

Mounting instruction for Item N°. 9440 Hydraulic brake system f. front and rear axle

suitable for FG 1:5 and Race Truck models. Not fitting for Porsche GT2 models with short wheelbase. Also suitable for 1:5 scale models of other manufacturers.



FG Modellsport-Vertriebs-GmbH
 Franz Gröschl
 Spanningerstr. 2
 73650 Winterbach-Germany
 Phone: +49/ 7181/ 9677-0
 Fax: +49/ 7181/ 9677-20
 info@fg-modellsport-gmbh.de
 www.fg-modellsport-gmbh.de

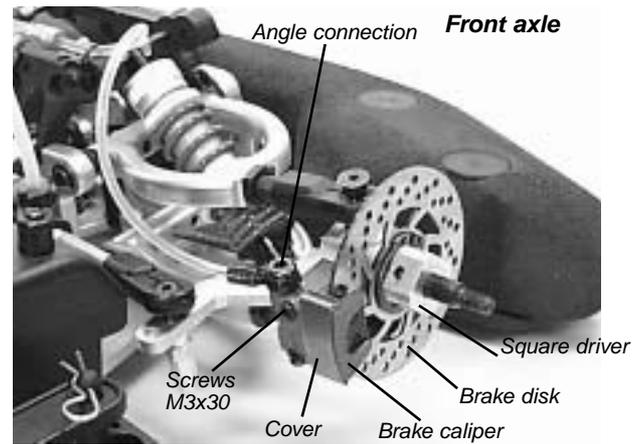
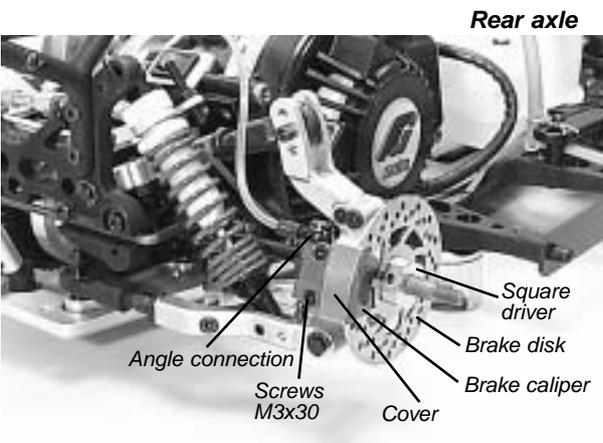
A few general tips before you start the assembly:

Hydraulic transmits mechanical pressure by a non-compressible fluid. Therefore the operability depends to a high degree on the tightness of the complete system, especially though on the tightness of the connections and the operability of the gaskets. This requires a careful handling while mounting, servicing or repairing the brake system. Never operate the brake system as long as it isn't fixed in the car (without brake linings and brake disks) as otherwise the pistons in the brake caliper will be pressed out. For a good braking power you need servos with at least 8 kg regulating power. The brake achieves its optimal effect after about 30 minutes running time. Then all gaskets, linings and brake disks have their optimal driving performance.

Mounting of brake calipers at front and rear axle

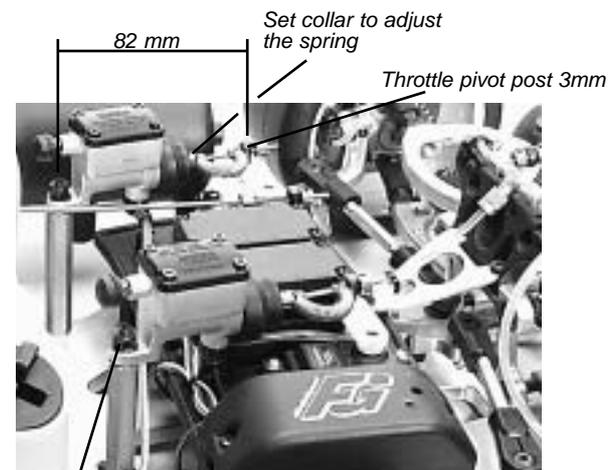
The hydraulic disk brake can and should only be mounted in connection with front alloy uprights Item N°. 4403 and rear alloy uprights Item N°. 6467. Push the included brake disks on the square driver. Then mount the complete brake calipers with the included screws M3x30 to the alloy uprights as shown on the picture, use FG securing lacquer 6504. Make sure the brake disk lays between the two brake linings. For an easier mounting push back the inner brake lining (piston side) a little.

