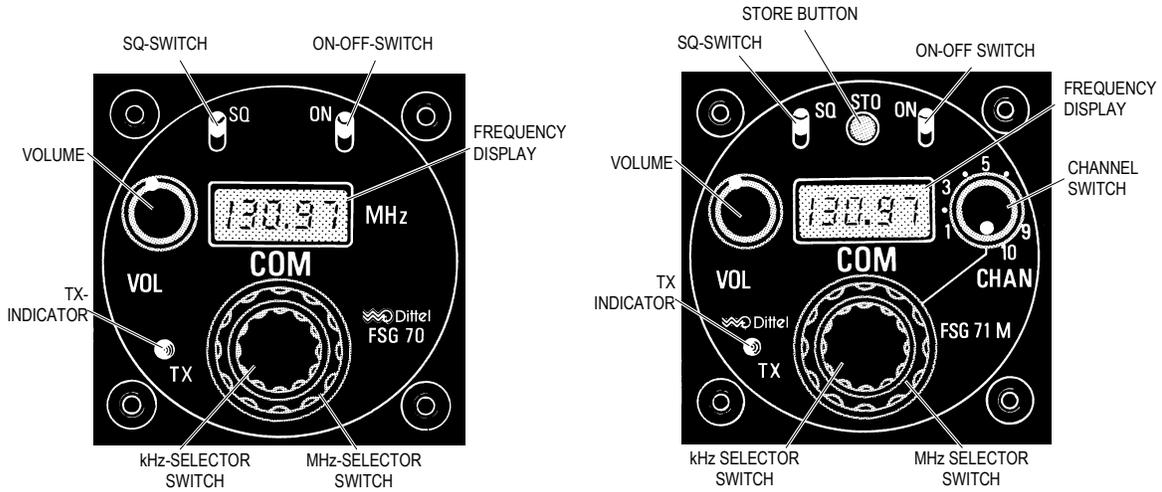


**Section IV      Operation**

**4.1      Control Functions**



**Fig. 4-1:      Controls and readouts**

Controls Readouts	Description	Function
OFF/ON	Toggle switch with two positions	Lever down:      Power OFF Lever up (ON):    unit supplied with power
VOL	Potentiometer	To increase the RX-volume rotate the knob clockwise.
SQ-Switch	Toggle switch with two positions	Lever down: The squelch circuit is off. Basic RX-noise is audible. Lever up (SQ): Common position, the squelch circuit is activated. Only reception of signals above SQ-threshold.
Frequency display	5-digit liquid crystal display, internal lighted	Shows the operation frequency in digital form set from 118.00 to 136.97 MHz. Last digit "5" or "0" does not appear. Blinks if power supply drops below 11Vdc.
kHz Selector	inner rotary knob with 40 detents	Sets frequency in 25 kHz increments (.000 - 975)
MHz Selector	Outer rotary knob with 19 detents (stops at 118 and 136 MHz)	Sets frequency in 1 MHz increments (118. - 136.)
TX Indicator	Yellow LED	Lights during depressing the push-to-talk switch.

Additional at <b>FSG 71M</b>		
Controls Readouts	Description	Function
CHAN Channel selector switch	Rotary knob with 11 detents	Knob fully clockwise: Frequency free selectable by MHz- and kHz knobs.  Knob on position 1 through 10: Recall or storage of channel frequencies. Refer to Section 4.3 or 4.4.
STO button	Push button	By depressing the STORE-button the displayed frequency is entered in one of the 10 electronic memories provided that the CHAN switch is at one of the 1 through 10 position.

## 4.2 Operating Instructions

Turn ON the transceiver with the right toggle switch (lever up "ON").

Select the desired operating frequency by rotating the increment/decrement knobs either clockwise or counterclockwise. A clockwise rotation will increment the previous frequency while a counterclockwise rotation will decrement the previous frequency.

The larger inside knob will change the MHz-portion, the smaller outside knob will change the kHz-portion. At one band-edge (000 or 975 kHz) the following 25 kHz change will wrap around to the other band-edge.

### **FSG 71M:**

To select the desired operating frequency rotate the channel selector fully clockwise.

To tune the radio to a stored operating frequency rotate the channel selector switch to the desired channel no. (1 to 10). The receiver is always tuned to the frequency appearing in the display.

Set the left toggle switch to "Squelch OFF"-position (lever down) to override the automatic squelch and rotate the "VOL" knob for desired listening level on the noise being produced by the receiver. Set the left toggle switch to "SQ" (lever up) to activate the automatic squelch.

