

York



General:

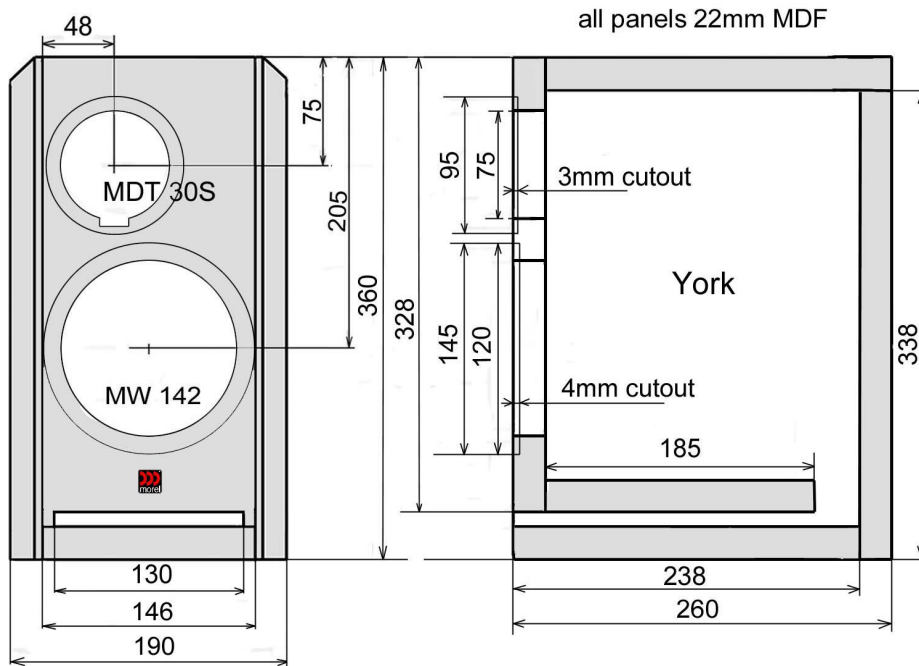
The MOREL York is a small bookshelf loudspeaker in the MOREL DIY series.

Especially for starters this is a beautiful speaker to build because no special tools and skills are necessary to bring it to a successful project. This design is a bass reflex type to gain some more low frequency response from a small speaker like this. Don't be misled by the size of this speaker.....

The very high sound quality is enabled through all typical MOREL features, like large, full aluminum voicecoils with six-sided hexatech wire, External Voice Coil technology, large coated softdome tweeter with damped rear chamber, etc. In German Klang & Ton 2/93 there is more to read about York. Due to the size we believe this is a wonderful speaker for home Theatre systems too.

The cabinet:

The cabinet is made of 22mm MDF. Thinner material is possible but a waste of energy, because in that case the powerful, fast character will be disturbed by panel resonances. The front and top sides of the side panels are 45° angled for better radiation pattern. It also gives an even smaller look.



The position of the tweeter is remarkable; after several listening tests a long time ago we found that this asymmetrical layout helped to gain a better staging. Therefore we use this setup in most of our DIY designs.

The tweeter is fraised 3mm into the baffle to improve radiation pattern again.

Also the woofer 4mm, and at the back about 10mm to let it breath properly. Better is 45gr. a angle. The bassreflex opening is 10x130mm with a total length of 207mm. Fill the internal side with two small pieces of MDF sized 10x185x8/20mm.

Glueing all parts together works best with Constructionkit, available in several brands. With a kitpistol u add just a line of sigaret size to one side and divide it over the area. Start with one side panel on a flat surface and add panel by panel. Then fix the other side panel. Just use some heavy material to press the panels together. Remove all glue on the surface otherwise you can see it afterwards.

After the glue is dried you can remove it with sanded paper. We don't advise the use of other glue because in that case you'll always see the edges of the panels despite your efforts to make a "one-piece" look.

