

## About MaoYuan



Yangzhou Maoyuan Environmental Protection Technology Co.,Ltd. is located in the Chinese famous historical and cultural city—Yangzhou, a professional one-stop sludge disposal solution provider and supplier of one-stop wastewater treatment solution. Specialized in on high-efficiency screw press sludge dewatering machine, sludge drying machine, complete set of wastewater treatment equipment, lake silt drying machine and relevant technical services.

Maoyuan staff attaches great importance in R&D and our own technology innovation. While keeping close cooperation with major universities and research institutes in China, we continuously strengthen our R&D and develop new technologies such as "high-efficiency solid-liquid separation" and "high-efficiency sludge drying" on the basis of combining dozens years of experience in R&D and engineering practice, so as to continuously keep enriching our popularity and influence among the industry.

Product quality and service are something our company treats like life from start to end. Our company has passed ISO9001 international quality management system certification and strictly follows the requirements. Full sets of process control and management system are settled from R&D, raw materials procurement, manufacturing, quality inspection and after-sale services. To maintain the high level of our products and services, we prepared several general standards and dozens of professional standards to guide the manufacturing and services. Meanwhile, the perfect after-sale services system can guarantee steady operation of every unit coming from Maoyuan to make sure they create value for our clients reliably.

Since the establishment, the company has always adhered to specialization, quality and intelligence. We believe that only concentration makes profession. After years of efforts, the company has made rapid progress in the sludge treatment industry. Products made by Maoyuan are widely applied by World top 500 enterprises, Sinopec, PetroChina, CNOOC and BASF Chemical. Automobile enterprises—the Great Wall automobile, Brewery enterprises—CRB, Water engineering enterprises – Yunnan water and China Water Group. Beverage enterprises—Red Bull and JDB Group, Food processing enterprises—Shuanghui and New Hope Group and other well-known enterprises form all industries. In addition, our products are widely used in Municipal wastewater, Chemical, Pharmaceutical, Petroleum, Food and Beverage. Paper making, Printing and dyeing, Coating, Livestock and many other industries. All received high praises from our customers. Be grateful for the source of development. Maoyuan takes technological innovation and solving the pollution as a mission, committed to become a leading environmental protection company with leading technology and high-quality products, sincerely provide better services for our customers.

扬州茂源环保科技有限公司坐落于中国历史文化名城—扬州，是专业的一站式污泥处理成套解决方案和一站式污水处理成套解决方案的供应商，专业提供高效叠螺式污泥脱水机、高效污泥干化设备、污水处理成套设备、河湖淤泥干化设备与技术服务。

茂源人注重研发与自主技术创新，公司和国内各大高校和科研单位保持密切合作的同时，不断加大自身的研发力量，

在多年研发与工程实践相结合的基础上开发出“高效固液分离技术”、“高效污泥干化技术”等新技术，不断扩大企业在行业内的知名度与影响力。

茂源环保始终将产品质量和客户服务视为企业生命，公司已取得 ISO9001 质量体系认证并且严格执行 ISO9001 质量管理体系的有关要求，从产品研发、原材料采购、生产制造、产品质量检验和售后服务均建立了完整完善的流程控制和管理体系，为保证产品制造及售后服务的高质量，我们用多项常规标准和十几项专业标准来规范指导我们的产品制造和服务。同时公司完善的售后服务体系保证了每一台茂源环保设备均能稳定、可靠的运行为客户创造价值。

我公司成立之初一直坚持产品专业化、精品化和智能化发展，我们相信只有专注才能专业。经过近年的努力，公司在污泥处理和污水处理行业取得了快速的发展，茂源环保的产品已广泛应用于世界 500 强企业 - 中国石化、中国石油、中海油和德国巴斯夫化学，中国知名汽车企业 - 长城汽车，中国知名的啤酒企业——华润雪花，中国知名水务投资企业 - 云南水务和中国水务集团，中国知名饮料企业 - 红牛和加多宝集团，中国知名食品加工企业 - 双汇集团和新希望六和等各行知名企业，另外公司产品还广泛应用于市政污水处理、化工制药、石油石化、食品饮料、造纸、印染、涂料、畜牧等等多个行业。并获得了客户的一致认可。

枝繁叶茂，饮水思源，茂源环保以技术创新，解决污水和污泥环境污染问题为使命，致力于成为技术领先的环保企业，始终以领先的技术、高品质的产品竭诚为用户提供更为完善的服务。

# CONTENTS



枝繁叶茂  
饮水思源

## Maoyuan product Catalogue

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## Technological



**Setting higher standards in sludge drying**  
 Maoyuan energy-efficient low-temperature sludge drying equipment subverts traditional drying methods and defines a new solution for sludge drying reduction in the world

