

# ***Water Treatment***

## THE COMPANY SINCE 1966

Since 1966, Técnicas Hidráulicas has been developing cutting-edge technology and providing a service of the highest calibre. TH Minerals was set up as a division within the group for the purpose of developing engineering, technology and machinery.

We design solutions in water treatment and filtration for the public and private industrial market. In order to ensure our customers' complete satisfaction, we are involved in the development of the various operating stages of Design, Production, Assembly and Commissioning.

The experience TH Minerals has in the design of water treatment and filtration solutions is extremely wide-ranging and our sphere of operations encompasses the entire world. The company's core approach has meant that TH Minerals technology is present in numerous countries worldwide, such as:

- Spain
- South Africa
- Vietnam
- Portugal

• France

• Mexico

• China

• Italy

• Venezuela

• India

• Poland

• Cuba

• U.S.A.

• Iran

• Algeria

• UK

• Taiwan

• UAE

• Belgium

• Switzerland

• Brazil

• Botswana

• Zambia

• Mali

• Morocco

• Angola

• Croatia

• ...

### Operating areas and uses:

- Quarries and gravel pits
- Mining & Metallurgy
- Cement & concrete industry
- Water treatment on building sites
- Recovery of washing wastewater
- Steel industry
- Recycling & Environmental Industry
- Chemical industry
- Food
- ...

### EXPERIENCE AND SERVICE

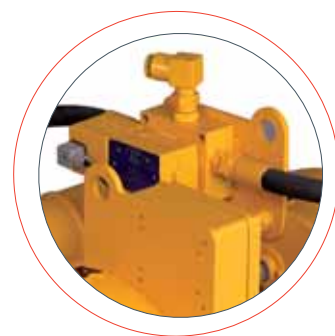
TH Minerals has a protracted track record in turnkey projects in the field of water treatment and filtration. Each department at TH Minerals is headed by a senior manager who supervises each project and is the one responsible for addressing any problems or modifications that might arise.

In each and every project, from initial laboratory testing through to ordering and commissioning, TH Minerals is committed to the achievement of excellence.

# APN-SIX VERSATILE PUMPING SYSTEM

Pumping is essential within a filtration system for ensuring a perfect solid/liquid separation and effective performance. TH Minerals uses an **APN-SIX piston-membrane slurry pump** specially designed for abrasive environments and high-pressure operations; its structural design and operating mechanism are an assurance of the utmost strength and reliability.

APN-SIX pumps are used for effective pumping in all kinds of applications, including pumping with no subsequent treatment. The pump's construction and design mean that all nature of sludges can be processed, especially those with a high percentage of solids.



*Hydraulic drive*

*High volume at low pressure – Filling*

*Low volume at high pressure – Filtration*

*Positive displacement with no damage to flocculation*

*Easy access – Minimum wear – Minimum energy*

The specific arrangement of the APN-SIX versatile pumping system, involving a specially designed hydraulic circuit, ensures accurate tweaking of the press filter and pump assembly. The automatic

adjustment of the pressure and flow in the sludge circuit leads to optimum filtration conditions when operating with a filter press, as these automatically adapt to each specific filtration process.

## TECHNICAL DATA

MODEL	SIX 2C	SIX 6CS	SIX 10C	SIX 20C	SIX 40C
Weight (Kg)	180	605	1.500	3.320	7.800
Working pressure (bar)	up to 16	up to 10	up to 16	up to 12	up to 16
Dimensions (length x width x height) (mm)	740 x 550 x 540	1.055 x 1.115 x 700	1.650 x 1.175 x 900	1.860 x 1.695 x 1.060	2.770 x 2.200 x 1.355
Rated flow (m <sup>3</sup> /h)	4	20	40	80	250
Oil flow (l/m)	10	35	70	90	240
Oil pressure at 10 bars (bar)	100	140	150	200	210

# APN HIGH-PERFORMANCE FILTER PRESS

The filter's structure and steel plates, as well as its straightforward design, make this filter press a global market leader as a robust and reliable product. Filters presses with the option of operating at a filtration pressure of up to 16 bars.

## Design based on mechanical simplicity

Multiplication of closing pressure by rods.  
Compact, minimum space.

## Steel filtration plate and peripheral rubber seal

Fully shockproof and complete sealing guaranteed.

## Fast opening system

Minimum technical times. Maximum performance in the minimum space.

Its strength and design avoid any breakage to the filtration plate, regardless of the differential pressures. It truly is an **automatic** filter press, operating fully independently with no need for any kind of in-service supervision.

Supplementary options:

- Draining System.
- Moisture Detection System.
- Manifold Washing System.
- Cloth Washing System.
- Cake Washing System.
- Pressing System.
- Membrane Pressing System.
- Cake Drying System on Both Sides.
- Dip Tray System.



