



FOR THE MORE CLEAN, MORE POWERFUL FACTORY

ENGLISH



CONTENTS

1

Company Information

2

Product : Coolant and Filtration system

3

Product : Rolling oil filter elements

4

Product : Degreasing system

HISTORY

- . 1974. 10 Established Jeong Il Machinery (Seoul, Korea)
 - Industrial Machine
 - Samsung Engineering – H.V.A.C System, Industrial Waste Transaction Facility
(Waste Incinerator, Control Damper, Rotary valve)
 - Gas Incinerator (Stocker type) – Samsung Electronics, POSCO, LG Petrochemistry
 - Patent acquisition – Rotary valve drive system of GAS incinerator
 - Process line for steel making company
 - Degreasing Line, Picking Line, Bright Annealing Line, Slitting Line, Scalping Line
 - Tension reel, Pay-off reel, Coil car, Paper winder, Wiper
 - Customer
 - Minchali Metal, Taiwan (Cu alloy) / Siam Poong San, Thailand (Cu alloy)
 - Poong San Co.,Ltd. Onsan & Bupyung Fab. Korea (Cu alloy, STS)
 - R.O Foil, Korea (STS) / KTI, Korea (Cu alloy) / Saint Gobain Korea (Cu alloy)
 - Samchuly Machinery (Furnace builder) / POSCO (Central research center)
- . 2004. 7 Established Applied Machine Creator Co., Ltd. (Seoul, Korea)
 - Rolling oil filter element, Coolant and Filtration system for steel making company
- . 2008. 3 Jeong Il Machinery were merged to AMC
- . 2009. 7 ISO 9001:2008, INNOBIZ certification acquired
- . 2010. 11 Moved to Banwol National Industry Complex

COMPANY INFO.

Address : Wonsi-dong 783-8, Danwon-gu, Ansan-si, Gyunggido, KOREA
Postal code : 425-839, Tel : +82-31-508-6536, Fax : +82-31-508-6535



COMPANY INFO.

Office building : 500M² / 8 Rooms / 1 Research center

Sales and Managements Dept. : 6 people / Engineering Dept. : 8 people

Server : 4way File server (4TB) / Design tool : Catia V5, Autocad 2009

Workstation : 8 set (Intel i7, Quadro graphic, 27" Dual monitor)



COMPANY INFO.

Ansan No.1 Factory : 2,400M² / Manufacturing Dept. : 10 people / Worker : 18 people
Ansan No.2 Factory : 1,100M² / Manufacturing Dept. : 4 people / Worker : 8 people



COMPANY INFO.

Facilities

Ansan No.1 Factory

1. Assembly and Welding shop – 1500M² (Welding bed : 200M²)
Crain : 20Ton , 5Ton
Press : Hydraulic 150Ton, 50Ton
Welding Machine : TIG 10set, Co2 6Set, Arc 4set, Spot 1set
Machine Saw : 2Set
Fork lifter : 5Ton
2. Machine shop – 500M²
Crain : Creep type 10Ton
Floor Boring Machine : Shibaura, BTD-11
Milling Machine : Doosan #5 1set, #3 1set
Lather : Ø580x2000 2set
Radial drilling Machine : Swing 1,500mm 1set / Swing 1,000mm 1set
3. Filter manufacturing shop 400M²
Piping Machine : 15A, 10mpm / Punching Machine : 50ton 1set
Assembling Machine 2set / Auto Welding Machine : T.I.G 4set
Buffing Machine 2set / Cutting Machine / Dust collector

Ansan No.2 Factory

- Assembly and Welding shop – 1000M² (Welding bed : 150M²)
Crain : 5Ton
Welding Machine : TIG 4set, Co2 3Set, Arc 2set
Fork lifter : 2.5Ton

COMPANY INFO.

Patent

실용신안등록증
CERTIFICATE OF UTILITY MODEL REGISTRATION

등록 제 20-0443750 호
(REGISTRATION NUMBER)

출원번호 2007-0014544 호
출원일 2007년 08월 31일
등록일 2007년 09월 04일

고안의 명칭 (TITLE OF THE DEVICE)
청정기의 음이온 효과용 여과용 필터 코어

실용신안권자 (OWNER OF THE UTILITY MODEL RIGHT)
주식회사 에이엠코리아에이터 (110111-3*****)

서울특별시 구로구 고척동 75-1 123전자타운 1동 6층 15

고안자 (DEVELOPER)
김필규 (681027-1*****)
경기도 시흥시 하중동 855 참이슬아파트 205동 303호

위의 고안은 「실용신안법」에 따라 실용신안등록원부에 등록되었음을 증명합니다.
(THIS IS TO CERTIFY THAT THE DEVICE IS REGISTERED ON THE REGISTER OF THE KOREAN INTELLECTUAL PROPERTY OFFICE.)

2010년 08월 23일

특허청
COMMISSIONER, THE KOREAN INTELLECTUAL PROPERTY OFFICE

전자등록료 납부일은 실용등록일 이후 4년차부터 매년 03월 04일까지이며 등록료로 권리금지를 확인받습니다.