Install the transparent brake lines stressfree, check this also during steering movements of the front axle. Don't press or squeeze the brake lines. If necessary, loosen the angle connection at the brake caliper and turn it into a better position for the brake line.



Mounting of the main brake cylinder

Mount the main brake cylinder parallel to the servo. Take care of the assembly height, the piston towing bar must be in true alignment with the boring of the throttle pivot post 3mm. Don't tighten the M5 stop nut to fasten the main brake cylinder at the stud bolt (adjust about 1mm free motion) to avoid a warping of towing bar and piston. Mount the included plastic bush between stud bolt and location hole of main brake cylinder. Secure all metric screws with screw securing lacquer.



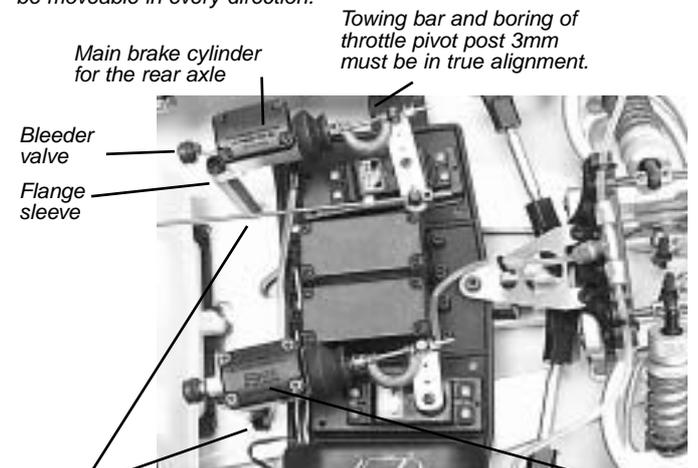
Installation/ shortening of the brake line

When installing the brake lines please take care that there is a minimum radius of 70mm at flexible motion and a radius of at least 30mm at fixed installation. Avoid an abrasion of the brake lines during the operation of the vehicle and make sure that the lines are not too near to hot vehicle parts as manifold or silencer.

If a shortening of the brake line is necessary, then proceed as follows: Loosen the swivel nut of the angle connection at the main brake cylinder (fork wrench SW6) and pull off the brake line carefully. If you act cautiously the oil will remain in the brake line according to capillarity. Shorten the line with a sharp knife or the FG ripping knife 9449 (never use a saw or pincers!). Push the swivel nut together with a new clamping ring over the brake line. Now press the clamping ring with the swivel nut completely on the angle connection of the main brake cylinder and tighten the swivel nut (max. 1Nm torque). Keep to this prescribed torque as a too tight swivel nut can cause a constriction of the line.

Important! The screw connections of a shortened line have to be checked through pulling the line. Also test the density of the complete brake system which means: Pull the towing bar of the main brake cylinder, hold it in this position and check all connections and lines on leakage. To achieve a 100% braking power deventilate the complete brake system after every shortening.

Don't tighten the M5 stop nut. The main brake cylinder should be moveable in every direction.



The chassis borings must be placed in linear link to the servo. Bore the chassis with 5,5mm and countersink it with 90° from underneath.

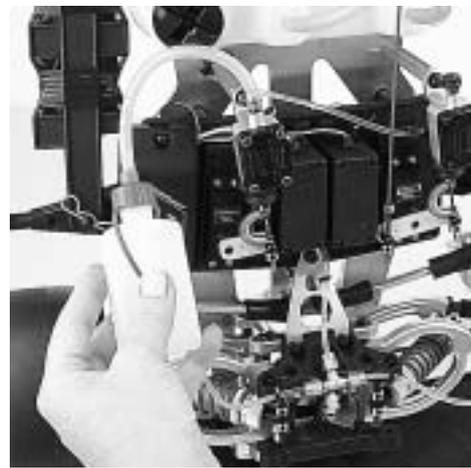
Main brake cylinder for the front axle



Press the injection with filling hose on the valve.
Open the valve and press the hydraulic oil slowly through the brake system.

