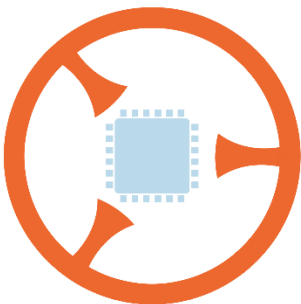
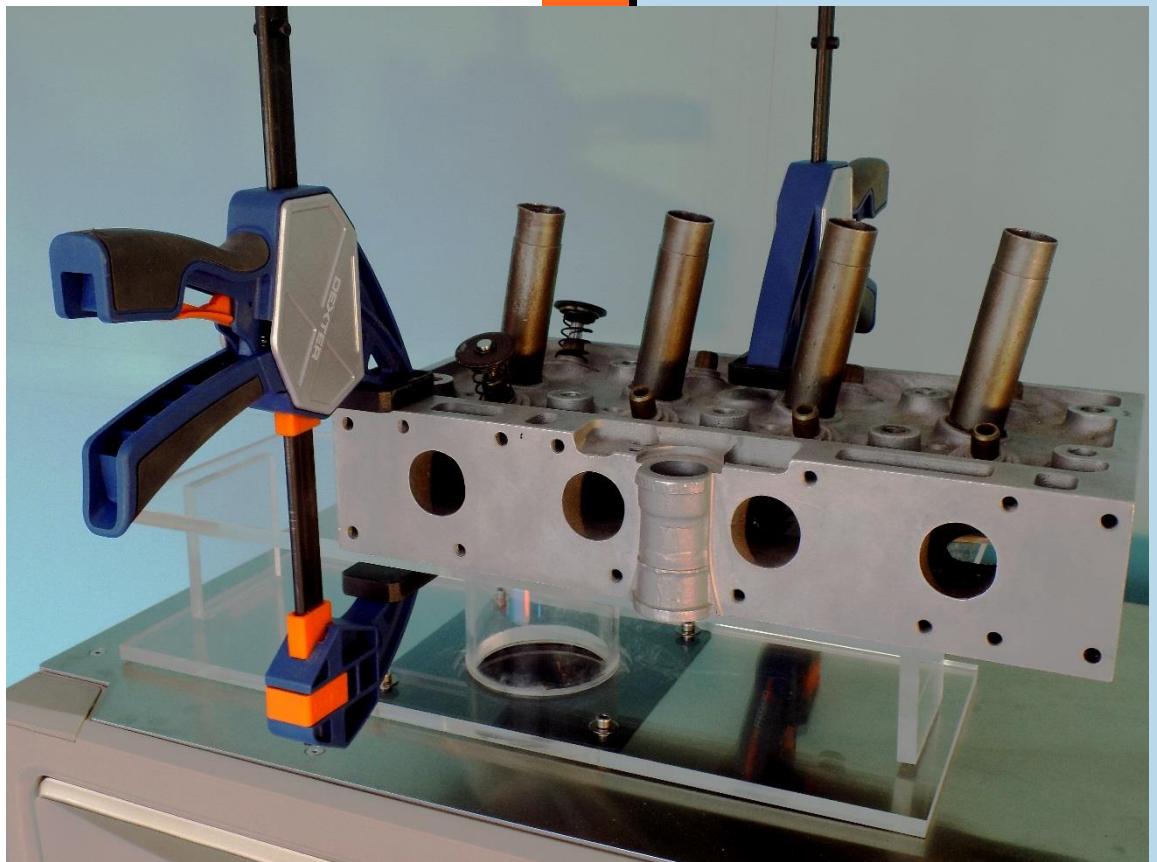


Cylinder adapter

SmartFlow-SC1



RGeConcept
Smart Motorsport

rgeconcept.fr

StFw-Ad

1. Two cylinder adapter types

The cylinder adapter simulates the bore of the engine, it allows to center and place the cylinder head on the flow bench. It is possible to use either an external adapter to the plenum or an internal adapter. The diagram below shows the difference of approach.