디자인등록증
CERTIFICATE OF DESIGN REGISTRATION

등록 제 30-0443108 호
(REGISTRATION NUMBER)

출원번호 2006-0037858 호
출원일 2006년 05월 14일
등록일 2007년 05월 08일

디자인의 대상이 되는 물건 (ARTICLE THAT IS THE OBJECT OF THE DESIGN)
순환형각용 여과용 필터

디자인권자 (OWNER OF THE DESIGN RIGHT)
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김필규 (681027-1*****)

경기도 시흥시 하중동 855 참이슬아파트 205동 303호

위의 창작은 「디자인보호법」에 의하여 디자인등록원부에 등록되었음을 증명합니다.
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2010년 08월 23일

특허청
COMMISSIONER, THE KOREAN INTELLECTUAL PROPERTY OFFICE

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意匠登録証
CERTIFICATE OF DESIGN REGISTRATION

登録第 1307389 号
(REGISTRATION NUMBER)

意匠に係る物品 (ARTICLE TO WHICH THE DESIGN IS APPLIED)
オイルフィルター用エレメント

意匠権者 (OWNER OF THE DESIGN RIGHT)
大韓民国ソウル特別市九老區高尺洞75-1 電子タウン1棟707号
国聯 大韓民国
株式会社エーエムケーエーテ

意匠の創作をした者 (CREATOR OF THE DESIGN)
金 弼 奎

出願番号 (APPLICATION NUMBER) 意願 2007-000976
出願年月日 (FILING DATE) 平成 19 年 1 月 19 日 (January 19, 2007)

この意匠は、登録するものと確定し、意匠登録に登録されたことを証する。
(THIS IS TO CERTIFY THAT THE DESIGN IS REGISTERED ON THE REGISTER OF THE JAPAN PATENT OFFICE.)

平成 19 年 7 月 6 日 (July 6, 2007)
特許庁長官 (COMMISSIONER, JAPAN PATENT OFFICE)

中嶋 誠

PRODUCTS

Process line

Degreasing line, Pickling line
Slitting line, Shearing line
Buffing M/C, Scalping M/C

Fume exhaust system

Newly designed fume exhaust
System will keep clean
environment of your factory



Rolling oil filter element

Various type of filter element
for rolling oil has excellent
filtering accuracy, durability
and long life time

Rolling oil coolant & filtration system

Complete design and fabrication of Coolant
and filtration system for the cold rolling Mill
such as Sendzimir 20Hi for Stainless, Low
carbon steel, Bronze, Copper, Copper alloy

REFERENCE OF COOLANT AND FILTRATION SYSTEM

Scope of supply : Basic & detail engineering, Fabrication and Test run

- . 2004. 7. Jie Jin Material Science No.1 (ZR23-26/STS/3,000lpm/Taiwan)
- . 2005. 3. United Stainless Steel Co. (ZR22B-52/STS/13,200lpm/Bahrain)
- . 2006. 4. YongXin Precision (ZR23-26/STS/3,000lpm/China)
- . 2007. 3. Yuen Chang Stainless (ZR23-31/STS/3,750lpm/China)
- . 2007. 11. POSCO VST (ZR22-52/STS/10,400lpm/Vietnam)
- . 2007. 12. Dai Yang Stainless (ZR22-52/STS/9,600lpm/Turkey)
- . 2008. 1. Jie Jin Material Science No.2 (ZR23-26/STS/3,500lpm/Taiwan)
- . 2008. 1. Sumec International Tech (ZR23-26/STS/3,000lpm/China)
- . 2008. 2. Hua Sheng Co.Ltd (ZR33-18/STS/1,860lpm/China)
- . 2008. 4. Tian Jin Stainless Steel (ZR23-26/STS/3,000lpm/China)
- . 2008. 5. Samsung FingHu Inc (ZR23-26/STS/3,000lpm/China)
- . 2008. 6. Samsung Otelinox S.A Inc (ZR22-52/STS/9,600lpm/Romania)
- . 2008. 6. Jinchuan Group Co. (ZR33-18/Special Alloy/1,860lpm/China)
- . 2008. 8. JiangSu Chenfei Co.Ltd, No.1 (ZR23-26/STS/3,000lpm/China)
- . 2009. 1. JiangXi Copper Corp. (ZR33-18/Cu Alloy/1,000lpm/China)
- . 2009. 10. JiangSu Chenfei Co.Ltd, No.2 (ZR23-26/STS/3,000lpm/China)
- . 2010. 4. POSCO VST (ZR23-25/STS/3,450lpm/Vietnam)
- . 2010. 10. POSCO AST (KT MILL/STS/1,000lpm/Korea)
- . 2010. 10. Z.P.S.S Rolling oil filter elements for #5, #6 Mill (45,430ea)
- . 2011. 6. Fuxing Stainless Steel Co.,Ltd. (ZR22B-52/STS/9,600lpm/China)
- . 2011. 7. GuangYuan Copper (ZR23-26/STS/2,400lpm/China)
- . 2011. 10. POSCO AST (ZR22-52/STS/9,600lpm/Korea)
- . 2012. 1. South West Stainless Steel (ZR22-52/STS/13,200lpm/China)
- . 2012. 7. DongKuk Steel Corporation (6 Hi/High Carbon/8400lpm/Korea)

INTRODUCTION OF COOLANT AND FILTRATION SYSTEM

FEATURES OF ROLLING OIL FILTER, COOLANT & FILTRATION SYSTEM

1. Can maintain system with low running cost
The running cost is low because waste disposal and oil loss is minimal.
This system can be run with the least manpower.
2. Replacement of the filter element is unnecessary for extended period of time.
The continuous backwashing process makes the filter can be used for a extended
period of time without losing its oil-passing property.
3. Excellent in maintaining the cleanliness of rolling oil.
The excellent pre-coating process keeps the oil clean always.
4. Excellent filtering accuracy and constant-rate continuous filtering
Filtering accuracy is stably maintained for a long period of time.
Filtering flow rate is constantly maintained for a long period of time.
5. Easy operation, and daily control – Operation is automatic completely.

