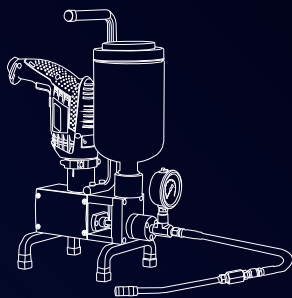


# SAMWON TUKSU



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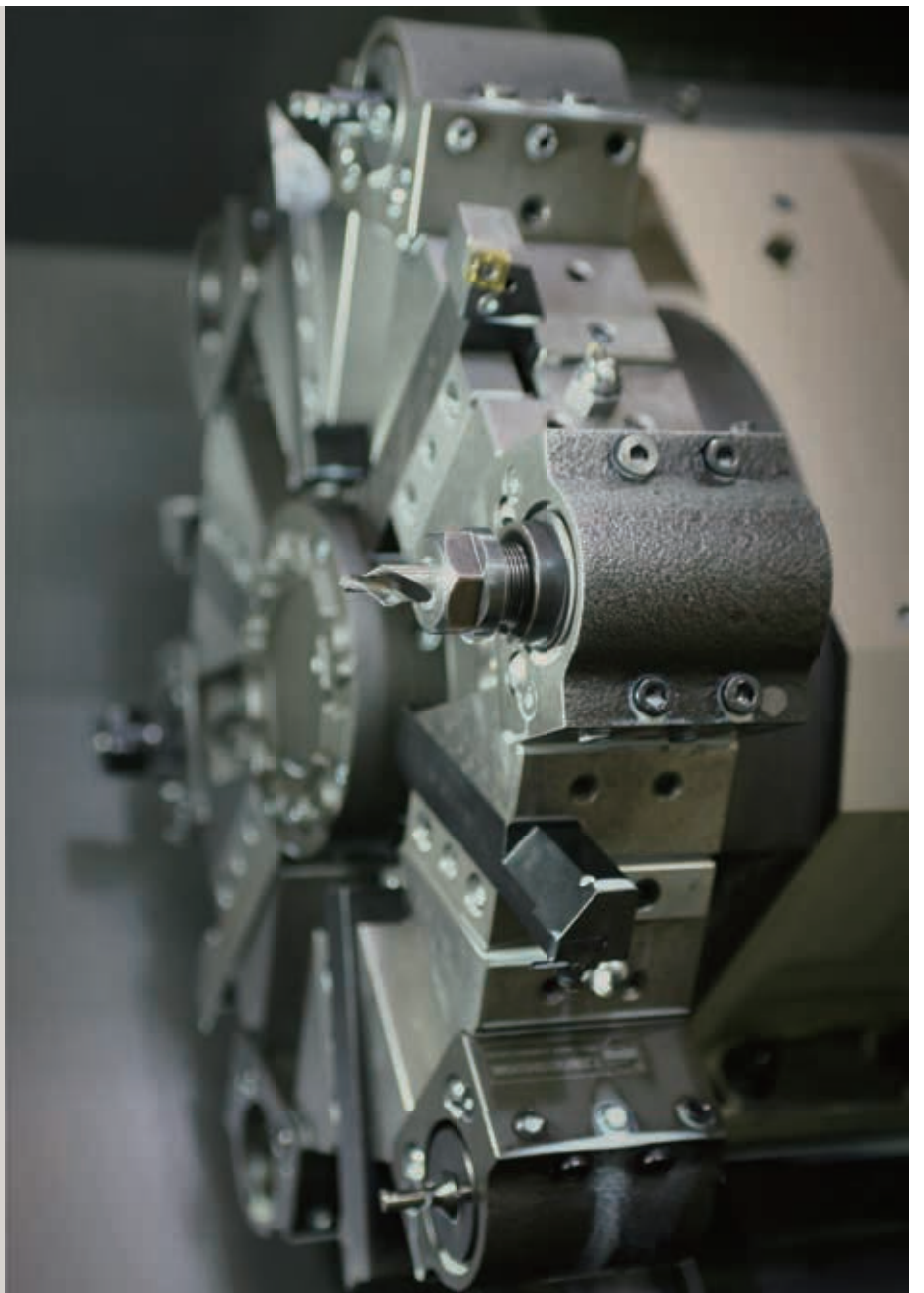