Filling and ventilation

For filling and deventilation bring the system into following position: Place the bleeder valve of the main brake cylinder in the highest possible position. In this case upend the vehicle, possibly lean it against a wall. Press the silicone filling hose on the injection 9451 and fill it with FG Hydraulic oil 9452 through pulling the injection ram. Attention! Don't use brake fluid of car industry. Now press the filling hose on the valve of the brake caliper. Make sure there is no remaining air in filling hose and injection. Push another filling hose with plastic bottle 9452/1 on the valve of the main brake cylinder. Now open the valves of the brake caliper and main brake cylinder for 3/4 rotation. Close the main brake cylinder completely with towing bar 3mm. Press the hydraulic oil with the injection through the brake system until the hydraulic oil appears at the main brake cylinder without visible air bubbles. You can collect this overflowing oil with the plastic bottle 9452/1. In order to avoid an overpressure in the plastic bottle, bore a 1mm hole into the cap of the bottle. Hydraulic oil from a new brake system can be used again, but don't use oil out of an already used brake system.



Open the bleeder valve. Close the main brake cylinder completely.
Collect the overflowing oil at the main brake cylinder with plastic bottle 9452/1.

Changing of brake linings

To change the brake linings clip off the covers of both brake calipers with a screw driver and pull out both brake linings. Before inserting the new linings press the piston in the brake caliper carefully back with a screw driver. Afterwards secure the brake linings through clip-sing on the covers.

Problems and their solution

Not enough braking power	Servo too weak, min. 7,5kg Servopath is not sufficient
Brake opens too slow	Swivel nuts are too tight and have constricted the cross section, exchange the clamping rings.
One wheel brake cylinder acts more slowly than the opposite.	
Brake acts immediately, but hasn't got enough braking power.	Air in the brake system, deventilate the system.
Not enough braking power after repeated usage of the brake.	The main brake cylinder doesn't close completely, displace the set collars at the towing bar.

Spare parts list

- 5019/3 Throttle pivot post 3mm, 2 pcs.
- 6020/3 Collet set 3,1mm, 4 pcs.
- 9440/1 Brake caliper, 1 pce.
- 9440/2 Piston, set
- 9440/3 Cover, 2 pcs.
- 9440/4 Screws M3x30 f. brake caliper, 4 pcs.
- 9440/5 Cylinder, 1 pce.
- 9440/6 Expansion bend, 2 pcs.
- 9440/7 Top, 2 pcs.
- 9440/8 Disk/ bearing/ securing ring, 3 pcs.
- 9440/9 Gaskets, 2 pcs.
- 9440/10 Piston with collar, 1 pce.
- 9440/11 Protecting expansion bend, 2 pcs.
- 9440/12 Towing bar 3mm, 1 pce.
- 9440/13 Hexagon socket screw M2,5x10, 4 pcs.
- 9440/14 Banjo bolt with angle connection, set
- 9440/15 O-ring, 8 pcs..
- 9440/16 Clamping ring, 8 pcs..
- 9440/18 T-piece, set
- 9440/19 Clamping ring, 8 pcs.
- 9440/20 Supporting bush f. brake line, 8 pcs.
- 9440/22 O-ring, 8 pcs.
- 9440/23 Magnet, 2 pcs.
- 9440/25 Valve 2 pcs.
- 9440/26 Protection cap, 4 pcs.
- 9440/28 Flange sleeve, 4 pcs.
- 9440/29 Extension spring, 2 pcs.
- 9440/30 Brake line transparent 1m, 1 pce.
- 9440/31 Brake line black 1m, 1 pce.
- 9440/34 Stud bolt set
- 9440/35 Flange sleeve, 2 pcs..
- 9441 Brake lining, 2 pcs.
- 9445 Brake disk, 2 pcs.
- 9448 Service kit, set
- 9449 Ripping knife for brake lining, 1 pce.
- 9451/1 Injection, 1 pce.
- 9452 FG Hydraulic oil 50ml, 1 pce.
- 9452/1 Plastic bottle 50ml/Silicone tube, set



Mounting instruction 9440
Hydr. brake system 1:5/ Jan. 03

Picture shows some tuning parts which are not included in the delivery.