INTRODUCTION OF COOLANT AND FILTRATION SYSTEM

FEATURES OF ROLLING OIL FILTER, COOLANT & FILTRATION SYSTEM

6. Draining system

The contaminant created by cold rolling and annealing process would be supplied to filter tank with rolling oil, and high concentration of contaminant created by backwashing process should be separated from oil and drained to outside. This is key point of Supamic filter system.

On the existing Supamic filter system, high contaminant with oil after backwashing process of main filter & recovery tank is kept in Drain tank, and after passing regular hour, factory work will drain sludge out by using sludge pump by themselves. Since it is hard to settle sludge inside tank by circulation of sludge, settling efficiency is not enough to separate sludge from oil, and flat floor is not help for removing sludge.

AMC draining system has three (3) settling tank which consist of cone type bottom section.

After backwashing of main filter tank, drained oil is transferred to #1 settling tank, existing oil in # 1 & #2 settling tank would be overflowed at the same time.

Oil in #3 settling tank would be filtered by recovery tank and then transferred to dirty tank, and oil would be transferred to #1 settling tank on backwashing mode of recovery tank.

Oil in #3 settling tank is the most clean condition among #1 ~ 3 settling tank because of three times settling process, so it will be help for be longer filter life in recovery tank and filtering efficiency.

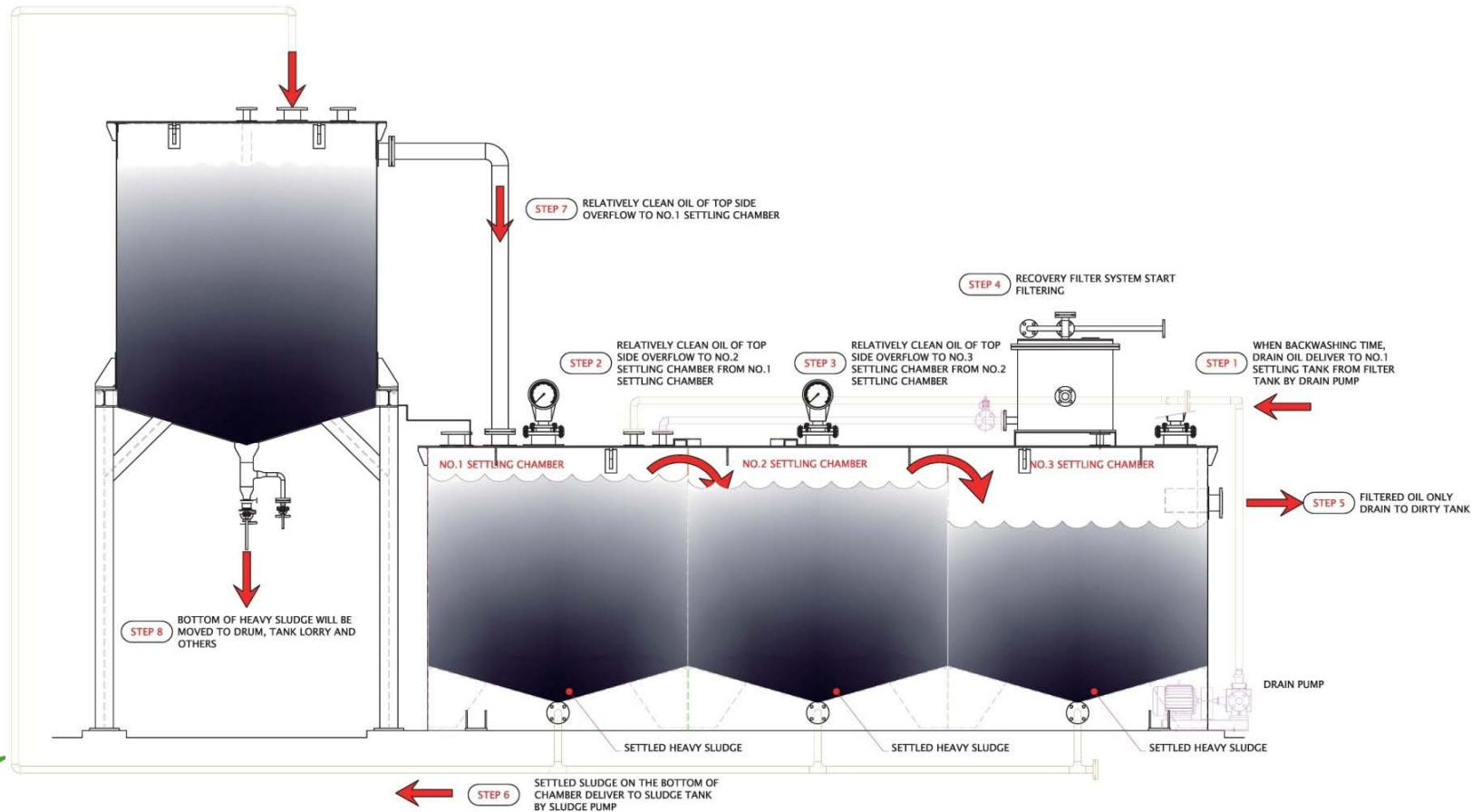
The cone type of bottom in settling tank is connected with automatic V/V and pump so that it can be easy for settled sludge quickly to transfer to sludge tank in order to re-settle.