The external adapter is made for a narrow (240 or 300 mm wide table) or wide (Premium furniture) platform. While the internal adapter is usable with a narrow platform.

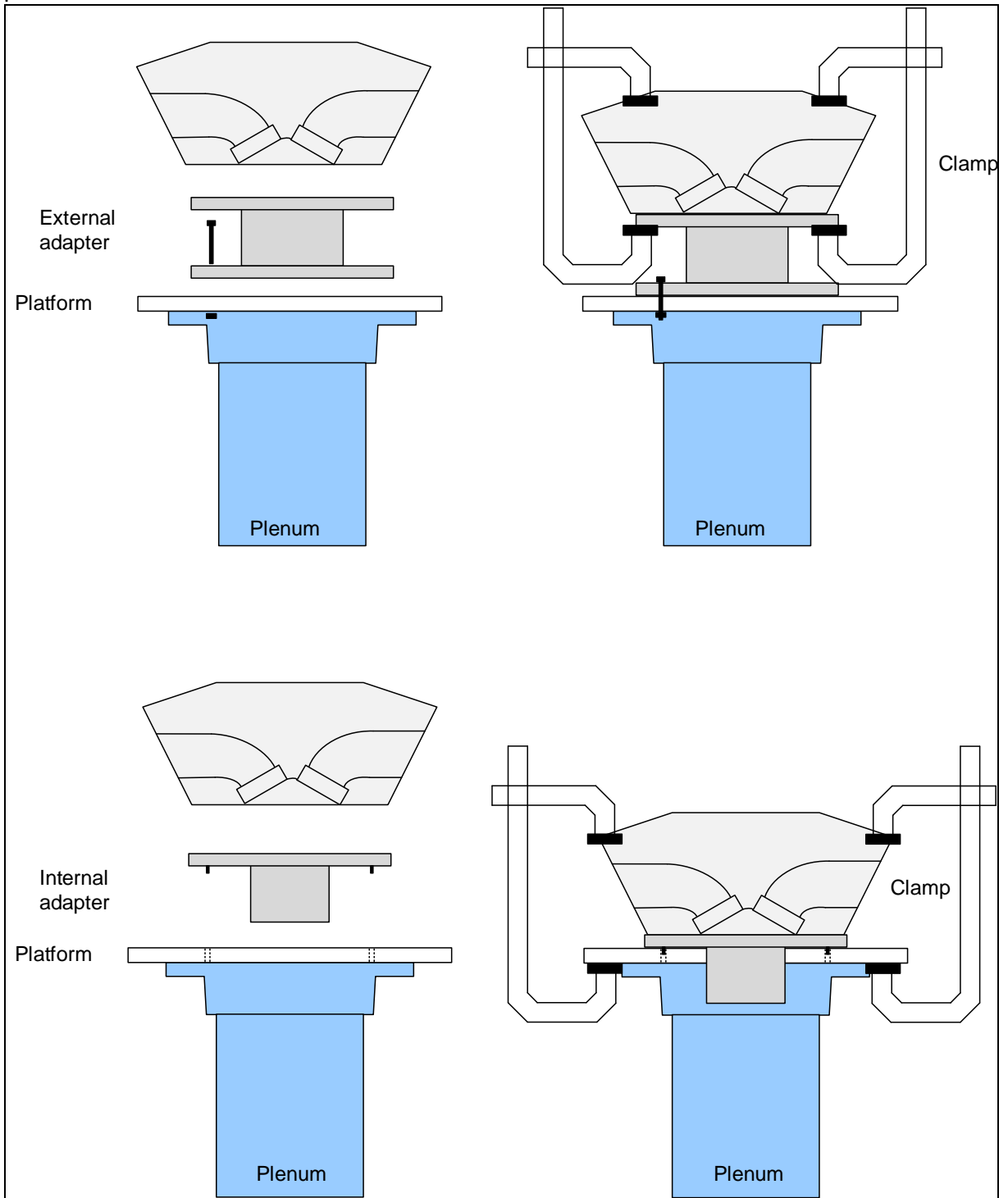


Figure 1 The 2 types of adapters

2. External adapter

The adapter is connected to the platform by means of bolts passing through the holes of the [indicated](#) dimensions with a flat gasket to ensure the air-proof tightness of this connection.