## Application and reuse

The low temperature sludge drying equipment which is developed by Maoyuan can directly dry sewage or sludge with a moisture content of 83% to dry sludge with a moisture content of 10% -30%, with a reduction of up to 90% and effective sterilization up to 90%, Low energy consumption, no pollution, widely used in municipal and industrial sludge (printing and dyeing, papermaking, electroplating, chemical, leather, pharmaceuticals, etc.) drying reduction, the dry sludge with 10% -30% moisture can be gasified and harmlessly disposed as resources, such as burning, composting or building materials.



moisture content rate 83% sludge

**STABLE AND HARMLESS**  
 Dry sludge effective sterilization 90%  
 Stable in nature without secondary pollution

Reducing quantity 67% -86%

**REDUCTION**  
 Directly dry 82% water-containing sludge to 10%, reduce 80%

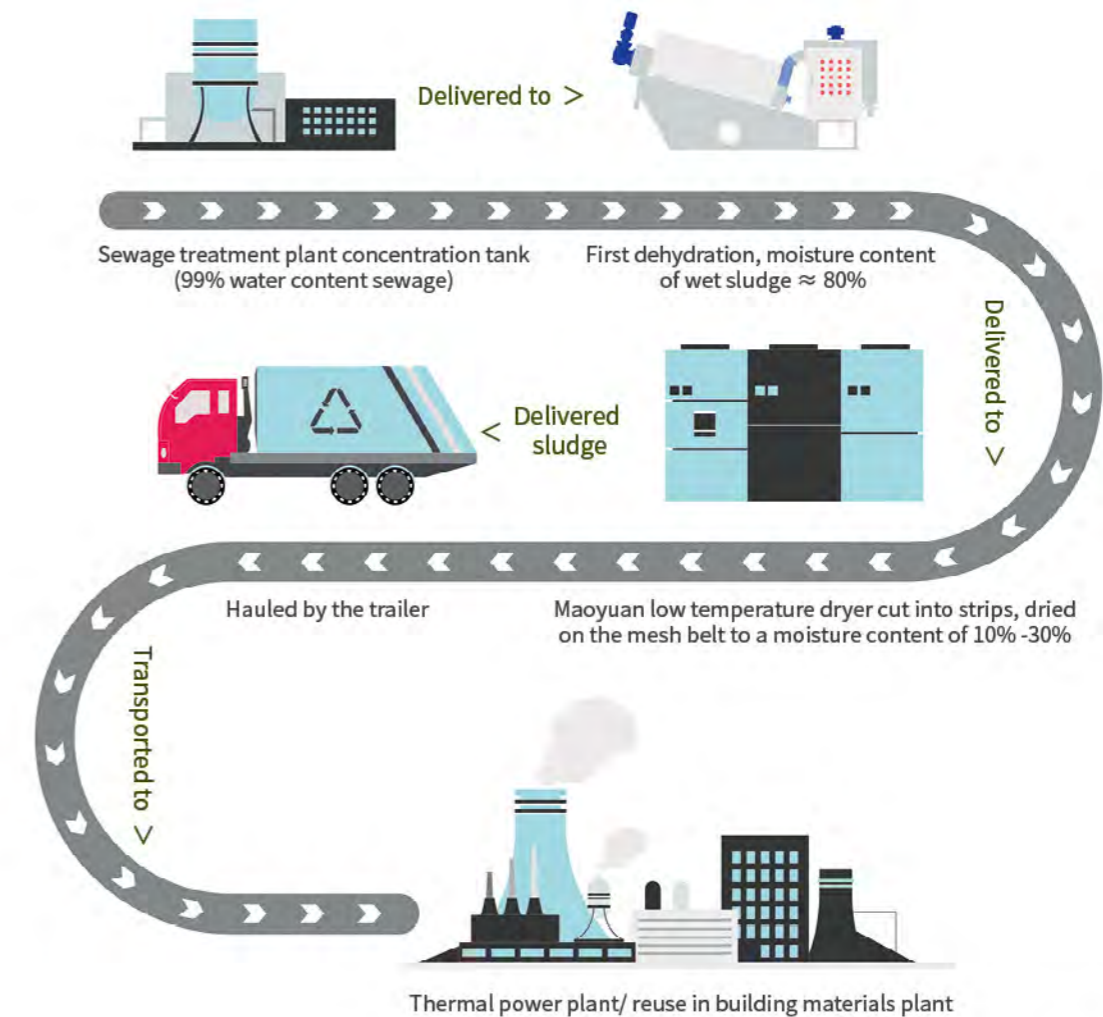
moisture content rate 10% sludge

**RESOURCE**  
 The final sludge particles can be harmlessly disposed as resources

## System composition



## Flow chart



## System features

### Comprehensive comparison of belt dryer

Item	Medium temperature belt drying	Low-temperature belt drying
Sludge laidon	Stainless steel belt or chain	Stainless steel belt
Heat source	Coal, oil, gas (anaerobic digestion gas)	Water vapor condensation heat
Heat pump	110-150 °C	40-75°C
Heating method	Steam, hot air	Dehumidification heat pump
Dehumidification	Open type (dehumidification + condensation)	Closed condensation (no heat loss)
Feed forming	Squeezing, cutting, granulating	Squeezing, cutting, granulating
Exhaust gas treatment	Requires expensive deodorizing system	No
Dry material cooling	High material temperature, stored after cooling	Low material temperature, can be stored directly
Energy consumption	Heating(2880KJ/kgH2O) + electricity(0.1kwh/kg H2O)	Electricity(0.25kwh/kgH2O)