Oil kept in sludge tank during long time would be separated to high concentration sludge and it can be drained out by valve where is located in bottom of sludge tank and to drum or tank lorry.

All of this process can be under automatic or manual control by control panel, so the control way is option based on site condition. This system has already been adopted a few years ago, and POSCO new factory(ZPSS, VST, TST etc) already chose this draining system and AMC is manufacturing and planning to supply 1 set from POSCO VST.

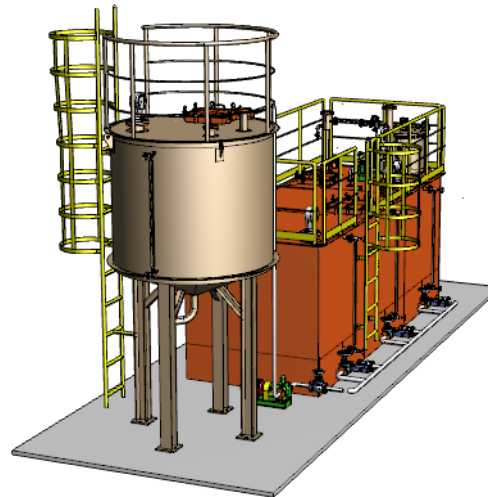
INTRODUCTION OF COOLANT AND FILTRATION SYSTEM

