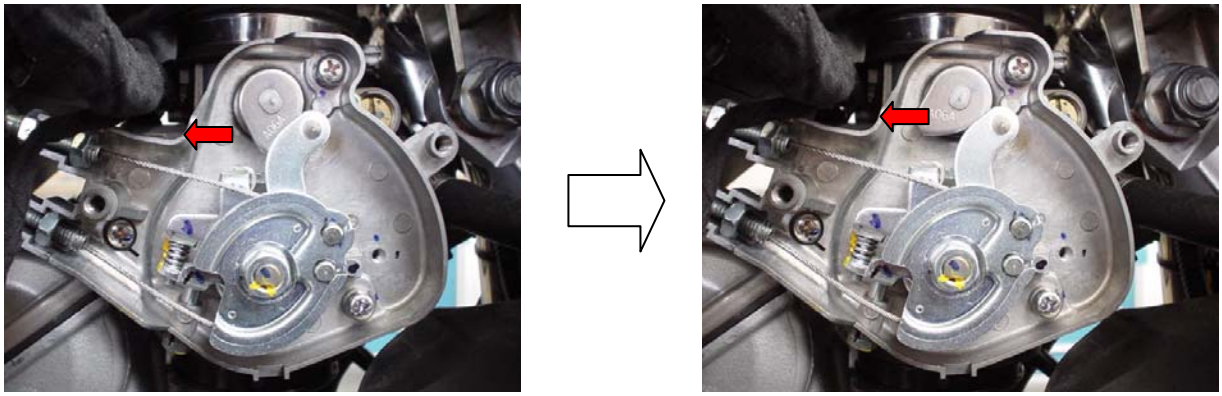
1. Exchange of main TPS (Throttle Position Sensor)

1-1. Adjustment of main TPS output.

a) Full open the secondary valves.



b) Confirm that main throttle levers touched to closed stopper.

c) Adjust the main TPS output to 0.70V + - 0.02V.

d) Tighten a main TPS fixation bolt in 35 + - 7 Kgf.cm.

e) Open two or three times throttle levers and confirm that the main TPS output is in 0.70V + - 0.02V.

1-2. Clear of THREF value.

a) Please execute the “fs_loeschen” with a BMW diagnosis tool.

b) Please execute the “status_drosselklappenwinkel_referenz“ and confirm that THREF value is “18.1deg”. (“18.1deg” is initial value of THREF.)

1-3. Confirmation of throttle wire adjustment.

a) Full open the secondary valves.

b) Confirm that main throttle levers touched to closed stopper, when a throttle grip is completely closed.

1-4. Learning of THREF.

a) Confirm that neutral switch is working.

b) Warm up an engine with a neutral gear to more than water temperature is 70degC and less than 90degC.

c) Stop an engine.

d) Take off a BMW diagnosis coupler.

e) Wait for the end of self-shut down and confirm that IGP became OFF. (about 35sec)

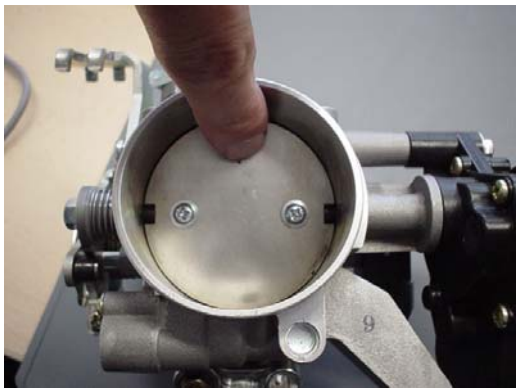
1-5. Confirmation of THREF learning value.

a) Execute “status_drosselklappenwinkel_referenz“ and confirm that THREF value less than “18.1deg”.

2. Exchange of secondary TPS.

2-1. Adjustment of secondary TPS output.

a) Push secondary throttle valve with a finger lightly and completely close secondary throttle valve.



b) Adjust the secondary TPS output to 1.10V + - 0.02V.

c) Tighten a secondary TPS fixation bolt in 35 + - 7 Kgf.cm.

d) Open two or three times secondary throttle valve and confirm that the secondary TPS output is in 1.10V + - 0.02V.

2-2. Clear of secondary TPS minimum (STHADLL) and maximum (STHADHH) reference value.

a) Please execute the "fs_loeschen" with a BMW diagnosis tool.

b) Please execute the "status_drosselklappe_2_ref_spannung_min (STHADLL) "and "status_drosselklappe_2_ref_spannung_max (STHADHH)".

c) Confirm that STHADLL value is "1.152V" and STHADHH value is "4.448V". (These values are initial value of STHADLL and STHADHH...)

2-3. Learning of STHADLL and STHADHH..

a) After "2-2 c)" end, take off a BMW diagnosis coupler.

b) Wait for the end of self-shut down and confirm that IGP became OFF. (about 35sec)

1-5. Confirmation of STHADLL learning value.

Execute "status_drosselklappe_2_ref_spannung_min" and confirm that STHADLL value less than "1.152V".

Attention.

1. When you change TPS (main or secondary), please change a fixation bolt and O-ring at the same time.
2. When you execute "fs_loeschen", all reference value is cleared.
   Therefore, you need execute both learning when you changed either main TPS or secondary TPS.