System supporting facility	Many facilities,complex installation	Few facilitie, simple installation, short cycle

### Performance comparison with frame filter press

Item	Frame filter press	Low temperature belt drying
Civil costs	High requirements for plant construction and high cost	Low cost simple plant
Floor space	2000 m <sup>2</sup> / 100t wet sludge	500 m <sup>2</sup> / 100t wet sludge
Operating cost	About 100-180 yuan / ton	200kwh / ton
Moisture content of dried sludge	50-65%	≤ 30%
Odor	Open, odor spills and affects the environment	Fully enclosed and zero emissions, no impact on the environment
Dried sludge reutilization	Has low calorific value,increasing cost of reutilization	Has high calorific value,suitable for reutilization
Sewage	Sewage discharge after pressing, secondary pollution	Condensate only, no pollution

### Comprehensive comparison with other traditional dryers

Item	Drum type (waste heat)	Turntable (vertical, horizontal)	Thin layer evaporator + belt drying	Paddle	Low temperature belt drying
Drying temperature	200-300°C	>150°C	>150°C	>150°C	40-75°C
Drying method	Heat convection (direct)	Heat conduction (direct)	Heat conduction (direct)	Heat conduction (direct)	Hot air circulation
Heating method	Hot air, smoke	Steam, thermal oil	steam	Steam, thermal oil	Heat pump
Dust content	High	High	High	Relatively high	No
safety	High filling degree and high operating temperature	High operating temperature requires nitrogen	High operating temperature	High operating temperature	Low temperature safety
Exhaust gas treatment	Requires expensive deodorizing system				No
Mechanical friction	Huge	Huge	Huge	Huge	No
Heat consumption k / kg water	3400	2800	2300	2800	No
Power consumption kwh / kg water	0.7	0.5	0.53	0.4	0.25

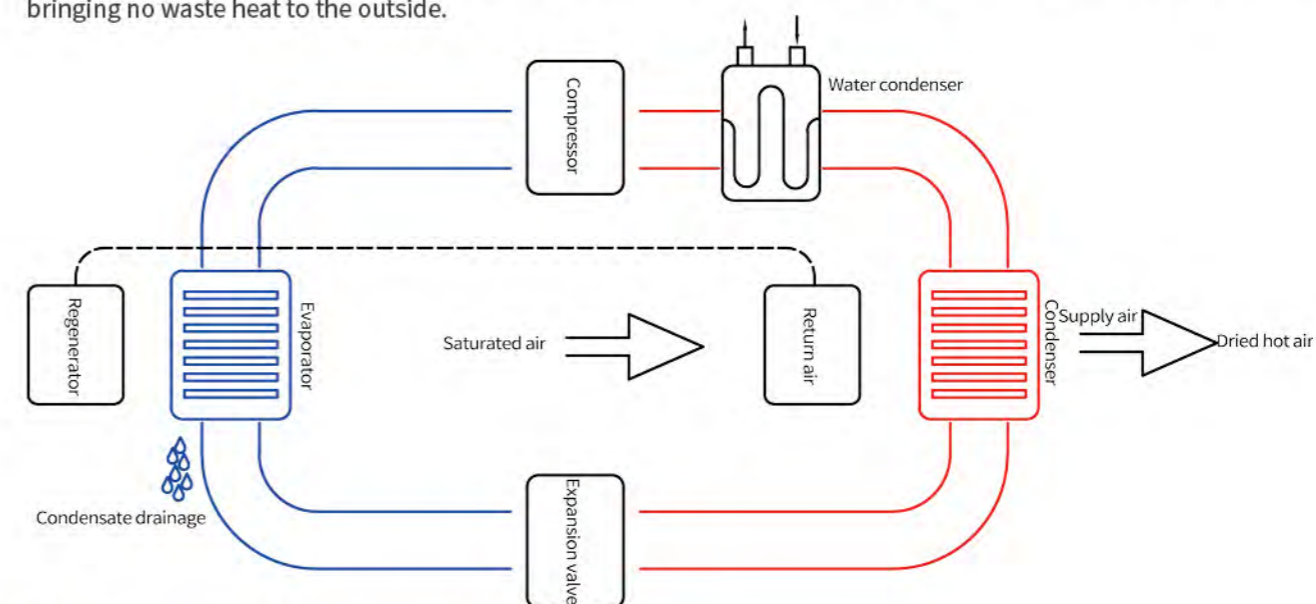
### Comparison of dried sludge disposal and reuse