BASIC FEATURES OF SETTLING SYSTEM



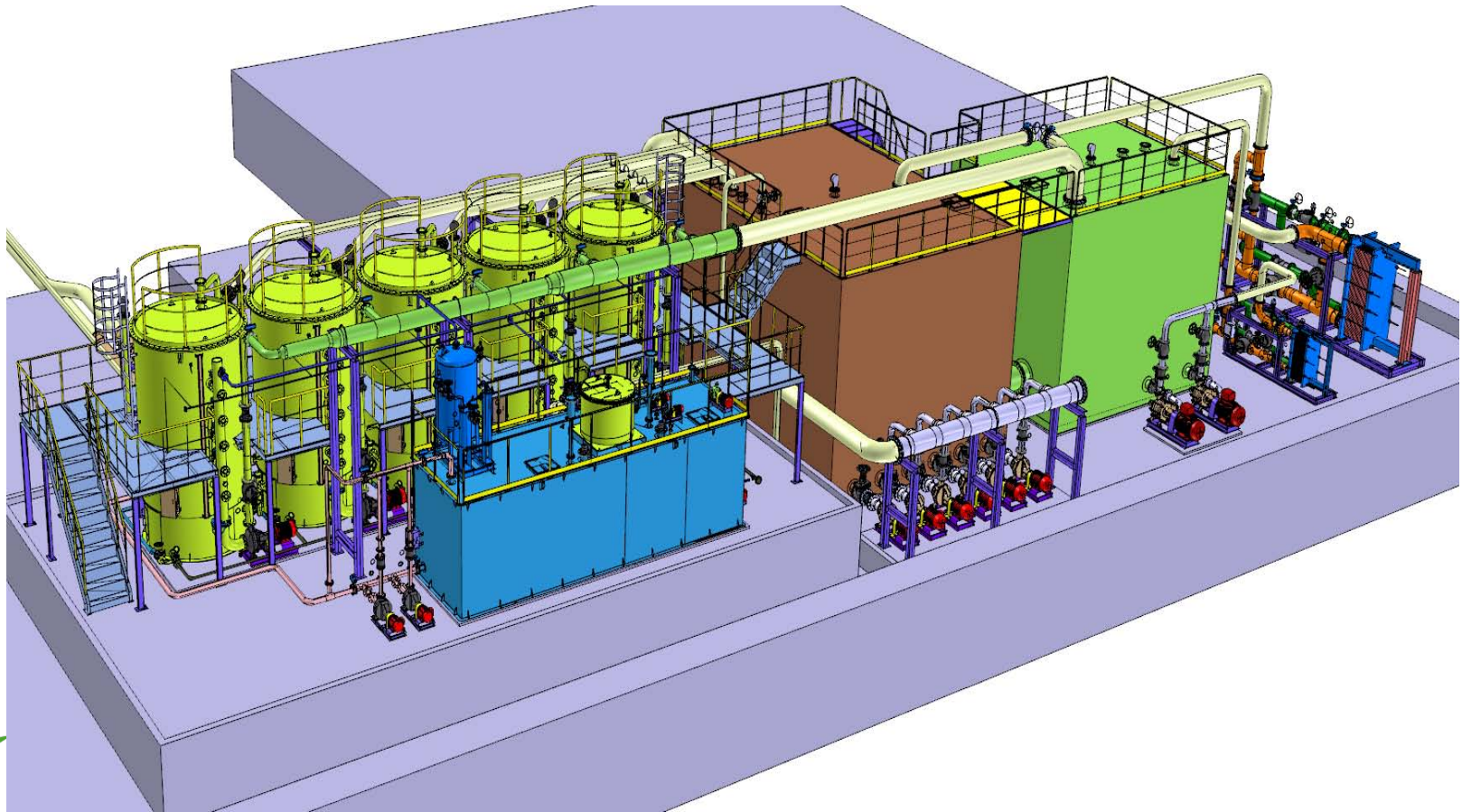
INTRODUCTION OF COOLANT AND FILTRATION SYSTEM

BASIC FEATURES OF SETTLING SYSTEM



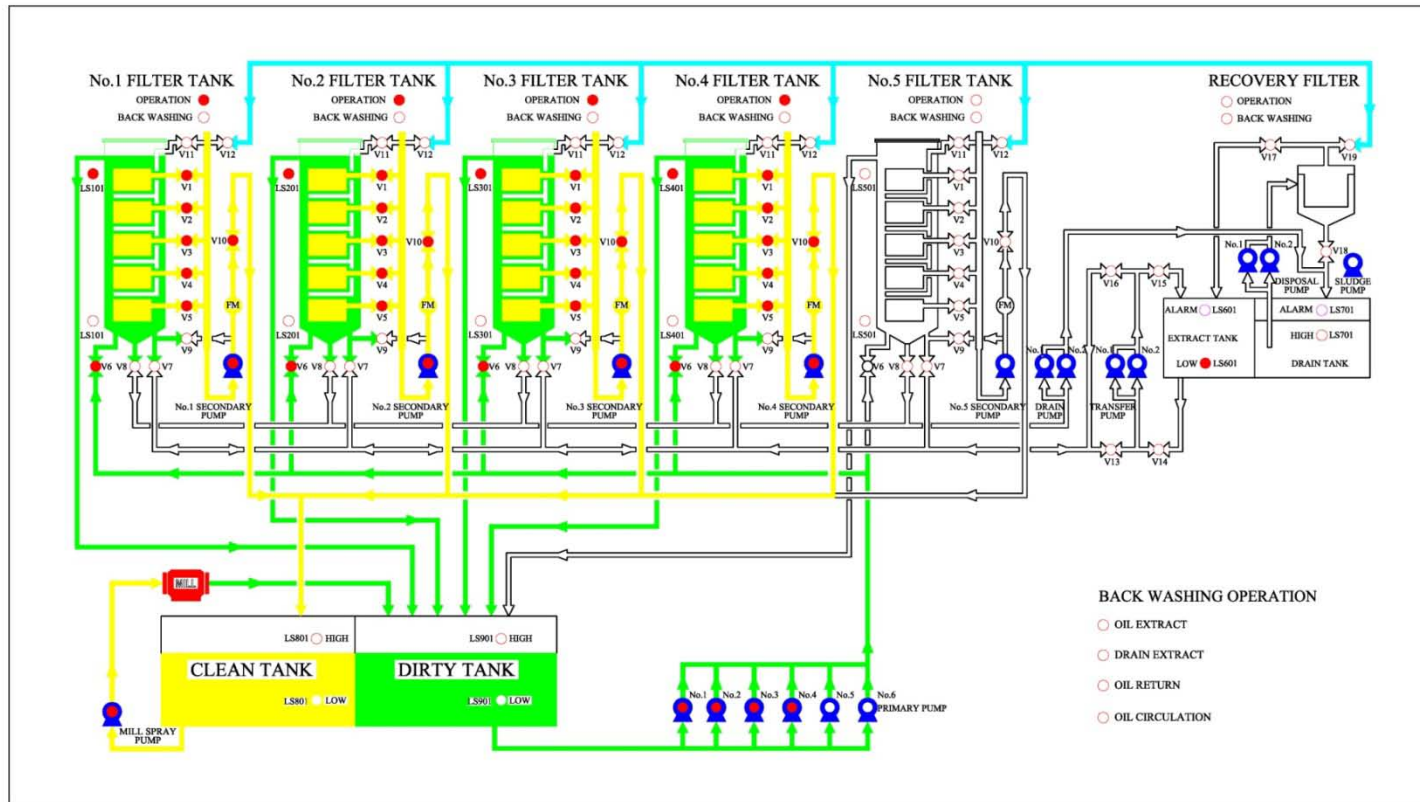
INTRODUCTION OF COOLANT AND FILTRATION SYSTEM

GENERAL ARRANGEMENT FOR SENDZIMIR ZR21 BB-63 MILL , FILTERING CAPA 20,800LPM



INTRODUCTION OF COOLANT AND FILTRATION SYSTEM

SCHEMATIC



INTRODUCTION OF COOLANT AND FILTRATION SYSTEM

PROJECT PHOTOS



End user : Jiejn Material science, Taiwan
F.A.T 2005. 12 / ZR23-26 / 3,000lpm



End user : United Stainless Steel Co, Bahrain
F.A.T 2007. 1 / ZR22-52 / 13,200lpm