미국 (L.A) / 일본 (도쿄) / 인도 (방갈루) / 인도네시아 (리바로타) / 싱가포르  
호주 (Meadowbrook) / 러시아 (모스크바) / 캐나다 (퀘벡) / 중동 (두바이) / 말레이시아(킹라)

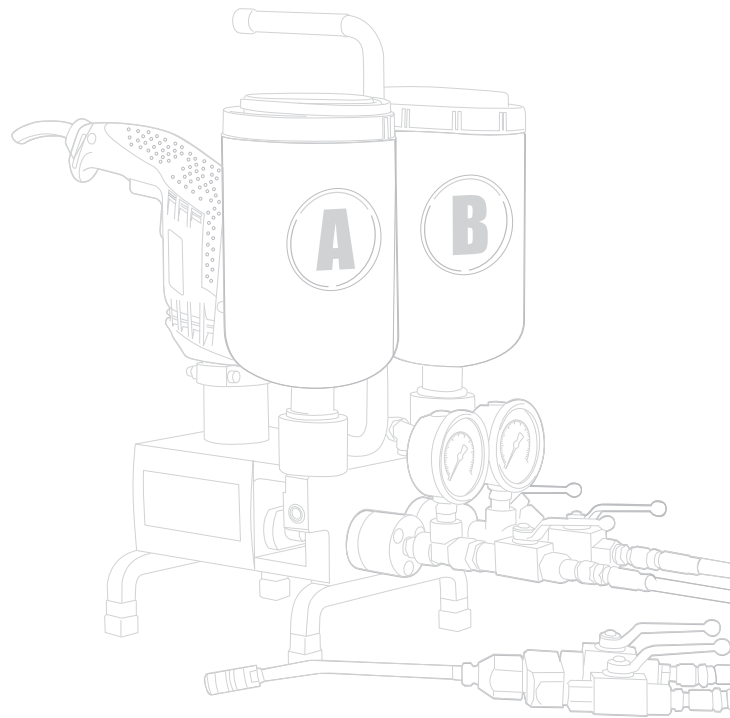
# World Technology Global Leader

We would like to truly appreciate your constant interest and support.  
I am pleased to have an opportunity to introduce our company's general business work to you.

항상 저희 삼원특수주식회사를 아껴주시는 고객 여러분께 진심으로 감사를 드리며  
저희 회사의 사업내용을 소개해 드릴 수 있는 기회를 갖게 되어 매우 기쁘게 생각합니다.



