



# SBR

# Lineardekanter<sup>®</sup>

G.A.A.-Lineardekanter<sup>®</sup> for the clear water discharge of  
SBR treatment plants.

Discharge capacity between 60 m<sup>3</sup>/h and 1,400 m<sup>3</sup>/h



**MADE IN GERMANY**



## General Information

A large variety of mechanism is available for the clear water draw-off in SBR-treatment plants.

Apart from the reliable separation of sludge and floating solids from the clean water phase while decanting, the most important criterion for a plant operator is safety and maintenance-free operation.

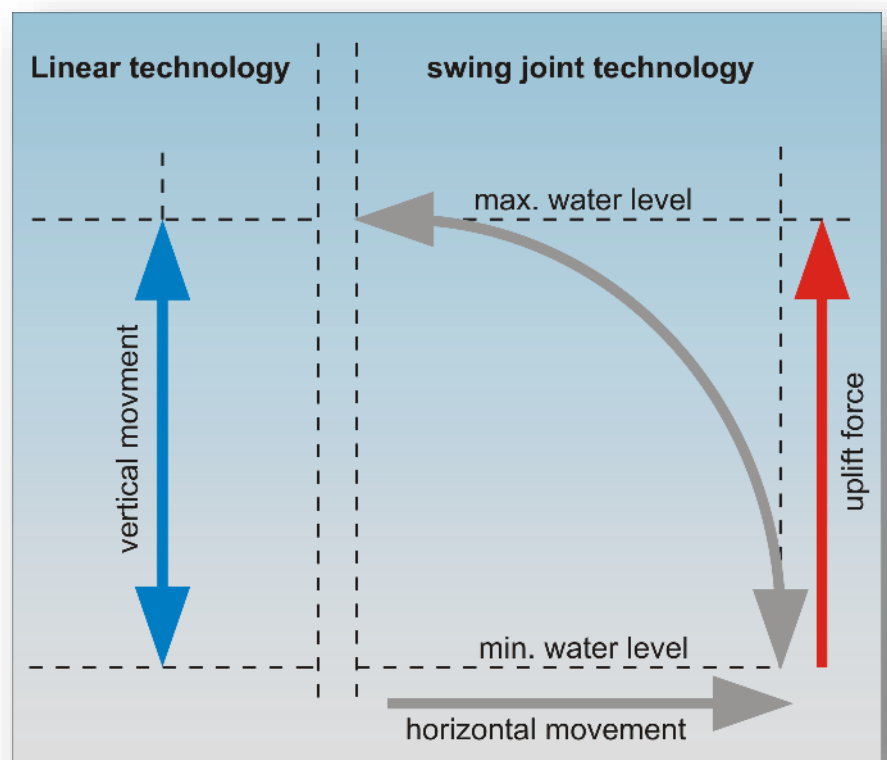
We offer an extensive assortment of clean water discharger models for numerous applications.

On the base of our long-standing experience in SBR-technology the clean water draw off - the **G.A.A.-Lineardekanter**<sup>®</sup> - is optimized in respect to energy consumption, operation security, discharge behavior and investment costs.

The **G.A.A.-Lineardekanter**<sup>®</sup> has proven its effectiveness and reliability in numerous SBR-treatment plants since 1996. The optimized and standardized technology ensures long-term operational reliability.

## G.A.A. Telescope Technology vs. Swing Joint Technology

The often-applied swing joint technology bears two essential disadvantages for the operator. First is the uplift force, which occurs when the diagonally fixed discharge pipes are partially or even completely empty. This upward force leads to an unsteadiness of the discharge behavior, which results in inefficient operation and finally in full stops of running decanting processes.



The second disadvantage of swing joint systems is the horizontal movement of the pipe in correlation with the water level fluctuation.