A warm-up period is not required. However, at temperatures of -20°C, the LC display needs approx. 1 sec. until it is fully visible when frequency is changed.

For transmit operation select the desired frequency, depress the push-to-talk button and speak into the microphone. The microphone must be kept close to the lips in order to cancel noise like from the engine etc. Enunciate clearly at a constant loudness.

During transmit operation, the yellow LED "TX"-indicator will light on the front panel, signaling that the push-to-talk button is depressed.

During receive operation rotate the "VOL" knob for desired volume.



### **IMPORTANT!**

- If radio is battery powered frequent transmitting and loud receiver volume reduce available operating time.

### 4.3 Programming the Channel Frequency Memory (FSG 71M only)

The **FSG 71M** transceiver is equipped with 10 memory cells which are able to store one frequency each in the range from 118.000 to 136.975 MHz. The stored frequencies are non-volatile.

1. Rotate channel selector knob fully clockwise.
2. Select the desired frequency by rotating MHz- and kHz knobs.
3. Rotate channel selector knob to desired channel number (1 to 10).
4. Enter the frequency by depressing (approx. 1 sec.) the store button (STO) into the memory. If a frequency is already stored in that certain channel it will be overwritten. The function of the STO button is electrically delayed to reduce memory loss caused by accident touching.

### 4.4 Recall of Stored Frequencies

Rotate channel selector knob to desired channel number. The stored frequency will appear on the display and the transceiver is tuned.



#### Only for Users of FSG 71M Transceivers

If the built-in battery of the electronic memory is defective, the memory content is lost when the unit is switched OFF. For safety reasons the memory battery should be changed every five to six years by authorized personnel (recommended date of change see separate tag on unit).

### 4.5 Battery Check

The **FSG 70-System** transceivers indicate low battery voltage by causing the frequency display to blink if the power supplied drops below 11 volts.

#### When operating from battery:

Depending on battery capacity and the duration of transmit operation, the following operating times may remain after blinking starts until the battery is fully exhausted.

Reference: approx. 20°C, 6.5 Ah battery, feeding only the transceiver. Operating conditions: 10% transmit, 20% receive, 70% stand by

ACTION	CONSEQUENCE
a) Blinks while transmitting	Approx. 5 hrs. operation left
b) Blinks also while receiving	Approx. 45 min. operation left Recommendation: Transmit only when absolutely necessary!
c) Short-time blinking in "stand by" mode (switch at "SQ" position, no reception)	Cease transmitting! Approx. 45 min. of receive-only operation left.
d) Continuous blinking in "Stand by" mode	Turn off unit! Recharge battery as soon as possible! (Refer to Section 4.7 Emergency Operation)



#### IMPORTANT!

- The transitions for a), b), c), and d) have fluent character, the battery recovers somewhat after load is reduced.

When operating from aircraft's power system

Blinking frequency display:	The aircraft's power system must soon be investigated!
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When operating from 28 V aircraft power system

Blinking frequency display:	Check voltage regulator and aircraft's power system.
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#### **4.6 Emergency Operation**

In an emergency case, the unit can also be operated with supply voltages down to 9.7 Volts. The audio output and transmitting output are of course reduced.

Batteries must always be recharged immediately after emergency operation because extensive discharging incurs the risk of deterioration and permanent damage - this risk is increased if a discharged battery is also stored in that state.

#### **4.7 Squelch Function (SQ)**

With the left toggle switch in the "SQ" position (normal operation), the automatic squelch circuit of the unit, is active. This disables the audio amplifier when the receiver has no signal or one which is too weak. Signals stronger than the threshold (approx. 1µV) enable the audio amplifier and are therefore reproduced in the headphones/loudspeaker; annoying VHF noise is thereby suppressed. Also, considerable power is saved. If, however, very weak signals are to be received (e.g., a glider landing far from base), then the SQ toggle switch is placed in the down position. This permits noise during pauses, but weak signals of marginal strength are no longer suppressed, and the full reception range is available.

#### **4.8 Intercommunication (IC)**

1. Turn on IC mode with IC switch (refer to Fig. 3-7/3-8).
2. Intercommunication is performed via microphone and headphone.
3. Pressing the push-to-talk button activates the transmitter as usual - turning off the IC mode is not required.
4. After releasing the push-to-talk button intercom operation is re-enabled.

#### **4.9 Audio External**

Via the AF-Ext. input a second or third radio (or NAV-receiver, E-Variometer) can be connected to the transceiver. When wired for this purpose, the volume of the external receivers is/are to be set so the signals can be understood, and distinguished one from another.

The VOL control of the **FSG 70/FSG 71M** affects not the volume of the external units, and vice versa.