## Certifications



## History

- |       |    |   |       |    |   |
|-------|----|---|-------|----|---|
| 2016. | 02 | CE인증 / Get a quotation from CE  | 2007. | 11 | 산업자원부장관 표창 (수출탑선정)<br>Awards from Ministry of Commerce, Industry and Energy   |
| 2015. | 12 | 대전광역시장 수출 표창<br>Received the Daejeon City Mayor's Award for Expert                    | 2007. | 06 | 기술개발 사업 참여 (중소기업청)<br>Participated in technological innovation development work<br>(The Small and Medium Business Administration)               |
| 2015. | 10 | ARC 펌프 특허 획득 / ARC pump patent  | 2007. | 05 | KOTRA TAIPEI 지사화사업 / The project for KOTRA Taipei branch office   |
| 2013. | 12 | 삼원특수(주) 공장 증축 & CrackQ 상품등록<br>Expansion of Samwon Tuksu Factory & Registered Crack Q | 2007. | 05 | 공장 신축 완료 / New Factory construction was finished  |
| 2013. | 06 | [사] 사회적기업결연<br>Sponsorship for one of social enterprise                               | 2007. | 04 | EXPORT CLUB 참여 (대전 중소기업청)<br>Joined EXPORT CLUB membership in Daejeon city, Chungnam province<br>(The Small and Medium Business Administration) |
| 2011. | 12 | 수출유공자 표창수상(대전시장)<br>Awarded a man of export merit (Mayor of Daejeon City)             | 2007. | 02 | 연구개발전담부 신설(한국산업 기술 진흥협회 인증)<br>Organize the part which is responsible for research and<br>development (Quotation by KOITA)                      |
| 2011. | 04 | CE 인증/ Get a quotation from CE  | 2006. | 10 | 공장신축부지 매입<br>Buy new factory landing place.   |
| 2010. | 04 | "New Exporters 300" 기업선정 / Selected as "New Exporters 300"                            |       |    |   |
| 2009. | 12 | 충청 TODAY 8면 전면기사<br>Chong-chung today news paper written by story 8 page.             |       |    |   |
| 2009. | 02 | 벤처등록 & 인젝션펌프 특허등록<br>Registration of Venture business & Injection pump patent         |       |    |   |



Since 1990, our company has been concentrating on only concrete building leakage, repair and maintenance.

Through operating many kinds of leakage such as building, engineering works, and road, Construction leakage under the 40m of sea, We have been operating construction works based on belief of the best specialist in all kinds of leakage, repair and maintenance.

Based on that belief, we have visited many factories for study all over the world. In the meantime, based on accumulated construction experience and delicate and excellent material, we would strive to meet & satisfy customer's need and support.

Through accumulated know-how and experience, we would go to international market We deeply recognize that our achievement is from all your support and interest Therefore, We would strive to become a company giving customer trust and confidence constantly.

저희 삼원특수 주식회사는 1990년부터 콘크리트 구조물의 누수 및 보수보강에만 전념하여 왔습니다. 바다 40m속에 있는 구조물의 누수부터 건축, 토목, 기계 설비 교량의 각 분야의 균열과 누수 및 각종 하자 보수에 최고가 되어야 한다는 신념으로 시공을 진행 하였습니다. 그 신념을 바탕으로 세계 여러 나라를 다니면서 구조물의 보수보강의 견학을 하였습니다.

그동안 수많은 시공경험과 엄선된 재료로 고객 여러분의 성원에 보답을 드리겠으며, 저희 회사의 축적된 노하우와 경험을 토대로 해외진출의 길을 열겠습니다. 이 모든 것이 고객 여러분의 뜨거운 격려와 성원으로 이루어진 것임을 깊이 인식하고 믿음을 주는 유일 업체가 되도록 최선을 다해 고객여러분께 보답하겠습니다.



- |       |    |  |       |    |  |
|-------|----|--|-------|----|--|
| 2006. | 06 | 수출유망 중소기업 지정(중소기업청)<br>Selected as a promising mid-size company in export side by the small and medium business administration | 2003. | 03 | 인도네시아 지사 설립<br>Open a branch office in Indonesia   |
| 2005. | 11 | ISO인증 취득<br>Get a quotation from ISO   | 1999. | 04 | 미국 Special-T 기술 도입<br>Introduce the Special-T technology from U.S.   |
| 2005. | 11 | 제1공장 설립 및 생산 개시<br>Establishment of the first factory and start producing  | 1999. | 03 | 무역업 등록<br>Register as a trade society business   |
| 2005. | 10 | 대전광역시 WTA 우수상 수상(Russia NOVOSIBIRSK)<br>Get a prize of WTA from Daejeon city Gov. (Russia NOVOSIBIRSK)                         | 1996. | 11 | Con'c 구조물 보수보강 연구회 대전충남지부 지정<br>Selected as a Daejeon-Chungnam branch of Con'c structure repair & reinforcement research group |
| 2005. | 02 | 시설물 유지관리업 취득<br>Get permission for preservation and management of the facilities.  | 1996. | 07 | 삼원특수(주) 법인 전환<br>Change the company as a corporation aggregate   |
| 2004. | 11 | 대전충남무역상사협의회 운영위원사 지정(KITA)<br>Selected as a steering company by KITA Daejeon-Chungnam branch office                            | 1996. | 04 | 독일 쿠바스그룹 보수보강 기술 도입<br>Introduce repair and reinforcement technology from Kuvasz Group (Germany)                               |