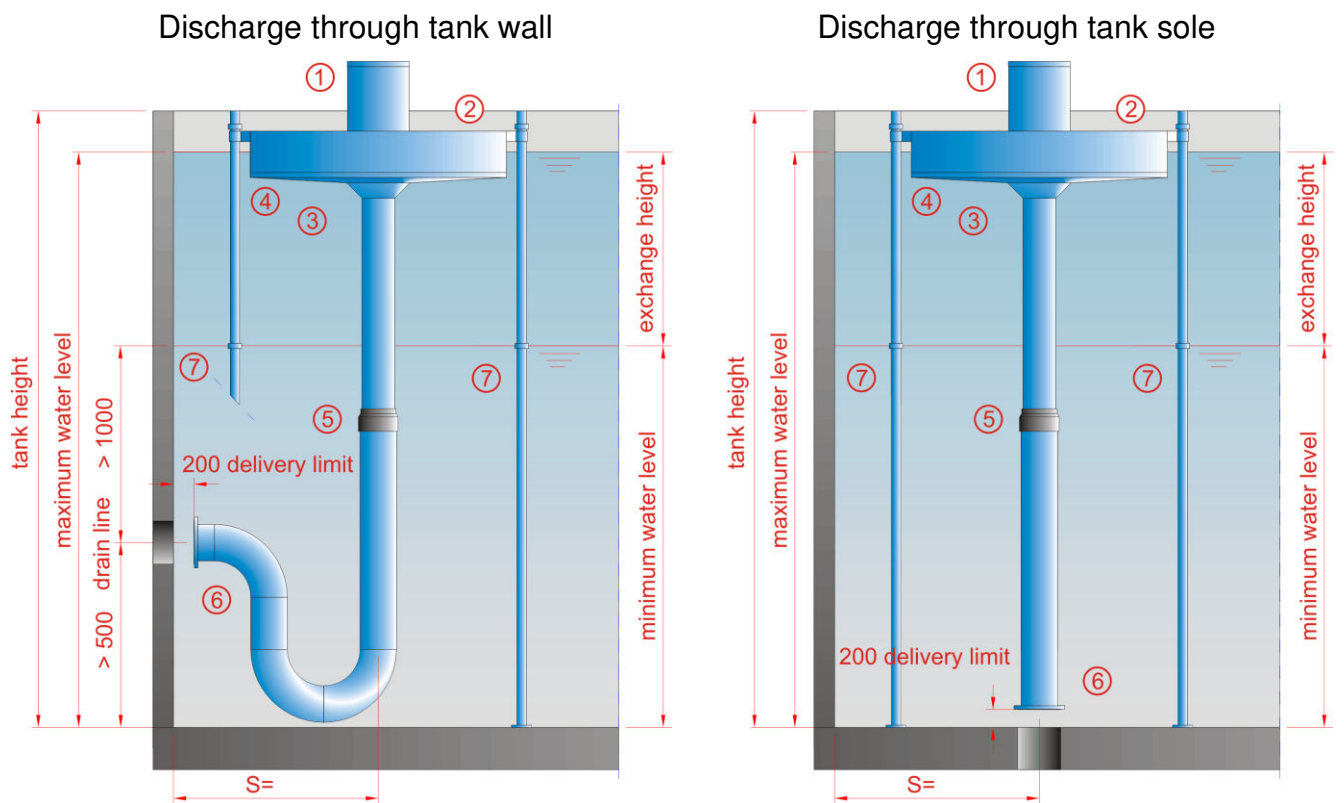
This horizontal displacement demands several square meters of tank surface although it contains no vital effect on the operation. Moreover, it affects the investment costs for the necessary maintenance.

**Water level fluctuations are purely vertical movements. So what is more obvious than to follow this movement?**

Our **linear technology** considers this aspect. Due to the specially developed construction no uplifting forces occur and a horizontally movement is eliminated.

**Linear technology** reduces the necessary movement to the essential. Therefore, investment costs and maintenance decreases to a minimum.

**Assembly example: Single telescope**



key			
1	drive unit	5	G.A.A.-Telescope
2	base unit	6	discharge
3	dynamic discharge	7	guiding bar
4	scum board		

One important argument of the Lineardekanter® success is the compact assembly in the shape of wastewater treatment plants. The Lineardekanter® can be located at the edge of any tank system and it is walk-on-able.