INTRODUCTION OF COOLANT AND FILTRATION SYSTEM

PROJECT PHOTOS



End user : YongXin precision, China
F.A.T 2007. 4 / ZR23-26 / 3,000lpm



End user : YuenChang Stainless, China
F.A.T 2008. 11 / ZR23-31 / 3,750lpm

INTRODUCTION OF COOLANT AND FILTRATION SYSTEM

PROJECT PHOTOS



End user : Sumec International, China
F.A.T 2009. 2 / ZR23-26 / 3,000lpm



End user : POSCO VST, Vietnam
F.A.T 2009. 5 / ZR22-52 / 10,400lpm

INTRODUCTION OF COOLANT AND FILTRATION SYSTEM

PROJECT PHOTOS



End user : Huasheng Precision Alloy, China
F.A.T 2009. 9 / ZR33-18 / 1,860lpm



End user : Samsung PingHu Stainless, China
F.A.T 2009. 9 / ZR23-26 / 3,000lpm

INTRODUCTION OF COOLANT AND FILTRATION SYSTEM

PROJECT PHOTOS



End user : Jiejn Material science, Taiwan
F.A.T 2009. 11 / ZR23-26 / 3,750lpm



End user : Samsung Oteinox Inc, Romania
F.A.T 2009. 12 / ZR22-52 / 9,600lpm

INTRODUCTION OF COOLANT AND FILTRATION SYSTEM

PROJECT PHOTOS



End user : SK-DY Metal, Turkey
F.A.T 2010. 5 / ZR22-52 / 9,600lpm



End user : POSCO AST, Korea
F.A.T 2011. 1 / KTN 30 / 1,000lpm

INTRODUCTION OF ROLLING OIL FILTER

Over view

ARF-420 series has been greatly improved of its filtering capacity when comparing with existing Supamic Glass Wool/Stainless Core Filter, and maintain the oil cleanliness level (NAS 1638) to 5 to 8 grade for a long period of time.

The core, which is made of Nylon-6, has heat and oil resistant characteristics and strong enough not to be easily broken or carried off by external impact or vibration.

The weight of each filter unit is also much lighter than the previous Glass wool filter, which is only 60% of it.

ARF-420 series filter can be stocked in a long period of time without showing any changes in quality.

INTRODUCTION OF ROLLING OIL FILTER LINE UP

	ARF-420Q	ARF-420S	ARF-420P	ARF-420G
PHOTO				
Material of core	Pipe and lock nut : Nylon-6 / 15A / PF ½" thread Hardness Rockwell : 110(R scale) Heat distortion temp : 180℃		Pipe : 15A / PF ½" thread / STS304 Nut : Gr10.9T / Nickel plating Washer/Base plate : STS304	
Material of Element	Polyester non-woven			Glass wool
Gasket	No use		Asbestos or equivalent	
Recommended Flow rate and working temp	0.75LPM(20cSt)~1LPM(10cSt)@40℃ Under 60℃			0.65LPM(20cSt)~0.85LPM (10cSt)@40℃/Under 60℃
Filtration Area	0.674m³/ea			0.0682m³/ea
Dimension	O.D55×445L	O.D55×430L	O.D55×430L	
Weight	400g±5g/ea	350g±5g/ea	500g±5g/ea	580g±5g/ea
Cleanliness	ASTM D4898 - Solid more than 0.8 micron is less than 10mg/Liter in oil after filtering. NAS 1638 - Class 7~9 / ISO 4406:1999 - 18~20/16~18/13~15			

INTRODUCTION OF ROLLING OIL FILTER

CLEANLINESS CONTROL

Cleanliness level of AMC filter NAS 1638 – Class 7~9 ISO 4406:1999 – 18~20/16~18/13~15
 ASTM 4898 – Solid more than 0.8micron is less than 10mg/L after filtering

Sample name	Test date	Test Methode	Class	Certificate No.
WXY001 Clean tank	2007. 7. 25	ISO 4406:1999	17/13/8	2007-1075-8
WXY001 Dirty tank	2007. 7. 25	ISO 4406:1999	22/21/16	2007-1075-9
YCS001 Filter tank	2008. 11. 27	NAS 1638	5	2008-1178
YCS001 Dirty tank	2008. 11. 27	NAS 1638	12	2008-1177
SYZ001 Filter tank	2009. 11. 18	NAS 1638	6	2009-778-3
SYZ001 Dirty tank	2009. 11. 18	NAS 1638	8	2009-778-2

* Test by "Korea Machinery-Meter and Petrochemical Testing & research Institute"

ISO Code 4 µ(c)/6 µ(c)/14 µ(c)	Mil Std. 1638 (1967)	Mil Std. 1246A (1967)	ACFTD Gravimetric Level-mg/L	SAE AS4059 Standard
21/19/16	10			
20/18/15	9			
19/17/14	8	300		
18/16/13	7		1	
17/15/12	6			
16/14/12		200		
16/14/11	5			12
15/13/10	4		0.1	11
14/12/9	3			10
13/11/8	2			9
12/10/8		100		8
12/10/7	1			7
12/10/6			0.01	6
11/9/6				5

ISO- Class	Partikelzahl/100 ml Number of particles/100 ml Nombre de particules/100 ml mehr als more than plus que	bis einschl. up to and incl. inclus	Schmutzgehalt (ACFTD) Amount of contam. (ACFTD) Teneur en polluant (ACFTD) [mg/l]
0	0,5	1	–
1	1	2	–
2	2	4	–
3	4	8	–
4	8	16	–
5	16	32	–
6	32	64	0,001
7	64	130	–
8	130	250	–
9	250	500	–
10	500	1.000	0,01
11	1.000	2.000	–
12	2.000	4.000	–
13	4.000	8.000	0,1
14	8.000	16.000	–
15	16.000	32.000	0,2
16	32.000	64.000	0,5
17	64.000	130.000	1
18	130.000	250.000	3
19	250.000	500.000	5
20	500.000	1.000.000	7/10
21	1.000.000	2.000.000	20
22	2.000.000	4.000.000	40
23	4.000.000	8.000.000	80
24	8.000.000	16.000.000	–
25	16.000.000	32.000.000	–
26	32.000.000	64.000.000	–
27	64.000.000	130.000.000	–
28	130.000.000	250.000.000	–

