

MOREL SUPREMO 6

Established in the year 1975 by Meir Mordechai, Morel (acronym of Mordechai Electronics) builds speakers of the highest quality with the passion that an artist devotes to his creations. Intended for a “definitive” installation, the Supremo series components are Morel’s top production. We had the pleasure of trying out the first two-way Supremo system, planned exclusively for a car setting and designed for bi-amplification.

The “Supremo” system was planned specifically for the interior car environment, without crossover, to be used for bi-amplification! What a pleasure it is to try it on my car! At Morel they understand the value of a set of speakers, which are sold and installed by expert technicians for people with sensitive ears. These speakers are a great market opportunity.

What can be said about not including the passive crossover in the system? This news will please anyone who wants to get the maximum from multi-amplification. Just think how much power these transducers can produce, which can be left free without the overload protection usually integrated in the filters.

They can also be combined with the classic circuit, and Morel itself includes instructions about this subject in the product manual. In this case careful verification of everything is recommended so that the crossover will not break down first, causing the item to be useless. However I personally believe that the best use of the system is the one recommended by the producer: to combine it with a beautiful system, multi-amplified and seized in a professional way.

No-compromise

By looking at the package and at the paper material included, we learned that there is more than the ACS tested tweeter during June 2005 (number 144) behind the name Supremo. There are 2 tweeters (Supremo and Supremo Piccolo) and 3 woofers (Supremo Woofer 5, SW6, SW9, depending on the size in inches). The test set states that performances can be found at the beginning and after. Featuring: 200 watt RMS and 1,000 peak watt for each transducer (including the tweeters). It’s almost unbelievable.

My first reaction was: is this true? Morel is a brand name that does not play with numbers, but to state the same rated power for the woofer and the tweeter (even if it is a Supremo tweeter) seems really challenging. At this point I was a little doubtful but deep inside I was hoping due to the past brilliant experiences with Morel's speakers, it would work out. I headed for the tools box and the car, ready for some serious heat. We won't forget this July's heat, considered the World Cup's nights, Italy's victory against its transalpine cousins, the thermometer was always above 30° and a high fever virus affected me too.

Tweeter

The Supremo Piccolo is really small -just 67 mm in diameter. Practically a trifle, if we compare it with the full size Supremo's dimensions. The soft dome, covered with Acuflex, a Morel's patented material used to improve the sound parameters of its transducers, looks vaguely transparent and glossy, as if it had been oiled. The profile has a marked curvature, optimized to enable the huge frequency range that this splendid component promises, together with the considerable angular dispersion along with the cosmic rated power. This fragile and extremely light masterpiece of the electro-acoustic art is topped and protected by a strong metallic grill which transparent and neutral from an acoustic point of view, but fundamental for its purpose which is to function as a protective shield against mechanical accidents. To hold it tight in its place, only the attraction force created by the permanent magnet is used. The 28 mm diameter moving bobbin says a lot about its capacities, and even more if we take into account the double layer wrapping made of aluminum wire with hexagonal cross-section, on a base which is also made of aluminum. It also offers the highest packing of coils, the highest intensity of the magnetic field created by the bobbin, the highest thermal dissipation and high rated power. These are just some of the technical characteristics that differentiate this component from thousand of others that fill the magazines, catalogues and web sites pages.

SW6 upside down. Try not to put it in this position. Just for the picture, this is the only way to let you appreciate the wonderful 6 support enclosure with extraordinary thickness and hardness. Please note the moving bobbin support which is external with regard to the magnet.

Manufacturer: Morel, Ness Ziona
70400 Israel
www.morelhifi.com

Distributor in Italy: Unicars Italia, Via delle Industrie 35, 20050 Mezzago (MI). Tel: +39 02 62410228
Price: euro 1,690.00

CHARACTERISTICS STATED BY THE MANUFACTURER

SUPREMO PICCOLO TWEETER

Power: RMS 200 W, peak 1,000 W (filtered crossover at 2,200 Hz).
Frequency Response: 1,400 – 25,000 Hz. **Resonance frequency:** 790 Hz ± 10%. **Nominal Impedance:** 6 ohm.
Sensitivity: 90 db **Diameter:** 67 mm
General: double layer 28 mm moving bobbin in Hexatech wrapped on aluminum base, soft dome covered with Acuflex, hybrid magnet of neodymium, rear C.A.R.