Item	High temperature thermal hydrolysis+ anaerobic digestion+ plate and frame filter press	Heat drying	Low-temperature carbonization	Plate and frame filter press+lime+ thermal drying	Low-temperature dehumidification and drying
Dried sludge water content	60%	20-40%	20%	40%	10-50% adjustable
disposal method	Landfill and compost	Incineration + blending	Incineration	Cement kiln	All ways
energy	Anaerobic + electricity	Fuel oil, gas + coal	Fuel oil, gas + coal	Electricity + potion + lime	Electricity
Area	Big	small	small	Big	small
Operability	Professional team needed	Poor security	Moderate	Moderate	simple
Deodorant	Moderate	Need to install deodorant	Need to install deodorant	Need to install deodorant	No need to deodorize
Applicability	Higher organic content	Be applicable	Higher organic content	Be applicable	Be applicable
Energy consumption	Moderate	high	Moderate	high	low

## Low temperature belt-type sludge dryer



Dehumidification heat pump is equipment that it utilizes refrigeration system to cool and dehumidify hot and wet air, in the meantime, through the principle of heat pump, it recycles the latent heat released from steam congealing to water liquid. Dehumidification heat pump = Dehumidification (moist dehumidifying) + heat pump (energy recycling). Dehumidification heat pump can collect all the latent heat and sensible heat during air exhaust, bringing no waste heat to the outside.

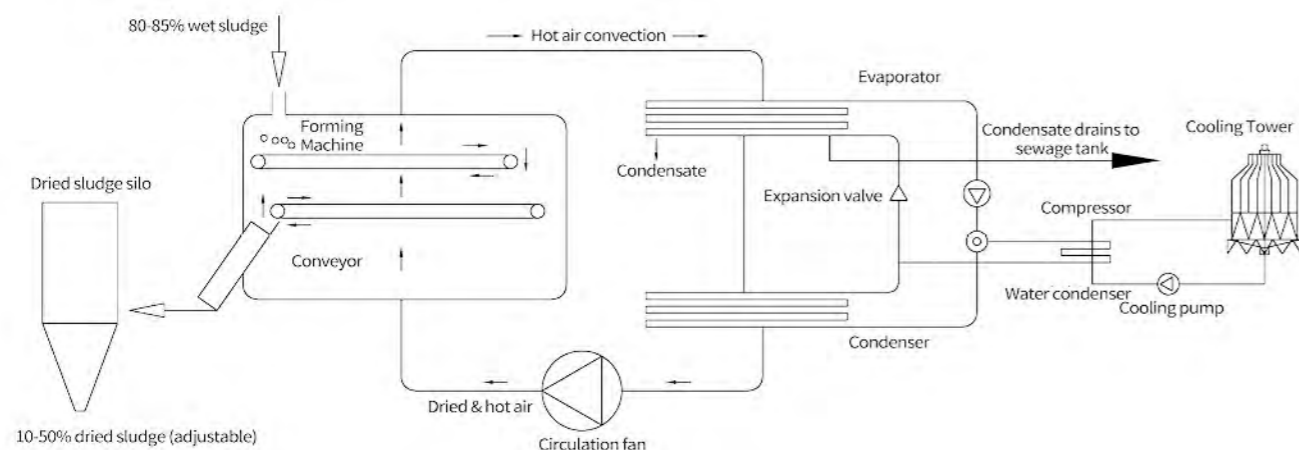


### Technical Parameters

Model	MYB600SL	MYB1200SL	MYB2400FL	MYB4800FL	MYB7200FL	MYB9600FL	MYB14400SL
Standard Dehumidification Capacity/24h	600kg	1200kg	2400kg	4800kg	7200kg	9600kg	14400kg
Standard Dehumidification Capacity/h	25kg	50kg	100kg	200kg	300kg	400kg	600kg
Working Power	8kw	15kw	26kw	52kw	75kw	104kw	156kw
Dehumidification Heat Pump Module	1set	1set	1set	2set	3set	2set	3set
Compressor Amount	1set	1set	4set	8set	12set	8set	12set
Cooling Method	Water cooling SL		Forced-air cooling FL				Water cooling SL
Flow of cooling water $\Delta t=15^{\circ}\text{C}$	//	//	//	//	//	//	9m <sup>3</sup> /h
Size(mm)(L*W*H)	2625*1277*1850	3170*1580*2080	3760*2190*2420	6460*2190*2420	9160*2190*2420	7900*3110*3200	11150*3110*3200
Structure	Whole set	Whole set	Whole set/Assembled set	Assembled set	Assembled set	Assembled set	Assembled set
Weight(t)	1.6	2.0	3.2	5.8	8.0	9.1	12.3