The connection of the cylinder head to the adapter is made by a quick-clamp which makes it possible to quickly mount and remove the cylinder head while ensuring an effective tightening. See [cover photo](#). A gasket must be placed between the cylinder head and the adapter.

Cylinder head centering on the adapter will be done by counter-drilling the upper part of the adapter using the cylinder head mounting holes as a guide once the cylinder head dome is centered on the bore of the dummy cylinder represented by the adapter. Then using the cylinder head bolts as locating dowels.

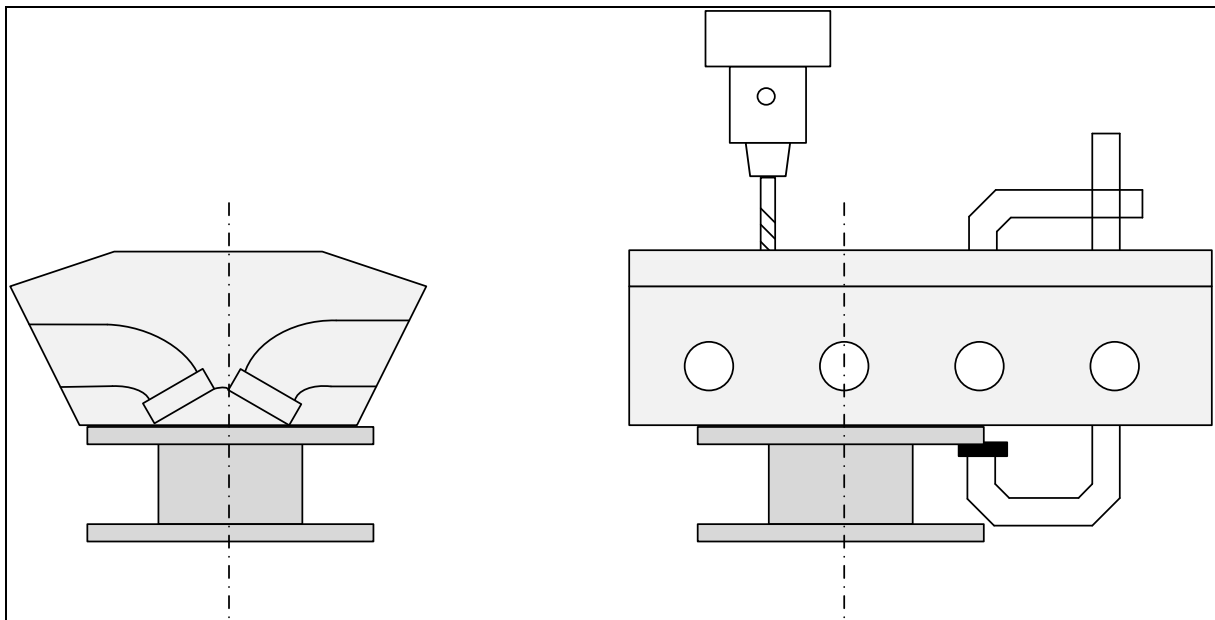


Figure 2 Centering and drilling

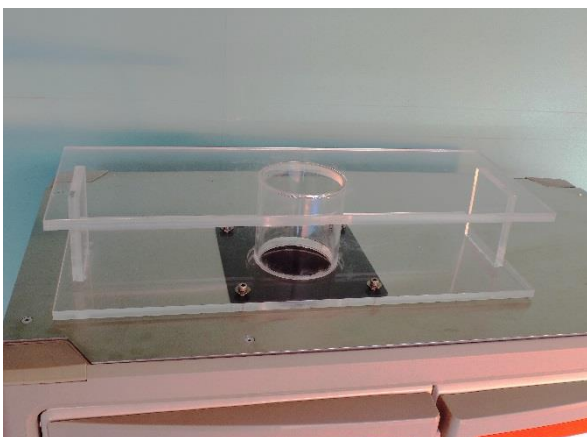


Figure 4 Example made from plexiglass



Figure 3 Example made from melamine

3. Internal adapter

The centering of the adapter to the platform is done by locating dowels in the holes of the [indicated](#) dimensions with a flat gasket to ensure the air-proof tightness of this connection.

