

# Hydrocyclones

## Technical data

- Flow rates  
Q = 90 l/min
- Flow pressure  
p = 1,5 to 2,5 bar
- Temperature range  
5 °C to 60 °C
- Kinematic viscosity  
1 to 20 mm<sup>2</sup>/s



## Applications

Spandau hydrocyclones are highly suitable for use in filter-free cleaning installations.

Hydrocyclones are very economical centrifugal separators that are used to clean low-viscosity fluids like water and emulsions. The precondition: the particles have to have a small grain size with a greater density than that of the fluid.

## Use-condition

The particles must be of little grain size with greater density than the liquid.

## Function

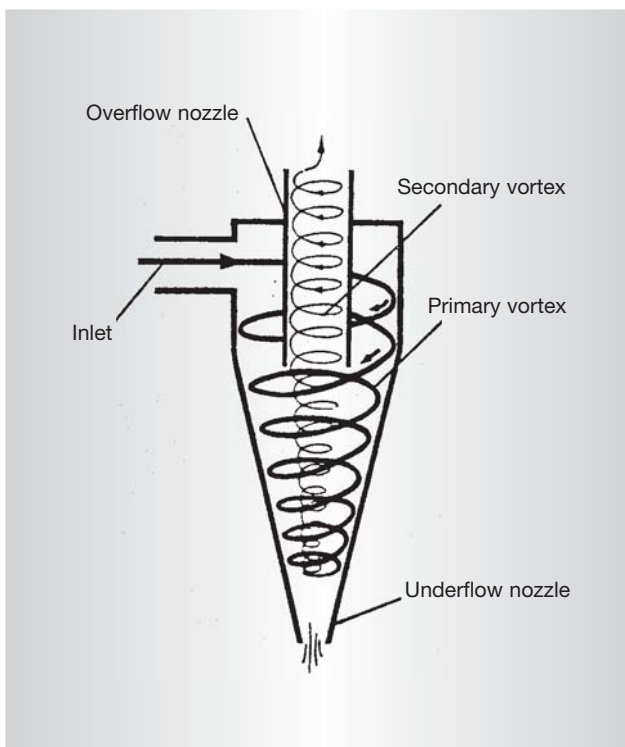
A pump delivers the fluid to be cleaned to the hydrocyclone. Rotational motion is imparted to the pressurized fluid with the help of the guide mechanism in the inlet. This motion produces a downward primary vortex.

The narrower diameter in the lower part of the conical section and the resulting throttle effect produce a secondary vortex rotating in the same direction that migrates upward in the center of the cyclone.

Particles with a higher specific weight are pressed against the cyclone wall by centrifugal force and leave the separator with a small amount of fluid via the underflow nozzle.

The cleaned fluid rises in the secondary vortex and is fed back into the clean-water reservoir via the overflow.

## Schematic diagram of a hydrocyclone



## Versions

All cyclone parts are made of corrosion-resistant, abrasion-inhibiting plastic and therefore display little wear. The only wearing part is the underflow nozzle where the highest concentration of particles is found. All the parts can be easily installed/dismantled – without special tools.

The working range of the cyclones lies between 1.5...2.5 bars overpressure.

Cyclones come in two grades with respect to their output of clean water:

- **HDZ-1** for rates of 70 l/min and a high degree of purity
- **HDZ-2** for rates of 90 l/min and a lower degree of purity

The exact degree of purity to be attained depends on various factors like, for instance, the fluid's viscosity, the shape and size of the contaminants, the difference in pressure in the cyclone.