### Low temperature drying principle

The low temperature sludge dryer, which independently developed by Maoyuan, works by the principle of dehumidification heat pump. It makes the convection hear go through the wet sludge laid on the conveyor belt, evaporating the moisture of the sludge. Since the whole system is proceeded in a closed loop, there is no waste of any heat during the process.



Model	MYB19200SL	MYB24000SL	MYB28800SL	MYB33600SL	MYB38400SL	MYB43200SL	MYB48000SL
Standard Dehumidification Capacity/24h	19200kg	24000kg	28800kg	33600kg	38400kg	43200kg	48000kg
Standard Dehumidification Capacity/h	800kg	1000kg	1200kg	1400kg	1600kg	1800kg	2000kg
Working Power	208kw	260kw	312kw	364kw	416kw	468kw	520kw
Dehumidification Heat Pump Module	4set	5set	6set	7set	8set	9set	10set
Compressor Amount	16set	20set	24set	28set	32set	36set	40set
Cooling Method	Water cooling SL						
Flow of cooling water $\Delta t=15^{\circ}\text{C}$	12m <sup>3</sup> /h	15m <sup>3</sup> /h	18m <sup>3</sup> /h	21m <sup>3</sup> /h	24m <sup>3</sup> /h	27m <sup>3</sup> /h	30m <sup>3</sup> /h
Size(mm)(L*W*H)	14400*3110*3200	17650*3110*3200	20900*3110*3200	24150*3110*3200	27400*3110*3200	30650*3110*3200	33900*3110*3200
Structure	Assembled set	Assembled set	Assembled set	Assembled set	Assembled set	Assembled set	Assembled set
Weight(t)	15.5	17.7	21.9	25.1	28.3	31.5	34.7

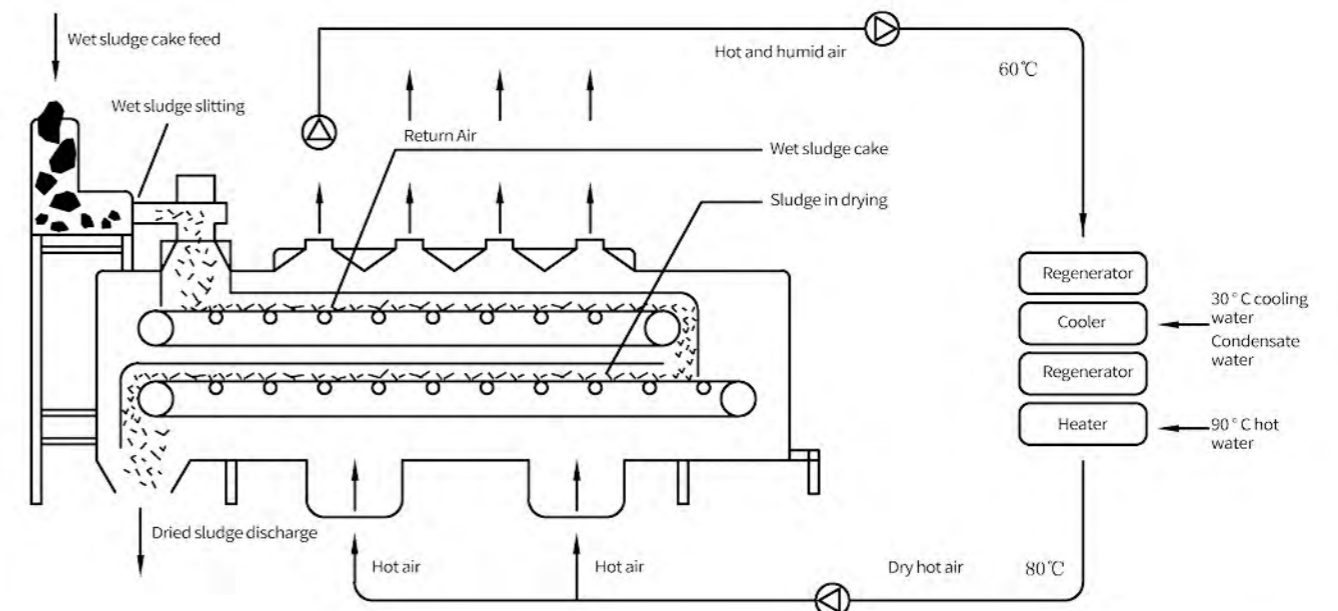
## Appendix

Refrigerant	R134a
Power Supply	(220V\380V\440V)/3H/50Hz(60Hz)
Drying Temperature	48 - 56°C (recycle air)/6S ~ 80°C (supply air)
Control System	Touch screen+PLCprogrammable control system
Applicable Range for Inlet Sludge	Water rate (40%-82%)(others is available for customization and testing)
Applicable Range for Outlet Sludge	Variable Frequency control to realize outlet range (10%-60%)
Shaping Method	Slitting(70%~83%)