## TECHNICAL DATA

MODEL	APN 4	APN 12	APN 16	APN 18	APN 20	APN 25
Cake size (mm)	420 x 420	800 x 800	1.350 x 1.350	1.700 x 1.700	1.900 x 1.900	2.850 x 1.850
Minimum number of chambers	4	2	2	12	36	30
Minimum filtration surface (m²)	1,4	4,4	7,3	69,4	246,4	297
Maximum number of chambers	12	4	18	40	60	60
Maximum filtration surface (m²)	4,2	8,8	65,6	231,2	410,7	594
Weight (Kg)	1.000	9.000	30.000	75.000	120.000	240.000
Dimensions (length x width x height) (mm)	2.530 x 980 x 1.300	2.542 x 1.730 x 1.810	4.900 x 2.232 x 2.086	8.500 x 2.511 x 4.900	14.500 x 2.800 x 4.900	14.500 x 2.800 x 4.900
Installed power (kW)	3	3	11	22	22	38



# SPN MULTI-PLATE FILTER PRESS

**Multi-plate filter press** specially designed for all kinds of outputs, which nevertheless require fully automatic operation with no personnel involved. Filter presses with the option of operating at a filtration pressure of up to 16 bars.

## *Design based on mechanical simplicity*

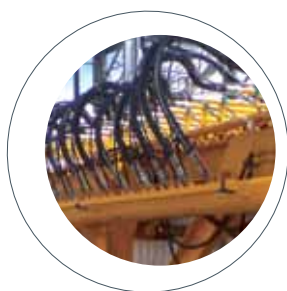
Multiplication of closing pressure by rods.  
Compact, minimum space.

## *Polypropylene plate of the highest quality and design*

Total process efficiency; closing, filtration and discharge.



Its strength and design avoid any breakage to the filtration plate, regardless of the differential pressures. It truly is an **automatic** filter press, operating fully independently with no need for any kind of in-service supervision.



Supplementary options:

- Draining System.
- Moisture Detection System.
- Manifold Washing System.
- Cloth Washing System.
- Cake Washing System.
- Pressing System.
- Membrane Pressing System.
- Cake Drying System on Both Sides.
- Dip Tray System.

## TECHNICAL DATA

MODEL	SPN 4	SPN 12	SPN 16	SPN 20
Cake size (mm)	420 x 420	800 x 800	1.350 x 1.350	1.900 x 1.900
Minimum number of chambers	10	10	20	40
Minimum filtration surface (m <sup>2</sup> )	3,5	22,1	72,9	273,8
Maximum number of chambers	20	60	100	120
Maximum filtration surface (m <sup>2</sup> )	14,1	132,3	364,5	821,4
Weight (Kg)	3.000	7.500	35.000	60.000
Dimensions (length x width x height) (mm)	4.550 x 1.590 x 1.300	6.830 x 1.690 x 1.390	8.690 x 2.570 x 1.925	14.060 x 3.010 x 2.445
Installed power (kW)	5,5	11	22	38

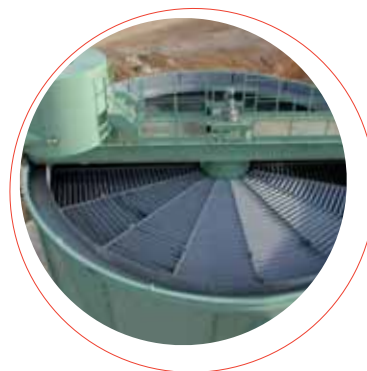
# NK-PP, NK-P and NK-CL CLARIFIERS

## NK Clarifiers

**NK** Clarifiers are used for the physical separation of solids in suspension.

They are gravity clarifiers, using the physical-chemical separation method.

These precipitation tanks are available in several construction versions: welded steel plate, prefabricated concrete or bolted steel plate, being versatile to suit each customer's requirements.



## NK-PP and NK-P Clarifiers

The upper part of the tank on **NK-PP** clarifiers is cylindrical and the lower part is conical, thereby facilitating the discharge of sludge.

These clarifiers are mounted on legs, allowing easy manoeuvring for maintenance.

The upper part of the tank on **NK-P** clarifiers is cylindrical and the lower part is flat.



## NK-CL Clarifiers

The upper part of the tank on **NK-CL** clarifiers is conical, the centre part is cylindrical and the lower part is conical, thereby facilitating the discharge of sludge. The inside of the tank is fitted with a conical **lamellar** arrangement that considerably increases processing capacity, whereby the clarifiers are as efficient as clarifiers of twice the diameter when processing the same volume of water.