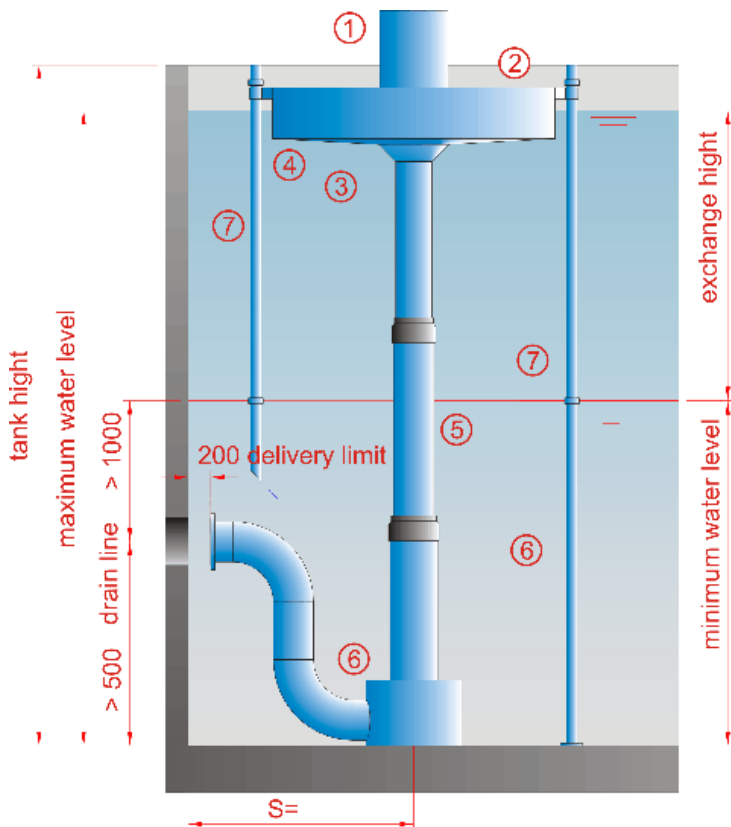
The minimum distance from the edge depends on the chosen flow rate and corresponds to an undisturbed linear inflow into the Decanter.

The unique position of the linear system is the operating range, which is limited to the diameter of the decanter head. Therefore, the tank geometry and arrangement of mixers or other devices is not limited or influenced by unwieldy side arms.

The Lineardekanter® is free of maintenance and made of stainless steel at customers choice. Variations of the installation result only in the piping system at the tank edge and bottom and solutions are actively assisted by GAA.

#### Assembly example: Double telescope

The double telescope is a special development for SBR plants demanding high exchange volumes up to 50%. Installation and assembly in different tank geometries is possible and assisted actively by G.A.A..





### Base and Drive Unit

The base is a floating, unsinkable unit with a PE-floater, a stainless steel shell and a flanged drive unit with actuator.

### Scum board

The scum board has a submergence of 200 to 300 mm preventing floating solids to drift off.

### Dynamic Discharge

When open, the discharge unit provides a regular, spherical inlet for the clean water simultaneously preventing settled sludge and floating solids to drift off. When closed, the waterproof outlet prevents the settled activated sludge to stream in.



### G.A.A.-Telescope System

The original **G.A.A.-Telescope System** adjusts to the changing water levels without initiating uplifting forces when the discharge pipe is empty.





## Outlet pipe

Depending on the requirements and the local conditions the outlet pipe can be led through the tank's sidewall or base.

## Immediate Operation

Assembly of the **G.A.A.-Lineardekanter®** (approx. ½ days per unit) with wall or base entrance on builder's part – electrical installation – the **Lineardekanter®** is ready for use.

The assembly and start-up costs are reduced to a minimum!

## Accessories at Surcharge and/or on Request

- Drive unit in protection type IP 68
- Drive unit with electronic remote-position indicator
- Drive unit with integrated control system
- Stainless steel elements for specific applications (e. g. chlorous wastewater)
- Alternative material for seals
- Turbidity probe and/or turbidity probe mounting plate



Material	
unsinkable floater	PE
base unit / discharge pipe	AISI 316 or 304
seals	EPDM, POM
flange	PP-St



## Sizes and Technical Data

type	LD 100	LD 150	LD 200	LD 250	LD 300	LD 350	LD 400	LD 450	LD 500
$Q_{max}$	60 m <sup>3</sup> /h	140 m <sup>3</sup> /h	240 m <sup>3</sup> /h	380 m <sup>3</sup> /h	540 m <sup>3</sup> /h	650 m <sup>3</sup> /h	850 m <sup>3</sup> /h	1,200 m <sup>3</sup> /h	1,400 m <sup>3</sup> /h
Discharge	DN 100	DN 150	DN 200	DN 250	DN 300	DN 350	DN 400	DN 450	DN 500
Weight approx.	260 kg	320 kg	340 kg	365 kg	415 kg	480 kg	505 kg	525 kg	558 kg
Work area	water level <sub>max</sub> /2								
Nominal capacity	120 W								
Voltage	380/400 V								
Frequency	50 Hz/60 Hz (Option)								
Protection type	IP 68								
Torque switch for open/close	yes								
Tandem switch for open/close	yes								
Heater in switch compartment	yes								