## Low temperature waste-heat sludge drying



## Flow chart



## Technical Parameters

Model	MYR5000	MYR10000	MYR15000	MYR20000	MYR25000
Standard Dehumidification Capacity/24h	≈ 5000kg	≈ 10000kg	≈ 15000kg	≈ 20000kg	≈ 25000kg
Standard Dehumidification Capacity/h	≈ 208kg	≈ 416kg	≈ 624kg	≈ 832kg	≈ 1040kg
Working Power	13kw	26kw	39kw	52kw	65kw
Standard Heat-supplied power	200kw	400kw	600kw	800kw	1000kw
Standard Heat-supplied conditions	90°C /70°C (hot water)				
Hot water flow rate	8.6m³/h	17.2m³/h	25.8m³/h	34.4m³/h	43m³/h
Standard cooling power	180kw	360kw	540kw	720kw	900kw
Cooling water flow rate Δ t=12°C m³/h	13m³/h	26m³/h	39m³/h	52m³/h	65m³/h
Heat exchanger module quantity	1set	2set	3set	4set	5set
Size(mm)(L*W*H)	4560*3110*3200	7900*3110*3200	11150*3110*3200	14400*3110*3200	17650*3110*3200
structure	Assembled set	Assembled set	Assembled set	Assembled set	Assembled set
Weight	5.7t	8.6t	12.3t	14.8t	16.5t

Model	MYR30000	MYR35000	MYR40000	MYR45000	MYR50000
Standard Dehumidification Capacity/24h	≈ 30000kg	≈ 35000kg	≈ 40000kg	≈ 45000kg	≈ 50000kg
Standard Dehumidification Capacity/h	≈ 1248kg	≈ 1458kg	≈ 1667kg	≈ 1875kg	≈ 2083kg
Working Power	78kw	91kw	104kw	117kw	130kw
Standard Heat-supplied power	1200kw	1400kw	1600kw	1800kw	2000kw
Hot water flow rate	51.6m³/h	60.2m³/h	68.8m³/h	77.4m³/h	86m³/h
Standard cooling power	1080kw	1260kw	1440kw	1620kw	1800kw
Cooling water flow rate Δ t=12°C m³/h	78m³/h	91m³/h	104m³/h	117m³/h	130m³/h
Heat exchanger module quantity	6set	7set	8set	9set	10set
Size(mm)(L*W*H)	20900*3110*3200	24150*3110*3200	27400*3110*3200	30650*3110*3200	33900*3110*3200
structure	Assembled set	Assembled set	Assembled set	Assembled set	Assembled set
Weight	20.4t	23.4t	26.3t	29.3t	32.2t

