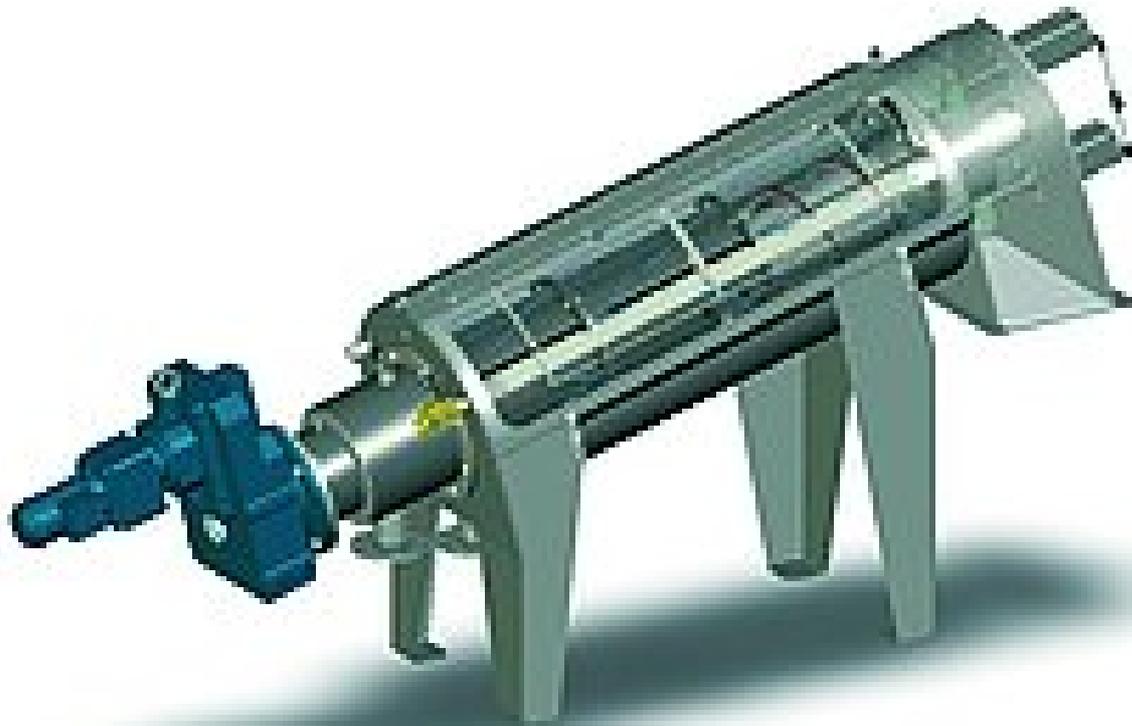


[Home](#) ■ [HUBER Report](#) ■ [Sludge Treatment](#) ■ [Racing technology for optimized sludge dewatering](#)

Racing technology for optimized sludge dewatering



In automobile racing, motor charging has been an efficient method to increase the performance of combustion motors since the middle of the 20th century. The functional principle of motor charging is based on 'forced filling' of the combustion chamber by means of a compressor. This artificially increases the introduced amount of oxygen within the cylinder so that the compression ratio and combustion process can be optimized and ultimately the motor performance/torque increased. Through electronic regulation of this turbo effect it is possible to get under control the very rough operation behaviour caused by turbo lags and extreme compressor speeds. For about 20 years motor charging has been standard for diesel-engined cars.

The HUBER Screw Press RoS 3Q has of course not been used in motor sports but has definitely the potential to optimize utilisation and combustion processes.

The function principle of the Screw Press is based on the compaction of conditioned sludge. The compaction takes place inside a press screw. The geometric delivery volume is continuously diminishing. A pressure cone at the end of the screw conveyor allows for a static press power to be adjusted in the machine. In this way, mechanically separable water is squeezed through a screen basket.

CROSS SECTION OF ROS 3Q SCREW PRESS

A turbo-engine-like effect can be achieved by 'charging' the Screw Press with conditioned sludge. Such charging is achieved by forcing sludge with primary pressure into the first helical turns of the machine. This increases the specific solids filling amount per helical turn. The primary pressure forces filtrate water through the screen basket. As the solids filling amount increases, the compression ratio inside the machine is also increasing with the diminishing delivery volume. The static press power in the machine rises, and with it the dry material content in the press cake. Depending on the quality of sludge to be dewatered, the press cake DR could be increased by 1% to 4% in practical tests compared to feeding without primary pressure.

Pressure feeding directly supports the actual purpose of sludge dewatering, which is to produce an as dry as possible press cake. While compressor technology applied in motor production involves significantly increased extra costs for investments and maintenance, the same effect with Screw Presses can be realized virtually without affecting costs as the anyway required thin sludge feed pump is used as compressor. The pressure level of customary displacement pumps renders possible without problems 'charging' pressures of up to 500 mbar.

FILTRATION WITH APPROX. 200 MBAR PRIMARY PRESSURE

Beside the DR content of the press cake, operating stability is another decisive criterion of a sludge dewatering system. Experience has proven that especially the RoS 3Q is well suitable for unattended operation as it is easy to operate and shows a stable operating behaviour. To ensure this operating stability also under pressure feed conditions, the primary pressure is kept constant by a control circuit. The 'charging pressure' in the machine is continuously measured and compared with the target pressure. If the measured pressure deviates from the target pressure, the machine automatically regulates its operating parameters until the optimal pressure range has been found again.

Optimum dewatering results can be achieved even with unattended plant operation so that the operator directly saves operating costs through reduced sludge volumes after dewatering and minimized operator attendance required.

Related Products:

- [HUBER Screw Press Q-PRESS®](#)

Related Solutions:

- [HUBER Solutions for Sludge Dewatering](#)

Adresse / address: HUBER SE · Industriepark Erasbach A1 · 92334 Berching · Germany · Telefon / phone: + 49 - 84 62 - 201 - 0 · Fax / fax: + 49 - 84 62 - 201 - 810
e-mail: info@huber.de · Internet: <http://www.huber.de>

Sitz der Gesellschaft / Headquarters: Berching · AG Nürnberg / Register of companies: HRB 25558

Vorstand / Board: Georg Huber (Vorsitzender / CEO), Dr.-Ing. Oliver Rong (stellvertretender Vorsitzender / Vice CEO), Dr.-Ing. Johann Grienberger, Rainer Köhler
Aufsichtsratsvorsitzender / Chairman of the Supervisory Board: Alois Ponnath

USt (VAT)-IdNr.: DE 812353219

Bank: HypoVereinsbank Nürnberg (BLZ 760 200 70) 5 008 409 · SWIFT-BIC: HYVEDEMM460 · IBAN: DE 30 7602 0070 0005 0084 09