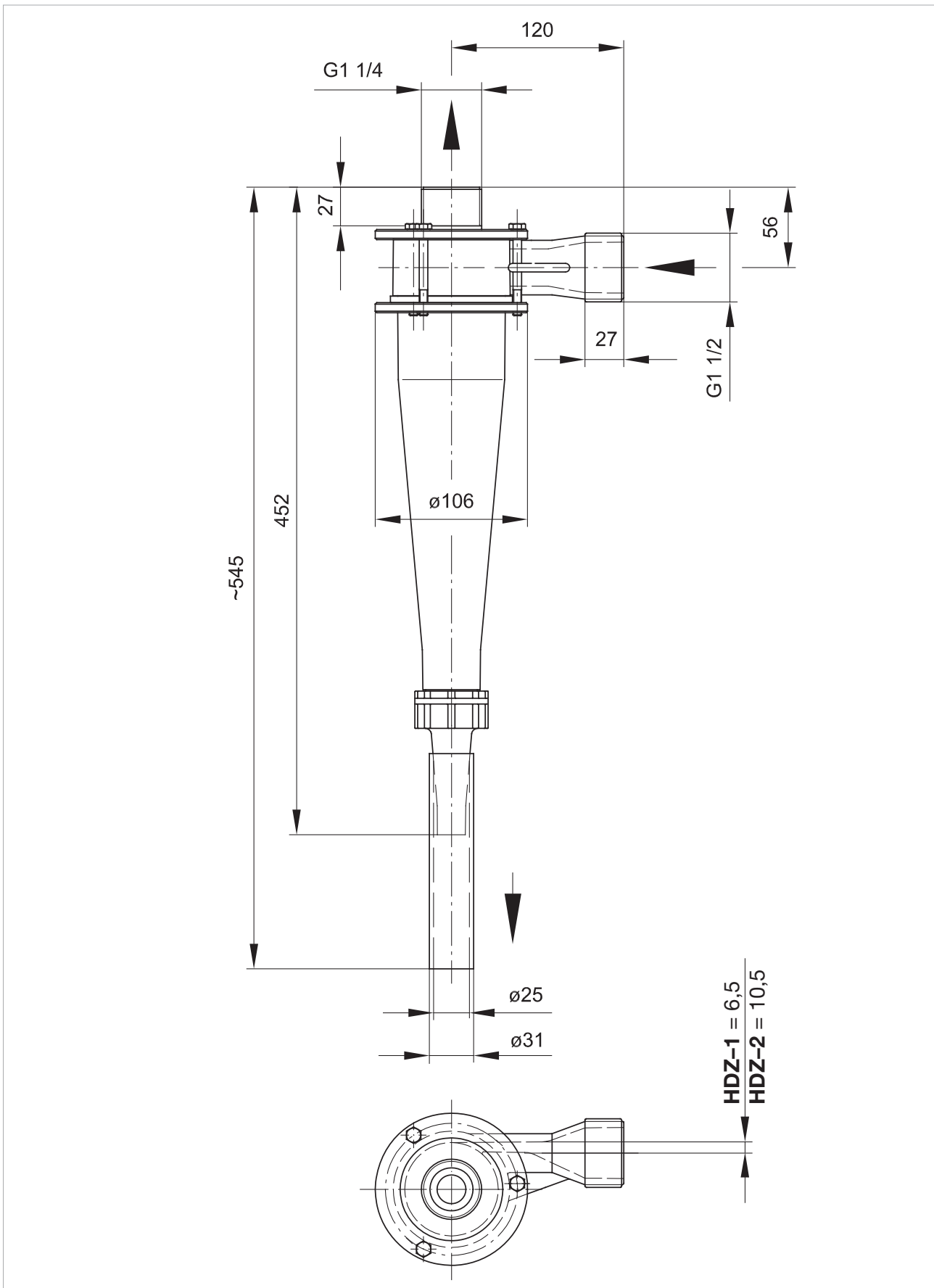
Depending on these factors, particles up to the grain size of  $> 5 \mu\text{m}$  will be filtered out with a maximum degree of purity amounting to 98%.

Cyclone systems can be adapted to plant requirements: two or more cyclones installed in parallel can increase cleaning performance by a respective multiple (cyclone battery).

## Pumps for hydrocyclone installations

Spandau Pumps, a systems supplier in the field of coolant pumps for machine tools and filtration systems, also supplies appropriate cyclone feed pumps as well as clean-water pumps designed for a wide range of performance figures. These immersion pumps are sealless, and thus have a long life as a result of their low-wear parts.

## Dimensions



The contents of this publication are the copyright of the publisher and may not be reproduced (even extracts) unless permission is granted. Every care has been taken to ensure the accuracy of the information contained in this publication but no liability can be accepted for any loss or damage whether direct, indirect or consequential arising out of use of the information contained herein.

SKF Lubrication Systems Germany GmbH  
Produktbereich Spandau Pumpen  
Motzener Strasse 35/37 · 12277 Berlin · Germany  
PO Box 970444 · 12704 Berlin · Germany  
Tel. +49 (0)30 72002-0 · Fax +49 (0)30 72002-261  
[www.spandaupumpen.com](http://www.spandaupumpen.com)

This brochure was presented to you by:

**FAMiBA**

[www.famiba.sk](http://www.famiba.sk)