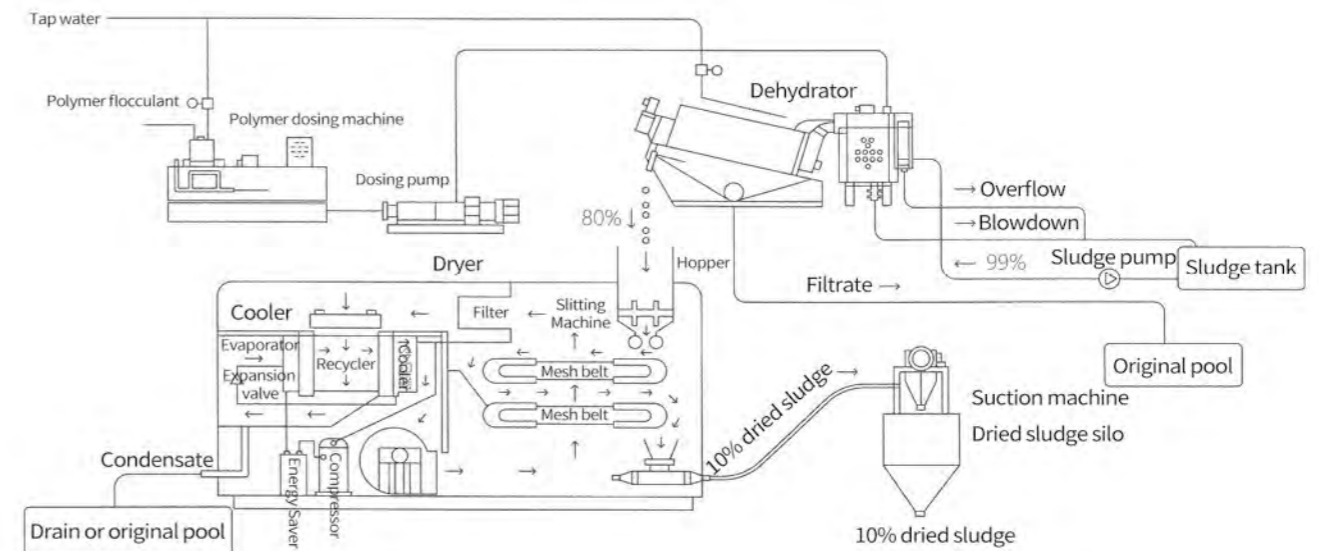
## Appendix

Standard Heat-supplied conditions	90°C /70°C (hot water)
Cooling condition	33°C /45°C (condensate water)
Electric power source	(220V/380V/440V) /3H/50HZ (60Hz)
Standard drying temperature	50~65°C (recycle air)/68-85°C (supply air)
Heat power source	1.Flue gas waste heat;2.Steam/Steam condensate water;3.Anaerobic digestion;4.Sludge pyrolysis;5.Gen-set waste heat
Control System	Touch screen+PLCprogrammable control system
Applicable Range for Inlet Sludge	Water rate(40%-82%)(others is available for customization and testing)
Applicable Range for Outlet Sludge	Variable Frequency control to realize outlet range(10%~60%)
Shaping Method	Slitting(70%~83%)

## Low temperature sludge dryer-Dewatering & Drying



## Flow chart



## Technical Parameters

Model	MYT140	MYT280	MYT560	MYT1120	MYT1680	MYT2500	
Sludge scale(DS/24h) (Dried solid)	140kg	280kg	560kg	1120kg	1680kg	2500kg	
Capacity of 80%wet Sludge per 24h(converted from 20%DS)	720kg	1440kg	2880kg	5760kg	8640kg	13000kg	
Specification of Spiral filter press	MYEP201	MYEP251	MYEP301	MYEP302	MYEP303	MYEP352	
Specification of sludge dryer	MYB600SL	MYB1200SL	MYB2400FL	MYB4800FL	MYB7200FL	MYB10800FSL	
Evaporation capacity(kg/d)	600	1200	2400	4800	7200	10800	
Working Power	Spiral filter press	0.55kw	1.1kw	1.3kw	2.25kw	3.35kw	3.3kw
	Sludge dryer	7kw	14kw	26kw	50kw	75kw	105kw
Size(mm)(L*W*H)	2625*1277 *1850	3170*1580 *2080	3810*2215 *2420	6510*2215 *2420	9210*2215 *2420	7900*3110 *3200	
Weight	1870kg	2530kg	4000kg	6800kg	10800kg	12000kg	

Model	MYT3750	MYT5000	MYT6250	MYT7500	MYT8750	MYT10000	
Sludge scale(DS/24h) (Dried solid)	3750kg	5000kg	6250kg	7500kg	8750kg	10000kg	
Capacity of 80%wet Sludge per 24h(converted from 20%DS)	19500kg	26000kg	32500kg	39000kg	45500kg	52000kg	
Specification of Spiral filter press	MYEP353	MYEP354	MYEP352+ MYEP353	MYEP353+ MYEP353	MYEP353+ MYEP354	MYEP354+ MYEP354	
Specification of sludge dryer	MYB16200FSL	MYB21600FSL	MYB27000FSL	MYB32400FSL	MYB37800FSL	MYB43200FSL	
Evaporation capacity(kg/d)	16200	21600	27000	32400	37800	43200	
Working Power	Spiral filter press	4.8kw	5.9kw	8.1kw	9.6kw	10.7kw	11.8kw
	Sludge dryer	155kw	205kw	255kw	305kw	355kw	405kw
Size(mm)(L*W*H)	11500*3110 *5800	1440*3110 *5800	17650*3110 *3200	20900*3110 *5800	24150*3110 *5800	27400*3110 *6200	
Weight	16000kg	20000kg	4000kg	28000kg	32000kg	36000kg	

## Appendix

Model	参数
Inlet (wet)sludge moisture	98%~99.3%
Outlet(dried)sludge moisture	10%(10%~60% adjustable)
Electric consumption(Dry to 10%~40%wet)(per t.DS)	880kw.h/t.DS~740kw.h/t.DS
Electric consumption(Dry to 10%~40%wet)(per t80%wet sludge)	176kw.h/t~145kw.h/t
Polymer amount(per t.DS)	4~7kg/t.DS
Polymer amount(per t. 80%wet sludge)	1.0~1.4kg/t
Rinsing water amount(per t.DS)	2.5t/t.DS