INTRODUCTION OF ROLLING OIL FILTER

MOVIE CLIP OF BACKWASHING AND FILTER TEST

Backwashing

AMC Test room

Date 2008.02.25
Test filter.....ARF420Q (Quick Joint)
Elements.....350ea/Plate
Compressed Air ...3kg/cm², Vol 1M³



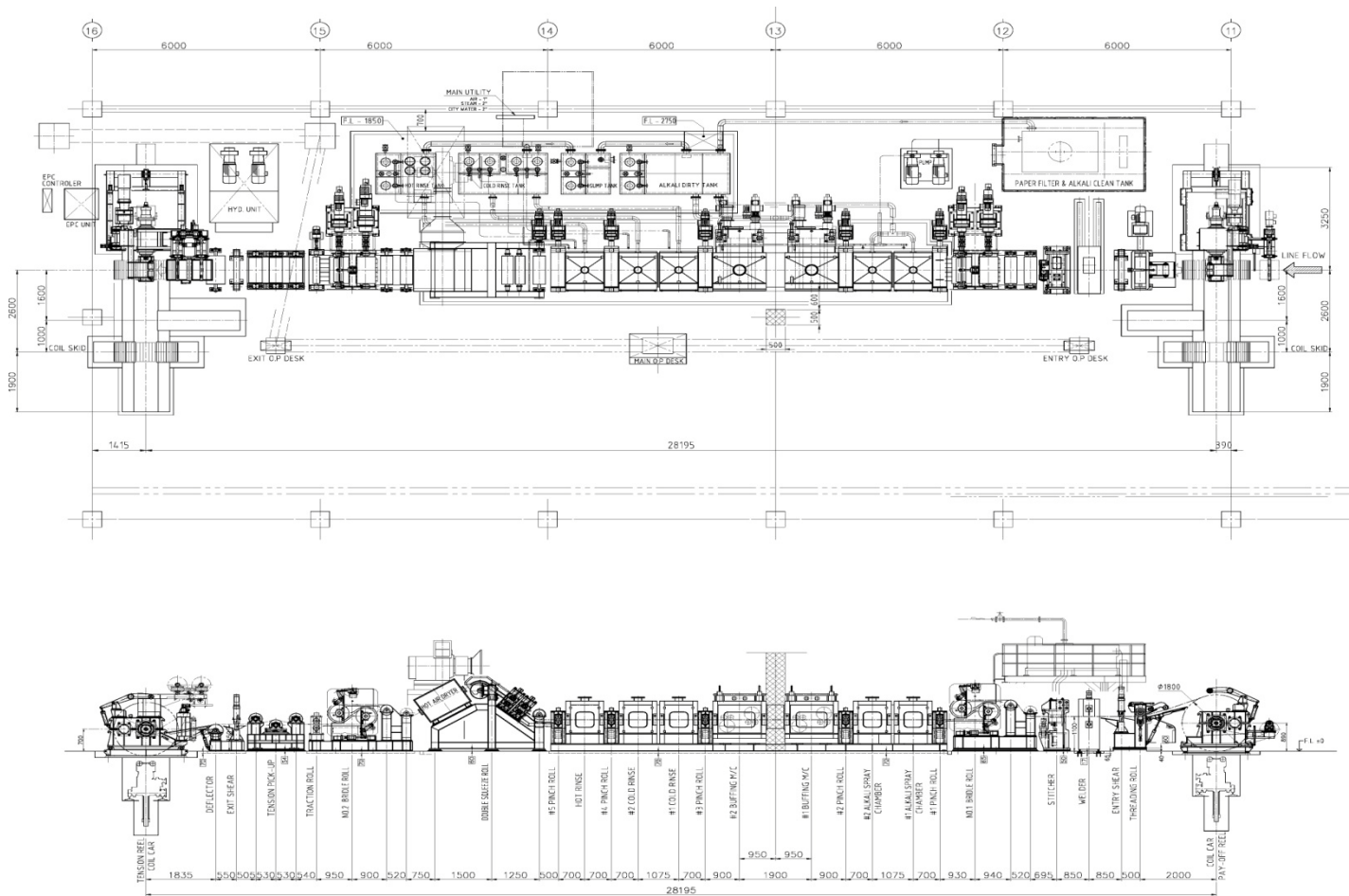
INTRODUCTION OF DEGREASING SYSTEM

REFERENCE OF DEGREASING SYSTEM

- . 1994. 6 Minchali, Taiwan / Acid Picking line/Degreasing line
Material : Cu, Cu Alloy / 650mmW / 0.1~1.2mmt / 60mpm
- . 1995. 2 XingYe Copper, China / Acid pickling line
Material : Cu, Cu Alloy / 650mmW / 0.1~1.2mmt / 40mpm
- . 1998. 3 PMX Co.,Ltd. USA / Acid pickling line
Material : Cu, Cu Alloy / 650mmW / 0.2~1.2mmt / 30mpm
- . 2000. 11 Korea Trading Corp., Korea / Acid pickling line
Material : Cu, Cu Alloy / 450mmW / 0.2~1.2mmt / 30mpm
- . 2005. 4 PoongSan, Korea / Degreasing line