**Reference List Excerpt: Lineardekanter®**

Name	Location	Capacity [PE]	Qty.	Type	Date
Freienwill	Germany	2,000	2	LD 150	Sep 96
Sieverstedt	Germany	1,100	1	LD 150	Nov 96
Adelbyer Nordfrieslandmilch	Germany	20,000	2	LD 150	Feb 97
Adelbyer Nordfrieslandmilch	Germany	20,000	2	LD 200	Feb 97
Wehlen-Naundorf	Germany	4,000	2	LD 200	May 97
Stute Nahrungsmittelwerke	Germany	50,000	3	LD 300	Jul 97
Emmelsbuell	Germany	600	1	LD 150	Oct 97
Goergeshausen	Germany	1,400	1	LD 150	Jan 98
Satrup	Germany	25,000	3	LD 300	Sep 98
Coppenbruegge	Germany	6,000	2	LD 300	Oct 98
Duenzling	Germany	950	1	LD 150	Oct 98
Franzburg 2. Const- phase	Germany	4,500	1	LD 150	Nov 98
Konradshofen	Germany	500	1	LD 100	Nov 98
Temnitz Park	Germany	3,850	1	LD 300	Feb 99
Gammellund	Germany	1,000	1	LD 150	Jul 99
Kappeln	Germany	31,000	4	LD 400	Jul 99
Silberstedt	Germany	4,000	1	LD 300	Sep 99
Tuzla 1	Bosnien and Herzegowina	4,000	2	LD 200	Sep 99
Tuzla 2	Bosnien and Herzegowina	2,400	2	LD 150	Sep 99
Bollingstedt	Germany	1,000	1	LD 150	Nov 99
Gelting	Germany	4,500	2	LD 200	Nov 99
Messel	Germany	4,800	2	LD 300	Nov 99
Soerup	Germany	4,650	2	LD 250	Sep 00
Gaithein	Germany	13,000	2	LD 400	Oct 00
Nortorf	Germany	21,500	4	LD 300	Nov 00
Buensdorf	Germany	1,200	1	LD 150	Feb 01
Burgkunstadt	Germany	22,000	3	LD 450	Feb 01
Rickling	Germany	3,000	1	LD 250	Feb 01
Angermuende	Germany	6,000	2	LD 250	Jun 01
Langstedt / Eggebek	Germany	5,500	2	LD 250	Jun 01
Tangermuende	Germany	2,000	1	LD 300	Jun 01
Handewitt	Germany	6,000	2	LD 300	Oct 01





Name	Location	Capacity [PE]	Qty.	Type	Date
Casekow	Germany	1,000	1	LD 150	Nov 01
Niedererbach	Germany	1,400	1	LD 200	Mar 02
Großseelheim	Germany	6,400	2	LD 400	Apr 02
Weiskirchen-Thailen	Germany	12,000	2	LD 400	Sep 02
Kosel	Germany	3,000	2	LD 150	Nov 02
Berkenthin	Germany	4,800	2	LD 250	Nov 02
Großenwiehe	Germany	4,760	2	LD 200	Dec 02
Riedenburg	Germany	12,000	2	LD 400	Apr 03
Bordesholm-Reesdorf	Germany	25,500	4	LD 300	Jun 03
Treis-Karden	Germany	28,000	4	LD 500	Mar 03
Aukrug	Germany	7,000	2	LD 250	Jul 03
Wanderup	Germany	4,000	2	LD 250	Oct 03
Groß Wittensee	Germany	6,400	2	LD 250	Aug 03
Usadel	Germany	1,400	1	LD 200	Nov 03
Sachsenmilch / Leppersdorf	Germany	100,000	5	LD 400	Mar 04
Muehlen Eichsen	Germany	3,000	1	LD 200	May 04
Storck Werke / Halle (Westf.)	Germany	8,000	2	LD 200	Sep 04
Fockenbachtal / Straßenhaus	Germany	3,200	1	LD 250	Oct 04
Kropp	Germany	12,600	2	LD 300	Oct 04
Sieverstedt 2. Const. phase	Germany	2,400	1	LD 150	Oct 04
Hohenwestedt	Germany	8,000	2	LD 300	Feb 05
Munkbrarup	Germany	2,375	2	LD 150	Mar 05
Eschringen	Germany	11,500	2	LD 450	Apr 05
Kuelsheim	Germany	24,000	2	LD 300	May 05
Tangermuende 2. Phase	Germany	3,000	1	LD 150	May 05
Kasseburg	Germany	850	1	LD 150	Nov 05
Witzwort	Germany	850	1	LD 150	Dec 05
Erfde	Germany	3,200	2	LD 150	May 06
Guelzow	Germany	3,000	1	LD 250	Jul 06
Saarbruecken-Jaegersfreude	Germany	56,000	6	LD 450	Sep 06
Werthoelzli	Switzerland	8,000	2	LD 300	Oct 06
Pollenfeld	Germany	2,800	2	LD 250	Dec 06
Krummesse	Germany	4,800	1	LD 250	Feb 07
Werder	Germany	38,000	3	LD 300	Feb 07