The connection of the cylinder head to the adapter is made by a quick-clamp which makes it possible to quickly mount and remove the cylinder head while ensuring an effective tightening. In this case the clamping also ensures the connection of the adapter to the platform. A gasket must be provided between the cylinder head and the adapter.

Cylinder head centering on the adapter will be done by counter-drilling the adapter using the cylinder head mounting holes as a guide once the cylinder head dome is centered on the bore of the dummy cylinder represented by the adapter. Then using the cylinder head bolts as locating dowels.

Figure 5 Centering and drilling

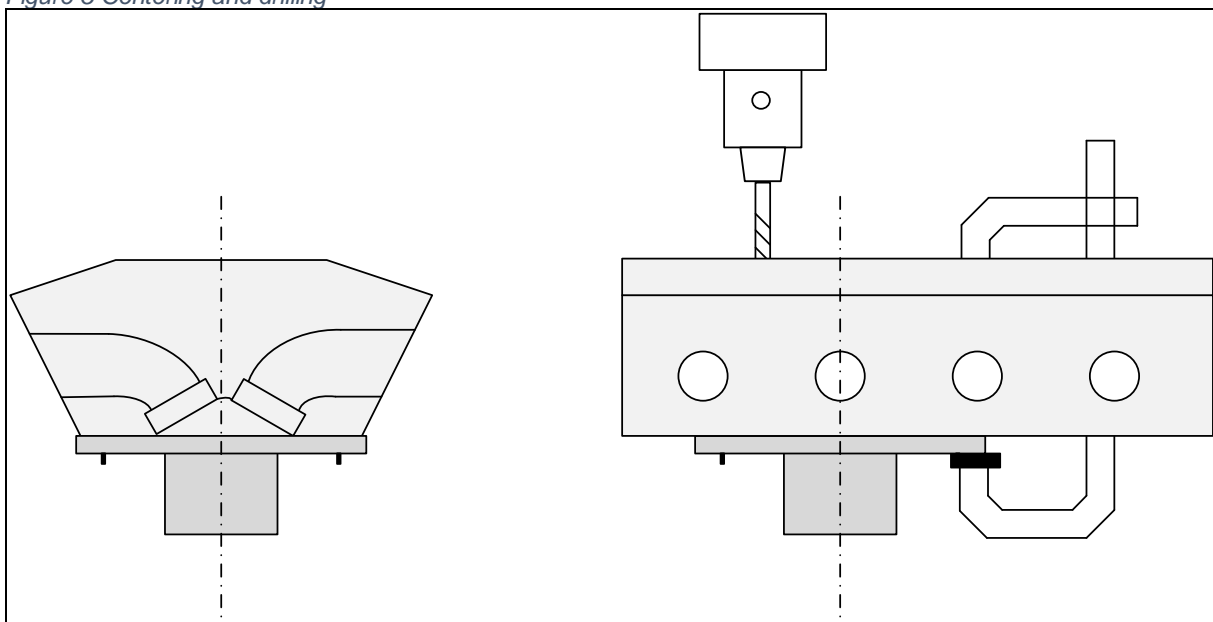


Figure 6 Bottom with locating dowels



Figure 7 Assembly of the cylinder head with centering bolts

4. Comparison and conclusion

The comparison of the flow rates of a cylinder head measured with the 2 types of adapters shows identical results.