# SINGLE-LINE MANUAL PUMP SWHM-100

## DELIVERY RANGE

Pressure gauge unit with 0-250bar, 4m material hose(NO.04) Ø6.4mm and high pressure ball valve with mouth piece, 2ℓ material container transparent



## ADVANTAGES

Pump body of Anodizing Aluminium, stainless steel and electric powder coating support

## TECHNICAL DATE

|                                      |                   |
|--------------------------------------|-------------------|
| Working pressure                     | 0 - 200 bar       |
| Delivery(stroke)                     | 5 cm <sup>3</sup> |
| Weight                               | 12.5 kg           |
| Width/Length/Height-Working position | 45/89/72-110 cm   |

## DESCRIPTION

- The robust compact manual reciprocating pump is ideal for short-time service
- Easy operation and cleaning
- The protection gauge unit is an option

## MATERIAL TO BE USED

- EP resin
- PUR resin
- SPUR foam



# SINGLE-LINE MANUAL PUMP SWHM-110

## DELIVERY RANGE

Pressure gauge unit with 0-250bar, 4m material hose(NO.04) Ø6.4mm and high pressure ball valve with mouth piece, 6ℓ material stainless steel container



## ADVANTAGES

Pump body of anodizing aluminium, stainless steel and electric powder coating support

## TECHNICAL DATE

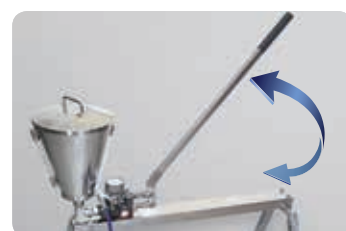
|                                      |                   |
|--------------------------------------|-------------------|
| Working pressure                     | 0 - 200 bar       |
| Delivery(stroke)                     | 5 cm <sup>3</sup> |
| Weight                               | 14.2 kg           |
| Width/Length/Height-Working position | 45/98/80-110 cm   |

## DESCRIPTION

- The robust compact manual reciprocating pump is ideal for short-time service
- Easy operation and cleaning
- The protection gauge unit is an option

## MATERIAL TO BE USED

- EP resin
- PUR resin
- SPUR foam



# SINGLE-LINE INJECTION PUMP SWM-1000

## DELIVERY RANGE

Drive, pressure gauge unit with 0-700bar(0~10,000psi), 4m high pressure material Nitta Moore hose(NO.02) Ø3.6mm, 2ℓ material container transparent



## ADVANTAGES

- The pump is small and light
- Easy operation and cleaning

## TECHNICAL DATE

|                      |                     |
|----------------------|---------------------|
| Working pressure     | 0 - 350 bar         |
| Delivery(stroke)     | 0.35ℓ/min           |
| Weight               | 8.5 kg              |
| Width/Length/Height  | 20/37/47 cm         |
| Supply / Moter Power | AC 220V 60Hz / 500W |

## DESCRIPTION

- Cylinder standard : Ø8mm (0.33~0.35ℓ/min)
- Delivery rate of growth : Ø10mm (0.55~0.58ℓ/min)
- The protection gauge unit is an option

## MATERIAL TO BE USED

- Epoxy resin
- PUR resin
- SPUR foam



# SINGLE-LINE AQUEOUS SOLUTION INJECTION PUMP **SWM-1200**

## DELIVERY RANGE

Pressure gauge 0-700bar(0~10,000psi), 4m material Nitta Moore hose(NO.03) Ø4.8mm,  
High pressure ball valve with mouth piece, 2ℓ material container