Name	Location	Capacity [PE]	Qty.	Type	Date
Ehlscheid	Germany	2,300	2	LD 200	May 07
Dedelsdorf	Germany	2,000	2	LD 150	Oct 07
Xia Jiahe	P.R. o China	130,000	4	LD 500	Nov 07
Lahr	Germany	3,300	2	LD 300	Dec 07
Kleinrinderfeld	Germany	3,000	1	LD 250	Dec 07
Adlkofen	Germany	3,000	1	LD 200	Apr 08
Zella-Mehlis	Germany	22,000	4	LD 400	Apr 08
Lichtenau	Germany	9.500	4	LD 250	Jul 08
Nauroth-Moerlen	Germany	2,400	1	LD 250	Aug 08
Wertheim	Germany	2,500	3	LD 250	Aug 08
Neufahrn	Germany	18,000	2	LD 450	Aug 08
Neudenau	Germany	8,000	2	LD 450	Sep 08
Mengxi	P.R. o China	70,000	4	LD 450	Sep 08
Hausen	Germany	18,000	2	LD 450	Sep 08
Glaeserne Molkerei	Germany	3,000	1	LD 100	Dez 08
Widdern	Germany	16,000	2	LD 400	Mar 09
Wagbach	Germany	44,000	4	LD 450	Aug 09
Ptuj	Slovenia	68,000	4	LD 500	Okt 09
Maasholm	Germany	2,500	1	LD 250	Sep 09
Ruescheid	Germany	1,000	1	LD 200	Nov 09
Holz Kirchhausen	Germany	15,000	3	LD 250	Mar 10
Pukekohe	New Zealand	30,000	4	LD 400	Apr 10
Wudalianchi	China	21,600	1	LD 500	May 10
Sachsenmilch / Leppersdorf 2	Germany	120,000	1	LD 400	May 10
Beian	China	130,000	4	LD 500	Jun 10
Montereau Grande Paroisse	France	25,000	4	LD 350	Jun 10
Xingtai	P.R. o China	210,000	8	LD 500	Sep 10
Xiwuzhumuqing	P.R. o China	40,000	2	LD 500	Feb 11
Dorf Güll	Germany	3,700	1	LD 250	Mar 11
Lampoldshausen	Germany	1,500	2	LD 100	Mar 11
Yingchengzi	P.R. o China	40,000	2	LD 500	May 11