## TECHNICAL DATA

MODEL	NK-80P	NK-100P	NK-120P	NK-140P	NK-160P	NK-180P	NK-200P
(Ø/m)	7	8,5	10	14	16	18	20
m <sup>3</sup> /h max	385	570	785	1.530	2.010	2.500	3.140
min	190	285	390	760	990	1.260	1.560
Agitator	√	√	√	√	√	√	√
Installed power (kW)	3	5,5	5,5	5,5	7,7	7,7	9

MODEL	NK-50PP	NK-80PP	NK-100PP	NK-120PP	NK-140PP
(Ø/m)	5	7	9	10	12
m <sup>3</sup> /h max	200	385	635	785	1.130
min	100	190	320	400	560
Agitator	√	√	√	√	√
Installed power (kW)	2,2	2,2	2,2	5,5	5,5

MODEL	NK-8CL	NK-10CL	NK-20CL	NK-37CL	NK-45CL
(Ø/m)	1,9	2,5	2,9	3,6	4,5
m <sup>3</sup> /h max	60	100	130	200	320
min	40	75	100	150	240
Agitator	√	√	√	√	√
Installed power (kW)	0,5	0,5	0,5	1,5	1,5

MODEL	NK-60CL	NK-75CL	NK-90CL	NK-100CL	NK-110CL
(Ø/m)	6	7,5	9	10	11
m <sup>3</sup> /h max	560	890	1.280	1.580	1.910
min	420	650	930	1.150	1.390
Agitator	√	√	√	√	√
Installed power (kW)	1,5	2,2	2,2	5,5	5,5

# EPS, DVD and MD

## Flocculent Make Up Unit – EPS

The devices for preparing and dosing polyelectrolyte are designed for continuous automatic operation with zero maintenance levels.

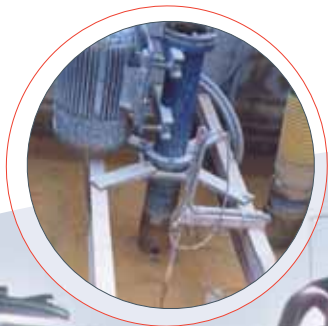
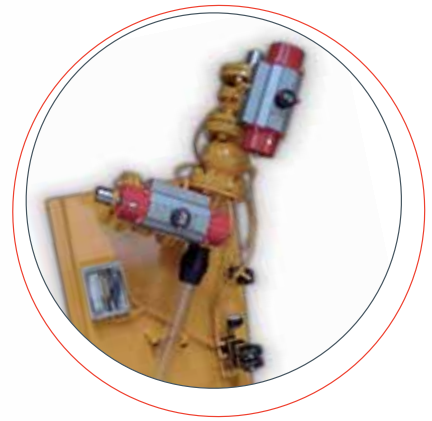
The range provides devices with one, two or even three operating compartments depending on flows, the required ageing and type of flocculant. The units may include a dosage pump with an electronic speed control, with the option of DVD-regulation for reducing the costs of Flocculent according to the specified needs of the settling.

## Settling Speed Control Device – DVD

This device performs a settling test at set intervals in order to regulate the dosing of Flocculent into the Clarifier as accurately as possible. This means that only the amount of flocculent that is strictly necessary is used for the type of water to be treated and for a pre-determined quality. Our NK clarifiers are fitted with a sampling device for testing purposes, although this device can be mounted on any kind of clarifier.

## Centrifugal Pumps – MD

MD centrifugal pumps for pumping charged water with solids in suspension. These are semi-submerged type pumps with a vertical shaft with no closure on the shaft to avoid wear when pumping charged water. They are driven by an electric motor using belts and pulleys.



## TECHNICAL DATA

MODEL	MD-26V	MD-46V	MD-66V	MD-86V	MD-120V
m <sup>3</sup> /h	100	175	250	320	500
Installed power (kW)	7,5	15	20	22	30

MODEL	EPS-1	EPS-3	EPS-4	EPS-5	EPS-6
Maximum flows of charged water (m <sup>3</sup> /h)	250	750	1.300	2.500	5.000
Installed power (kW)	2	3	4	5	5,5

## LOCATION: STRATEGIC POSITION

**B**  
**Bilbao**

Bilbao (Spain) 15 km



International Port of  
Bilbao (Spain) 25 km



Airport 8 km



Link to the European  
motorway network



Paseo de los Olmos, 5-1º  
20016 San Sebastian - Spain  
T: +34 (943) 39 62 47 / 39 54 44  
F: +34 (943) 39 58 45  
productos@roverasteca.com  
www.roverasteca.com



**TÉCNICAS HIDRÁULICAS S.A.**  
Aritz Bidea, 65. Apdo.17 - 48100 Munguía. Vizcaya - Spain  
T: +34 946 740 500 · F: +34 946 744 910  
info@thsa.com · www.thsa.com