The difference on this example is 0.8% on the integral sum and the average flow value.

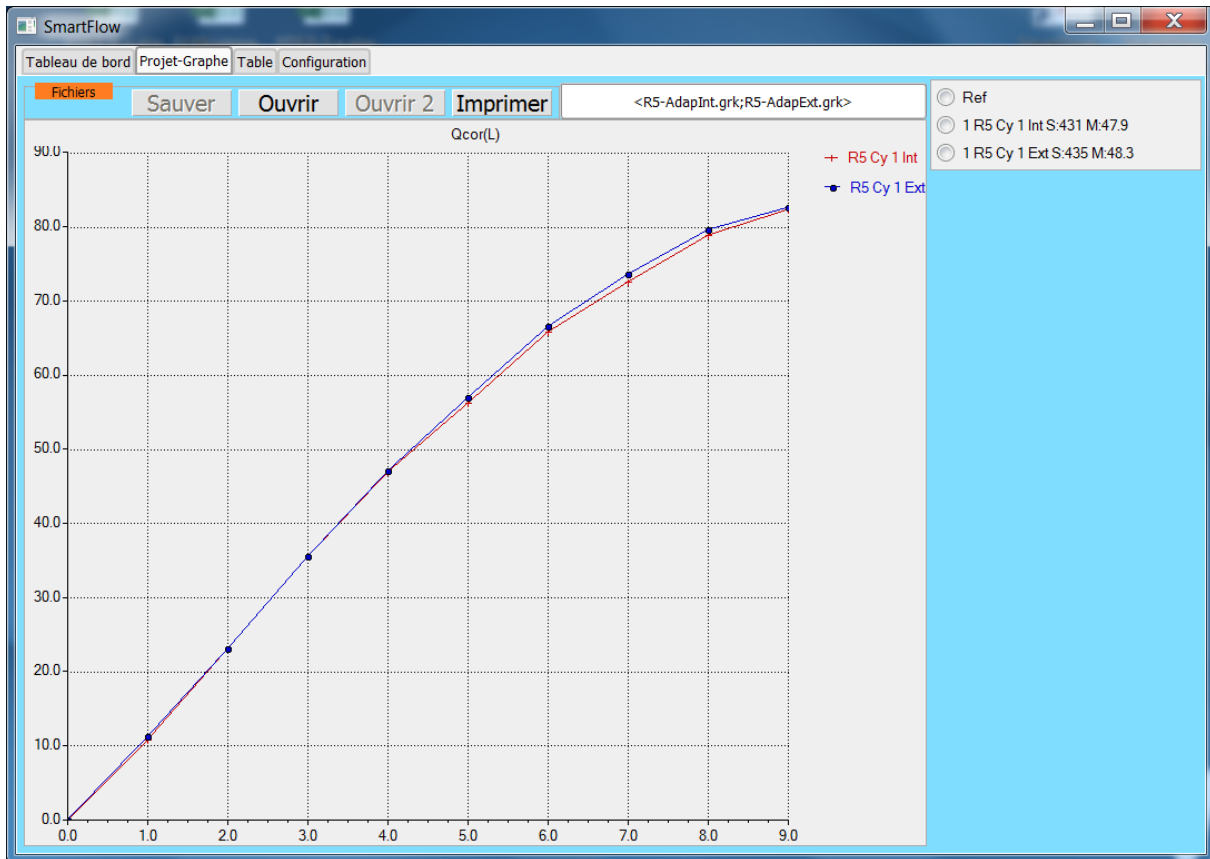


Figure 8 Comparative reading on SmartFlow SC1 kit

So, the use of both types of adapters does not matter significantly in terms of result, the choice will be which is more practical.

5. Drilling template

Below you will find the drilling pattern to perfectly fit the SmartFlow table. The example bore here is 80 mm for an internal tube diameter of 77 mm.