Material : STS300, 400 / 600mmW / 0.05~1.0mmt / 150mpm
- . 2009. 6 Siam Poongsan, Thailand / Acid pickling, Degreasing line
Material : Cu, Cu Alloy / 450mmW / 0.2~1.2mmt / 60mpm
- . 2011. 7 XingYe Copper, China / Brush box
Material : Cu, Cu alloy / 650mm W / 0.1~1.5mmt / 100mpm
- . 2011. 10 KD Science, Myanmar / Acid pickling
Material : Cu, Cu alloy / 650mm W / 1.0~3.2mmt / 30mpm
- . 2011. 10 POSCO E&C, Turkey / Degreasing line
Material : STS300, 400 / 5 Foot / 0.2~2.0mmt / 100mpm
- . 2012. 6 POSCO AST, Korea / Degreasing line
Material : STS300, 400 / 4 Foot / 0.2~2.0mmt / 100mpm

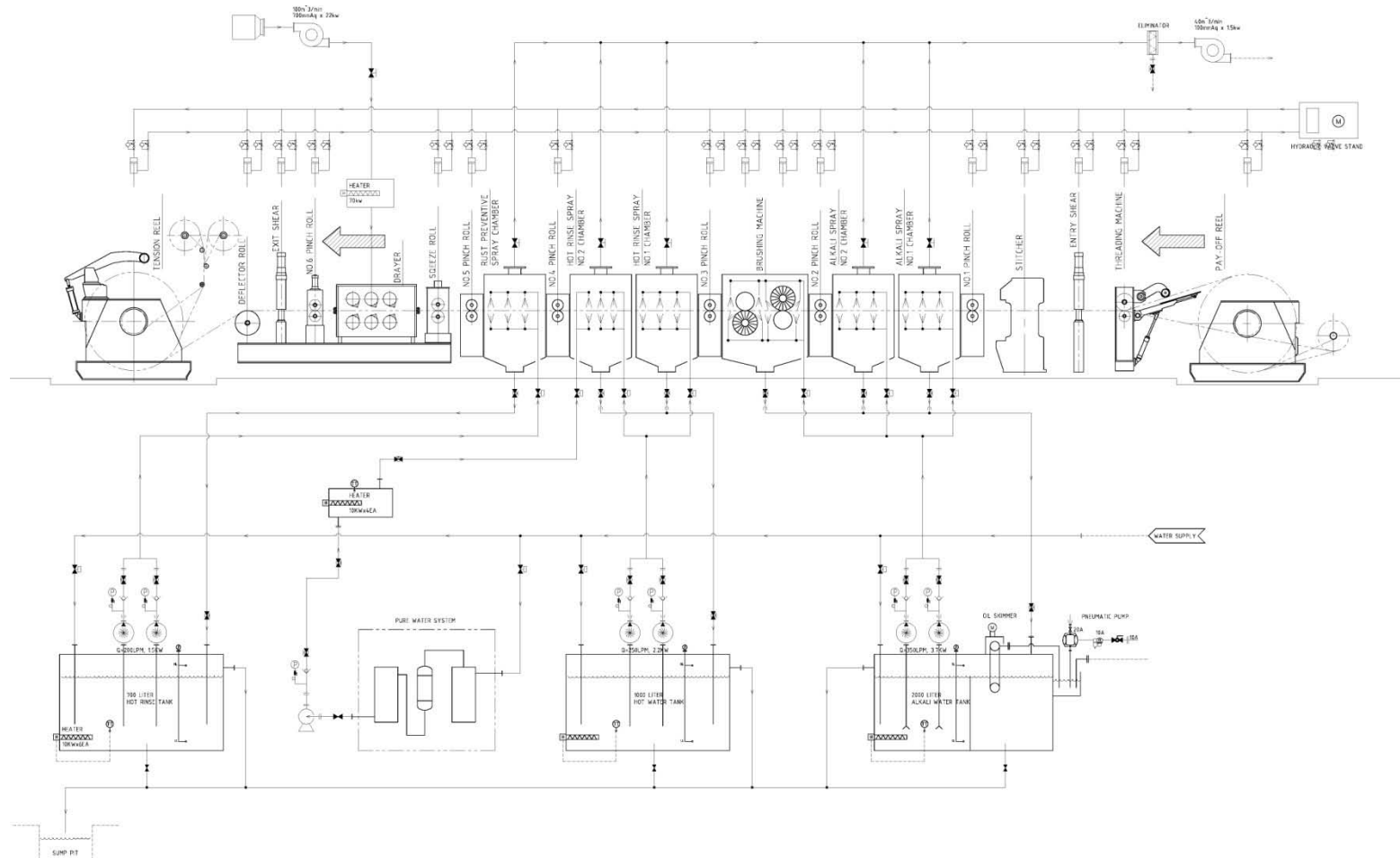
INTRODUCTION OF DEGREASING SYSTEM

General layout



INTRODUCTION OF DEGREASING SYSTEM

Schematic



INTRODUCTION OF DEGREASING SYSTEM

Brush box



대단히 감사합니다.

THANK YOU VERY MUCH.

深く感謝しております。

感恩戴德