



NIJHUIS SCREW PRESS

Cost-effective Sludge Dewatering Solution



With its longstanding industrial experience, Nijhuis Industries has developed a cost-effective screw press system (NSP) for sludge dewatering to deal with a wide range types of sludge. That being said, NSP unit is suitable to handle both biological and physical-chemical types of sludge.

Sludge dewatering treatment with NSP effectively generates dewatered cake with high dry solids content and a good quality of centrate water, resulting in significant sludge volume reduction. Hence, costs associated with sludge disposal will be minimized.

The **NSP unit** consists of pre-assembled components which enable the dewatering system to be flexible and easy to install, either as part of a total wastewater treatment solution project or as a stand-alone system in a new or existing plant. Furthermore, the smart design configuration reserves low footprint for the total sludge dewatering system with a NSP unit.

APPLICATIONS

- Wide range of industries
- Physical-chemical sludge and biological sludge
- New and/or existing wastewater treatment plants

CUSTOMER BENEFITS

1. Cost-effective & Flexible sludge dewatering solution
2. No pre-dewatering needed
3. Reduced sludge volume with typical dry solids content of 20%
4. Solids capture of more than 95%, reducing filtrate treatment cost
5. Automatic washing system, reducing operational downtime
6. Adaptable to local requirements and conditions, several units with different sizes are available
7. Low footprint
8. Low flocculant consumption
9. Low energy consumption
10. Low maintenance



Series, type	Max. hydraulic capacity (m ³ /h)	Max. sludge load (kg DS/h)	Installed power (kW)	Size L x W x H (m)	Washing water (l/s, at 5 bar)
NSP 20	0,8	55	0,37	2.6 x 0.6 x 2.0	0,09
NSP 40	1,8	130	0,55	3.5 x 0.9 x 2.4	0,14
NSP 70	3,9	255	1,1	4.4 x 1.2 x 2.8	0,29
NSP 90	7,7	450	1,5	5.3 x 1.5 x 3.2	0,40

Technical Description

Prior to dewatering process, polyelectrolyte will be added into the sludge stream when entering the NSP unit to create an optimal sludge flocculation process.

The polyelectrolyte injection and flow-controlled mixing systems can also be adapted to specific sludge mixing energy requirements, thanks to the in-line check valve with lever and weight.

Polyelectrolyte injection and mixing system are especially designed, incorporated and integrated in the NSP unit set-up, resulting in **smart configuration** with no impact to the total NSP system footprint.

The working principle of the NSP unit is based on mechanical dewatering by means of wedge wire drums which are accessible in 3 sections: the drainage section, thickening section, and dewatering section combined with a dewatering screw.

The drums are interchangeable for the purpose of dewatering process optimization based on slot width adjustment. A dewatering screw is installed in the center of the drum to transport the sludge through the drum sections. The speed of transport screw is automatically controlled by a pressure sensor at the inlet of the NSP unit. The pressure on the sludge can be controlled and optimized by adjusting the pneumatic cylinders at the end of NSP unit.

1. Sludge inlet + poly mixing system

2. Flocculation process

3. Inlet screw press

4. Washing system

5. Centrate discharge

6. Centrate discharge

7. Screw

8. Sludge discharge

9. Screw motor