SW6 SUPREMO WOOFER

Power: RMS 200 W, peak 1,000 W.
Frequency Response: 25 – 5,000 Hz.
Resonance frequency: 62 Hz. **Nominal Impedance:** 3.5 ohm. **Sensitivity:** 89 db **Diameter:** 165 mm **General:** 75 mm moving bobbin in Hexatech wrapped on aluminum base, one-piece cone covered with Acuflex, BxL 4.32; hybrid magnet of neodymium, rear C.A.R., die-cast steel basket

The Supremo Piccolo, despite its size, stands up well against its bigger brother. The grill has been removed to let you better appreciate the flange and the soft dome.

LISTENING

The work required for the assembling is really minimal: the midwoofers fit in the prearranged location with no problem at all; the tweeters may require a little more space than average, but compared to the full size Supremo they are much more convenient. Therefore, the size has been perfectly optimized for car mounting and it is great to know that no detail was overlooked.

After a few tries at tuning the filters, a high pass cutoff around 1,800-2,200 Hz for the tweeter, with even a slight slope (like 6 dB/oct., but be careful not to exaggerate) is suggested in order to enjoy this component's splendid sound until the mid range. Also make room for the mid-low at the same frequency or slightly lower, with a higher slope (at least 12 dB/oct. to make it clear). I also added on the SW6 a high pass cutoff of 12 dB/oct., centered at 70 Hz, to push it correctly without any problems.

You'll understand when you listen to it, this system has no problem to playing high volume, and I can assure you that considering all I wrote in order not to break anything, the nominal rated power was confirmed to be trustworthy. On the contrary, during the test I moved the SW6's high pass to 60 Hz, to enjoy the system's ability to convey perfectly dynamic transients relative to the electric bass and percussions.

Compared to the Elate 6 I found it to have higher installation flexibility. An accurate and meticulous study of the load volume of the mid-bass chord is not required to get the lower spectrum: the bass is all there! It's enough to leave it at a low volume while you tighten the mounting hole well. These operations must be performed anyway particularly in this case, considered the transducers calibration.

The ability to express the bass so well does not cause any loss of detail at the medium frequencies: the voices, both masculine and feminine, are reproduced in a very realistic way, as well as all the instruments in the test area. The SW6 expresses a mid range rich in details and very smooth, punchy or soft depending on what is required at any given moment. And most of all they blended very well with the lower frequencies of the Supremo Piccolo; a real giant of the mid range and up to the highest peaks of the cymbals, harpsichord and triangle.

The Piccolo's performance (each certified by the manufacturer with documents that come with the set of speakers) offers a quality level in the sound reproduction that can indeed be defined as "Supreme".

The highest note frequencies exist in all the nuances, with a silvery and measured timbre that delights the mind and prepares for a listening session of total satisfaction. At the same time, the voices, the brass and the piano's mid registers emerge with no hesitation, clean and extremely focused in every situation.

What else can be said? The performance of the frequency extension is excellent from a dynamic point of view and also for listening pleasure. I can affirm with pride that seldom have I had the chance to listen to a system so balanced, and at the same time persuasive.

I can only confirm what I said at the beginning; that this system is undoubtedly intended for a definitive installation.

A.S.

The magnet build of “Neodymium Pancake” (whose name seems to indicate a cake) is prepared with a Rare Earth base and metal with very high magnetic permeability. As you can imagine, it is another Morel patent used for the transducer’s magnet, which accurately hides the material blend used to create this very powerful engine. The depth is very low (just 32 mm) and culminates as usual with the C.A.R.; a felt-based material set within the back chamber, whose function is to optimize the acoustic load in order to achieve the desired behavior.

No doubt this is a tough job, even though the dimensions are smaller than those of the bigger brother, which better hide all the work. And yet Mr. Mordechai has decided to market the two way systems based only on the “small” and not on the big Supremo tweeter in order to make the installation more convenient and for optimal interfacing between the two speakers, without loss of quality and power rating. It is smaller, but lacks nothing on the bigger version.