Name	Location	Capacity [PE]	Qty.	Type	Date
Hammelburg	Germany	10,000	3	LD 200	June 11
Witzwort 2. BA	Germany	7,000	1	LD 200	Nov 11
Heidenheim	Germany	3,000	1	LD 300	Dec 11
Morrinsville	New Zealand	30,000	4	LD 500	Jan. 12
Crailsheim	Germany	2,000	1	LD 200	Mar 12
Daweijia	P.R. o China	8,000	1	LD 500	April 12
Steirerfleisch	Austria	5,000	1	LD 150	May 12
Zalaite	P.R. o China	60,000	2	LD 500	May 12
Heidenheim	Germany	5,000	1	LD 300	May 12
Makatau	New Zealand	4,500	2	LD 200	July 12
Dairy Wiesehoff	Germany	16,000	3	LD 150	Aug 12
Warracknabeal	Australia	2,500	2	LD 250	Aug 12
St Arnaud	Australia	2,300	2	LD 250	Aug 12
Friedrichstadt	Germany	10,000	2	LD 300	Aug 12
Weixia	P.R. o China	80,000	4	LD 500	Aug 12
Kohila	Estonia	6,600	2	LD 250	Aug 12
Sainte Suzane	France	20,000	4	LD 400	Nov 12
Crailsheim	Germany	2,000	1	LD 200	Mar 13
Dongwuqi	P.R. o China	40,000	2	LD 500	April 13
Frankfurt AIRPORT	Germany	100,000	4	LD 500	July 13
Niebüll	Germany	20,000	2	LD 300	Sep 13
Makatau	New Zealand	4,500	2	LD 200	Aug 13
Kapashera	India	100,000	6	LD 500	Jan 14
Vopak East	Netherlands	5,000	1	LD 250	Jan 14
Buch	Germany	3,500	1	LD 300	Jan 14
Großbellhofen	Germany	1,400	1	LD 200	Mar 14
Mumbra	India	130,000	8	LD 500	May 14
Friedrichstadt	Germany	3,500	1	LD 300	June 14
Haljala	Estonia	22,000	2	LD 200	June 14



Name	Location	Capacity [PE]	Qty.	Type	Date
Bosch	Vietnam	15,000	4	LD 200	June 14
Münster	Germany	15,000	3	LD 150	June 14
Schwabstedt	Germany	2,500	1	LD 150	June 14
Paide	Estonia	40,000	3	LD 450	July 14
Kanstancin	Poland	60,000	4	LD 400	July 14
Creuzburg	Germany	5,000	2	LD 200	Oct. 14
Alfeld	Germany	1,600	1	LD 250	Nov 14
Bauma	Switzerland	30,000	3	LD 300	Dec 14
Funza	Columbia	45,000	2	LD 450	Feb. 15
Kambja	Estonia	1,000	1	LD 100	Mar 15
Rott	Germany	4,500	2	LD 250	April 15
Itzehoe	Germany	4,000	2	LD 100	May 15
Silberstedt; extension	Germany	3,600	1	LD 300	Sep 15
Roche	Switzerland	1,500	1	LD 150	Sep 15
Muuga	Estonia	50,000	3	LD 450	Dec 15
Duisburg	Germany	450,000	2	LD 300	June 16
Kappeln; extension	Germany	45,000	2	LD 400	Aug 16
Rothemann	Germany	5,000	1	LD 350	Sep 16
Kuwait Petroleum Rotterdam	Netherlands	20,000	2	LD 450	Nov. 16
Erlangen	Germany	5,000	2	LD 200	Jan 17
Frankenstein	Germany	1,200	1	LD 200	May 17
Revkuhl	Germany	10,000	2	LD 250	Nov. 17
Hunnan	P.R. o China	500,000	16	LD 500	Dec. 17
Uhldingen	Germany	10,000	1	LD 150	Jan. 18
Creuzburg	Germany	8,000	1	LD 250	Nov. 18
PTAR Madrid	Columbia	77.000	6	LD 300	Dec. 18
Kappeln Extension	Germany	40,000	2	LD 400	Jan. 19
Krummhörn	Germany	20,000	1	LD 400	May 19
Husayniy	Iraq	350,000	12	LD 500	Under const.



Name	Location	Capacity [PE]	Qty.	Type	Date
Ludhiana CETP	India	300,000	8	LD 450	Under const.
Beur	India	180,000	8	LD 500	Under const.
Karmalichak	India	155,000	8	LD 450	Under const.
Bangalore	India	165,000	8	LD 450	Under const.
Dukhan	Qatar	180,000	6	LD 400	Under const.
Duisburg-Huckingen	Germany	200.000	8	LD 450	Under const.
Wassmannsdorf	Germany	15.000	4	LD 250	Under const.
Jastarnia	Poland	20,000	4	LD 300	Under const.
HIPP Herford	Germany	6,000	1	LD 300	Under const.
Wallhausen	Germany	10,000	3	LD 250	Under const.
Kerikeri	New Zealand	12,000	2	LD 300	Under const.
Dayangshu	P.R. o China	20,000	2	LD 500	Under const.
Wesselburen	Germany	6,000	2	LD 250	Under const.
PTAR Madrid 2	Columbia	30,000	2	LD 300	Under const.
Bensheim Deammonification	Germany	20,000	1	LD 150	Under const.