## Low temperature container-type sludge dryer



## Features

10%

### EFFICIENCY

- Sludge moisture content can be reduced from 83%to 30-10%(adjustable as required)
- Sludge volume is reduced by 67% and weight by80%

1:4.2

### INNOVATION

- By originally developed "quadruple-effectdehumidification technology", the dehumidifying capacity reaches as high as 4.2 kg.H2O/kWh, which is the worlds leading technology standard
- Energy-consumption saved by 50% compared to the traditional drying equipment



### ENVIRONMENT

- No odor emission during the process in a closed cabinet; No need for any expensive odor removal equipment
- Available to be built inside the factory for sludge centralized processing
- The clear condensate water from the drying process can directly drain to sewage pool without any secondary treatment

100%

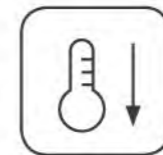
### UTILIZATION

- No heat waste during the drying process in a closed loop system
- No need for high temperature heating like other open-type drying equipment

180 kWh/t

### ECONOMICAL

- The running cost of drying wet sludge from 83% moisture to 30% is only 180 kWh/t

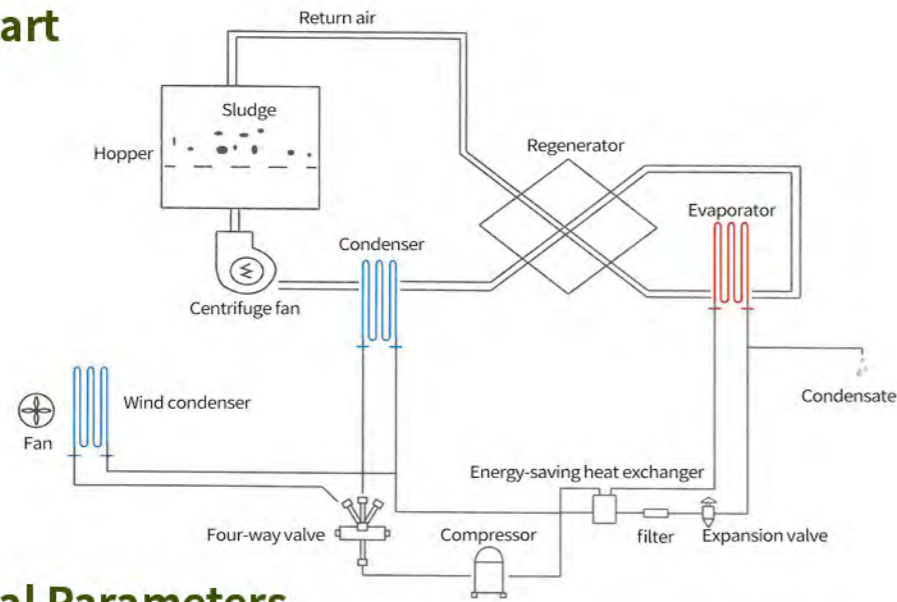


### SAFETY

- Low processing temperature 40-75 °C in a closed cabinet, no need for nitrogenization
- Oxygen content <12%, Dust concentration 60g/m<sup>3</sup>, Dried sludge temperature <70°C
- Outlet Sludge<50°C , no need secondary cooling and can be stored directly



## Flow chart



## Technical Parameters

Model	MYX200	MYX400	MYX800
Standard Dehumidification Capacity/24h	200kg	400kg	800kg
Standard Dehumidification Capacity/h	8~13kg/h	15~23kg/h	30~46kg/h
Working Power	3.5kw	6.0kw	12kw
Hopper Size(mm)(L*W*H)	800(L)*800(W)*750(H)	1000(L)*1000(W)*750(H)	1200(L)*1200(W)*1100(H)
Size(mm)(L*W*H)	1650*1150*1500	2200*1350*1700	2600*1500*2000
Structure	Whole set	Whole set	Whole set
Weight	580kg	900kg	1430kg

## Appendix

Model	参数
Energy consumption	2.0~3.5kg.H <sub>2</sub> O/KW.h
Compressor Amount	1set
Cooling Method	Forced-air cooling FL
Refrigerant	R134a
Power Supply	220V/380V/440V/3H/50Hz(60Hz)
Drying Temperature	40~50°C (recycle air)/60~80°C (supply air)
Control System	Touch screen+PLCprogrammable control system
Applicable Range for Outlet Sludge	10%-40%



## VIP customers

### Most respected customers choose best in class technology

Maoyuan's innovative energy-efficient low temperature sludge drying technology has won hundreds of cooperative customers worldwide, covering municipal, printing and dyeing, papermaking, electroplating, chemical, leather, pharmaceutical etc.

