

New hub size



Change in the power plant processes can create various new performance demands and whether the hub size is increased or decreased, it is possible to establish a fan much better suited for new operational conditions.

A new hub size can optimise volume and pressure according to changes in the operational conditions and it can improve the fan efficiency and economy. When you install a new hub size, you can keep the foundation, instrumentation and most of the static parts and there are no changes in the exiting ducts.

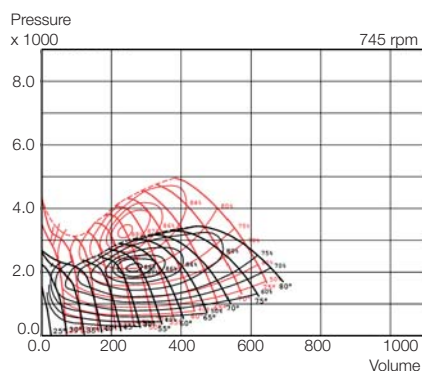
Change in the power plant processes such as rebuilding the boiler, installation of FGD or SCR can create various new performance demands. Also a wish for establishing an increased safety margin against stalling might make it necessary to improve the pressure capacity of the fan.

A cost saving way of obtaining the new targets is to adjust the fan performance to the actual operating situation and improve efficiency of the fans by changing the size of the hub.

Whether the hub size is increased or decreased it is possible to establish a fan much better suited for the actual operational conditions. Improving the efficiency considerably, keeping the existing outer static parts – and saving the installation costs of a new fan, duct work, foundation and electrical installations to the control room, in other words: The total costs will be much lower than if a new fan was installed.

Larger hub size

This solution will provide an improvement of pressure and efficiency, and regarding more moderate changes an increased safety margin against stall.



Example of retrofit:

Black curve

Existing Howden fan with 1,6m hub size with volume blade profiles.

Red curve

Upgraded Howden fan with 1,6m hub size with volume blade profiles.

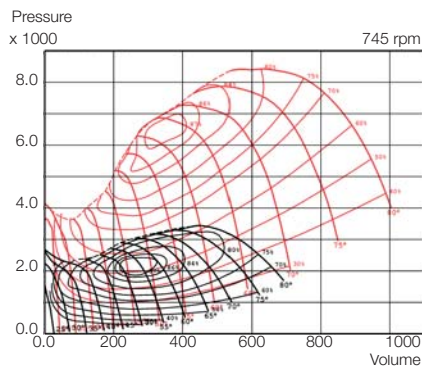




For further information on axial fan retrofit solutions please visit www.howden.com or contact your local Howden company.

Larger hub size and new blade profiles

By replacing the hub with a larger hub and at the same time changing the blade profile, an even bigger increase of pressure and simultaneously of volume flow can be obtained.



Example of retrofit:

Black curve

Existing Howden fan with 1,6m hub size with volume blade profiles

Red curve

Upgraded Howden fan with 1,6m hub size with super high pressure blade profiles

Smaller hub size

By changed operational conditions it is possible to improve the efficiency.

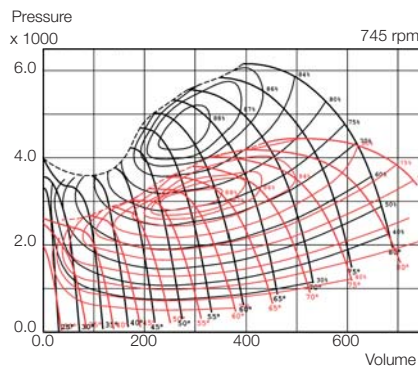
If changes in the plant operation are causing a decrease in fan pressure, the solution might be to go down in pressure capacity by decreasing the hub size and in that way keeping a good efficiency of the fan.

There are several alternatives to this solution, such as:

Reducing to half the number of blades

Installing a new type of blade profiles

Changing the fan speed



Example of retrofit:

Black curve

Existing Howden fan with 1,6m hub size with high pressure blade profiles

Red curve

Upgraded Howden fan with 1,6m hub size with high pressure blade profiles