The units:

The woofer MW 142 (K&T test 5/92) is of a remarkable, typical MOREL construction: 5" steel chassis with 75mm (!!!) full aluminium "hexatech" voicecoil and internal double, symmetrical magnet. The cone is made of damped polymer (DPC). Unlike other polymer cones, having no cone break-up. You'll find this driver in lots of high-priced commercial designs too.

Since 2001 most MW-drivers have a new feature to gain even more faster response. The space behind the "spider" is now vented through a lot of small holes in the chassis.



The tweeter MDT 30 (K&T test 4/92) is a 28mm coated softdome tweeter having a damped rear chamber behind the dome to prevent any ringing at all. An aluminium "HEXATECH" voicecoil powers this softdome.

This tweeter is the most used MOREL tweeter, as well in DIY as in commercial designs all over the world. This unit is an interesting exchange model for lots of commercial speakers too. The same type, but with 110mm face-plate, is available as MDT 32. This is also a perfect replacement for the Dynaudio D28AF, a driver no longer available. The nearly twin looks are easy to explain: they both

came originally from the same mind. Mr. Meir Mordechai, founder of MOREL, designed the original D28 at Dynaudio, before he decided to start his own company in 1973.

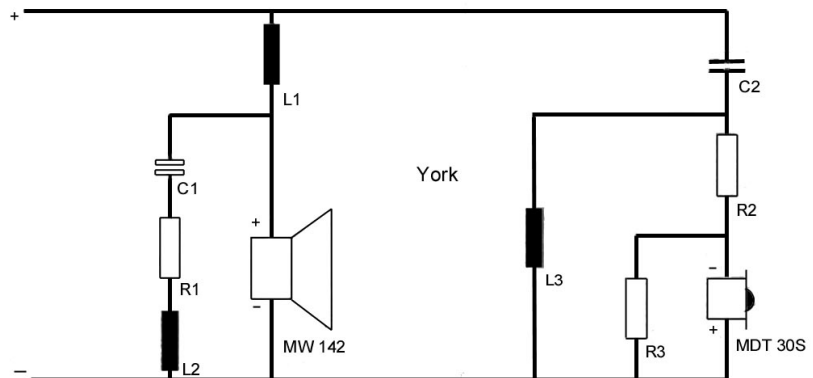
The crossover:

Due to the smooth behaviour of these MOREL drivers the crossover can be nearly theoretical.

The low frequency part is done at 6dB/oct. by L1. The impedance correction network around C1/R1/L2 just smoothens some around 4kHz.

The tweeter is crossed with 12dB/oct. by C2/L3. The higher efficiency of the tweeter is compensated by R2/R3 to a level of 88dB/1W/1m, where it matches the woofer exactly.

C1 = 6,8 uF 50V bipolar glatt
C2 = 10 uF MKP 400V 3%
L1 = 1,50 mH 1,0mm air coil
L2 = 0,39 mH 0,5mm air coil
L3 = 0,47 mH 0,7mm air coil
R1 = 4,7 R 5W induction free
R2 = 3,9 R 11W induction free
R3 = 3,9 R 5W induction free



The damping:

Plaster all inside except the port entrance inside the box with eggbox foam. We prefer to use rubber based Bof foam but this is hardly to get unfortunately. Feel free to use available materials in your area, this is what makes fun with DIY.

Some tips:

You can adjust R2 between 3,3 en 5,6R for personal taste and/or living room corrections.

Of course you have to mirror both speakers, one tweeter left, one right. Both tweeters in the middle is possible of course but then the fun with experimenting with staging results is gone. The tweeter needs to fit a little bit higher in the cabinet too in this case which is also not a better way to do, the closer to the woofer the better.

Please feel free and send us your idea's with MOREL designs or improved changes to our designs.

At our website you'll not just find all data you want to have about MOREL drivers. There is also a lot to learn about our own Home Theatre and high-end car-hifi speakers program as well as dealer addresses all over Europe.