

The company reserves the right to make updates and modifications. The following are prohibited: reprinting, reproduction, forwarding to unauthorized people and/or third parties, and translation, including partial, without written authorization from GTE Engineering LLC.

Actuator and Power Unit Installation Instructions

Read Manufacturer instructions carefully for Diagnostic, Disassembly and Assembly instructions.

Have all proper tools and Diagnostic equipment ready and Master the Workshop Manual.

The **"Assembly"** Calibration needs to be made by the **"Same Technician or Team"** that made the **Disassembly**.

Make sure that you have a good battery (min 12.6v) in car and Alternator (Charge - Fan/AC OFF 13.8-14.2)!
Car Voltage needs to be at min 12.6V max 14.2V for programming. Charger Off at the time of Programming.

NOTE: Inform Customer **BEFORE! That if:** After F1 Service if the TCU EPROM are deteriorated (not holding new data or cannot relearn new information) at self learning! You may need a NEW TCU!

Self learning is only possible if the NODE is in good condition. One way to test is Self learning...

- Recommended Test drive 90Km / 55Mil with 5 cold starts to begin within 20 sec delay. 5 Drive and Stop up to 2. gear 30km. "IO" 5 on and off with 10 sec delay.

If you are installing an Actuator (Set) do the Flushing procedure first and wait till oil is free of air. "3 times" (20 min / some times one day) and go to next procedure.

At system bleeding procedure use ONLY manufacturer recommended Oil! (Mobil ATF LT 71141 Spec or enhanced quality)

If you are required to do a fork alignment make sure that you correctly lock (if applicable) the opposite side of actuator, on Transmission side before disassembly of the actuator. For use on systems 612/355/575 Uses an external shaft that needs to be 1. an alignment via Diagnostic tool (Actuator Alignment Procedure) before locking and removing/disassembling the Actuator from its extension! You will need special tools for locking the Transmission side (if applicable) please see the Manufacturer's workshop manual for AV tool(s) codes. Tools Can be Purchased via a Dealer or by:



<http://www.ricambiameica.com/collections/tools-ferrari.html>

The F1 System is one part of the Transmission, it works with the Engine and E-Diff etc... make sure that you understand all working parts and you master their relations. Diagnostic Codes may or may not register under some circumstances! A Self learning is one of the best Diagnostic Functions to see if the F1 system operates correctly & within tolerances. NOTE: After all Self Learning Procedure once you see the "N" need to tune the KEY OFF for 5 minutes.

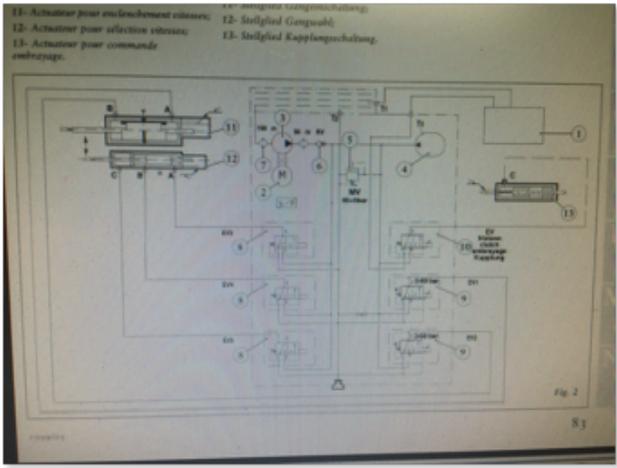
The company reserves the right to make updates and modifications. The following are prohibited: reprinting, reproduction, forwarding to unauthorized people and/or third parties, and translation, including partial, without written authorization from GTE Engineering LLC.

After an Actuator Service, it is recommended to change the old F1 Pump and Accumulator due to delta thresholds set for Actuator/Clutch Timing performance.

MARCIA GEAR	ELETTROVALVOLA SOLENOID VALVE:	EV1	EV2	EV3	EV4	EV5
	COLORE CONNETTORE: CONNECTOR COLOUR:	GRIGIO GREY	BLU BLUE	BLU BLUE	NERO BLACK	GRIGIO GREY
1		ON		ON		ON
2			ON	ON		ON
3		ON		ON	ON	ON
4			ON	ON	ON	ON
5		ON		ON	ON	ON
6			ON		ON	ON
RM			ON	ON		

Sul corpo Power Unit, in prossimità dell'attacco tubi, sono stampigliate le sigle:
 • EVF (elettrovalvola frizione);
 • EV1, EV2, EV3, EV4, EV5 (elettrovalvo-

On the Power Unit, near the pipe connection, are printed two initials:
 • EVF (Clutch solenoid valve);
 • EV1, EV2, EV3, EV4, EV5 (solenoid valve engaged gear).



If the car is equipped with an F1 system and F1 Oil Pump, make sure that the F1 pump, Accumulator, EV1,2,3,4,5-F electro valves and the Actuator is not leaking oil out at all!

Keys to Fig. 1
 1 - Clutch actuator
 EVF = Clutch solenoid valve (Black connector)
 EV 1 - 2 = Engagement solenoid valves
 EV 3 - 4 - 5 = Selection solenoid valves

Keys to Fig. 2
 1- Oil tank;
 2- Pump control motor;
 3- System supply pump;
 4- Hydraulic accumulator;
 5- Max pressure valve;
 6- Check valve;
 7- Oil filter;
 8- On/off solenoid valves for gear selection;
 9- Delivery proportional solenoid valve for clutch control;
 10- Pressure proportional solenoid valves for gear engagement;
 11- Gear engagement actuator;
 12- Gear selection actuator;
 13- Clutch control actuator.

Pictures Copy Rights Ferrari Spa.