Midwoofer

The 6 inches mid bass (SW6) follows exactly the same philosophy seen in projects as the Elate, improving all the component’s electric, acoustic and mechanical characteristics. It seems that the membrane is made out of a type of metallic smooth “foam”, but from its characteristics we have learned it is made from a single piece of cellulose fiber (paper) covered with Acuflex, with no joints, seams or glued parts. This is for full cone joint protection against dust and it’s of really big dimensions. The rubber suspension is very flexible, while the described cone is rigid and at the same time very light. The magnet is made of a blend of neodymium and ferrite, and therefore develops a very powerful magnetic field for a total height of 16 mm. It is useful to know that in this midwoofer the permanent magnet is within the moving bobbin, which is just 5 mm high. According to the manufacturer’s statement, all this was optimized to keep the moving bobbin fully immersed in the magnetic field all the time in order to assure control and response regularity in case of high power input.

The spider (also called centralizer) that keeps the moving parts in position, is made of very rigid and strong canvas, grooved to track the oscillations induced by the strong flow and performs its task along with a rubber zip that has an outside curved profile (note: do not place it on the table facedown). It forms a dynamic, perfectly balanced system that enables this splendid component to produce a wonderful sound, which we’ll write more about in the listening test section.

The aluminum cast basket gives the SW6 a very professional look, which appears to be able to withstand any mechanical or thermal shock that can realistically occur in a car’s door. The magnet, made of the usual neodymium pancake with Rare Earth, is well sized but at the same time not cumbersome and ideal for mounting in a door without having to destroy upholstery and iron plates. It is always advised to perform good sound insulation work before mounting it in order not to distort the component’s exceptional sound characteristics.

Very beautiful, as usually, the cast grills offers so much open space compared to the full ones, which makes the midwoofer easily identifiable while allowing it to express itself best.

Zoom-in on the terminals and the area above the centralizer (spider). Also the bobbin’s multi-threaded wires are enlarged.

THE MEASURES

Woofers: **Morel Supremo SW6**

TWEETER: **Morel Supremo Piccolo**

RESPONSE 2.82 V / 1m

RESPONSE 2.82 V / 1m

IMPEDANCE

IMPEDANCE

The speakers' measurements were performed using the well-known "Clio" card, whose graphical setting was slightly different than usual; therefore some attention is required in the comparison of the "new" and "old" graphs in order not to make the wrong evaluation. The frequency responses detected on the IEC panel at a distance of one meter refer to 0, 30 and 60 degrees angles, in order to check what will happen in the passenger compartment in the case of a "canonic" door and A-pillar installation. In these conditions we have noticed that the response of the valuable 6 inch Morel midwoofer is very wide in the high range in the on-axis response (black curve), with some "wide range" component, and without serious variations except for a narrow break-up around 5,300 Hz; declining in the off-axis response, though it can be perfectly exploited until around 3 kHz and also for the wider angle (blue curve). All this occurs at around a sensitivity of 88 dB. The tweeter's response is a little more uneven. Even when stopping to check the apparent unevenness, we can notice that it tends to balance between the different angles, for a total response in the passenger compartment that presumably will not show any sign of unevenness. If this is an intentional and not random flow, we can commend such a mastery of planning techniques. Also the mid range extension appears interesting, and, if the rated power is the same as you would expect from a tweeter of this type, I would not exclude a priori crossovers even just a little below 2 kHz, maybe using a filter with a high enough grading and a couple of reduction dB's, considering the medium sensitivity of 90 dB on which the axis curve expands. Checking the impedances, we have noticed that the midwoofer's resonance peak, set on 70 Hz, is rather weak, to hold the foam disc's efficiency. The disc can be seen within the decompression hole and controls the mechanical quality factor. A slight alteration at 1,200 Hz can be easily detected; an alteration that also appears in the frequency response. Definitely less interesting, since the tweeter's impedance graph is "normal". This is also characterized by a contained resonance module. The resonance frequency, next to 1 kHz, is rather low, while the parasitic inductance seems to be slightly higher than average.

Awaiting to get a wide car speaker TND survey, and referring also to what was observed in other speaker types that underwent this test until today, the Morel unit's Total Noise Distortion seems to be good: not too high and free of rises in the mid and mid-high range. The High pass cutoff at 60 Hz improves the lower note response noticeably until around 400 Hz, without changing the mid frequencies, and the general flow indicates that the best performances range starts from 50-60 Hz and stretches up to a little above 2 kHz.

F. Montanucci

F. Valeri