## ADVANTAGES

- The pump is small and light
- Easy operation and cleaning
- Easy adjustment of pressure and flow rate

## TECHNICAL DATE

|                      |                        |
|----------------------|------------------------|
| Working pressure     | 0 - 350 bar            |
| Delivery(stroke)     | 0.55ℓ/min              |
| Weight               | 10.0 kg                |
| Width/Length/Height  | 20/37/50 cm            |
| Supply / Moter Power | AC 220V 60Hz / 650W    |
| Speed controller     | 0 - 10 change of speed |

## DESCRIPTION

- You can put the controller on your belt and adjust pressure and flow rate
- Speed & pressure control is depending on field conditions
- The protection gauge unit is an option

## MATERIAL TO BE USED

- Aqueous solution





# SINGLE-LINE INJECTION PUMP SWM-1300

## DELIVERY RANGE

Drive, pressure controll with return and pressure gauge unit with manometer 0-600bar.  
4m material hose(NO.04) Ø6.4mm and high pressure ball valve with mouth piece, 2ℓ material container.



## ADVANTAGES

- The pump is small and light
- Easy operation and cleaning
- Easy adjustment of pressure and flow rate

## TECHNICAL DATE

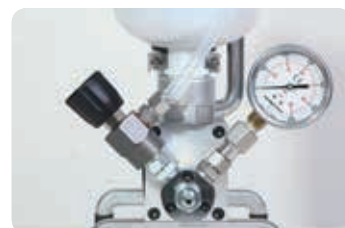
|                                      |                     |
|--------------------------------------|---------------------|
| Working pressure-infinitely variable | 10 - 350 bar        |
| Delivery(stroke)                     | 0.55ℓ/min           |
| Weight                               | 8.9 kg              |
| Width/Length/Height                  | 20/37/47 cm         |
| Supply / Moter Power                 | AC 220V 60Hz / 650W |

## DESCRIPTION

- The small, compact, powerful reciprocating pump
- Speed & pressure control is depending on field conditions

## MATERIAL TO BE USED

- Epoxy & PUR resin
- SPUR foam



# SINGLE-LINE INJECTION PUMP SWM-1500

## DELIVERY RANGE

Drive, pressure controll with return and Oil protection pressure gauge unit with manometer 0-400bar.  
4m material hose Ø6.4mm and high pressure ball valve with mouth piece,  
6l material stainless steel container.



## ADVANTAGES

- The pump is small and light
- Easy operation and cleaning
- Easy adjustment of pressure and flow rate

## TECHNICAL DATE

|                                      |                     |
|--------------------------------------|---------------------|
| Working pressure-infinitely variable | 5 - 250 bar         |
| Delivery(stroke)                     | 1.0l/min            |
| Weight                               | 15.5 kg             |
| Width/Length/Height                  | 33/60/53 cm         |
| Supply / Moter Power                 | AC 220V 60Hz / 750W |

## DESCRIPTION

- The small, compact, powerful reciprocating vacuum pump
- Speed & pressure control is depending on field conditions

## MATERIAL TO BE USED

- Epoxy & PUR resin
- SPUR foam
- Aqueous solution



# SINGLE-LINE INJECTION PUMP SWM-1600

## DELIVERY RANGE

Drive, pressure controll with return and Oil protection pressure gauge unit with manometer 0-400bar.  
4m material hose Ø6.4mm and high pressure ball valve with mouth piece,  
6ℓ material stainless steel container.



## ADVANTAGES

- The pump is small and light
- Easy operation and cleaning
- Easy adjustment of pressure and flow rate

## TECHNICAL DATE

|                                     |                     |
|-------------------------------------|---------------------|
| Working pressure-ininitely variable | 5 - 200 bar         |
| Delivery(stroke)                    | 1.7ℓ/min            |
| Weight                              | 15.5 kg             |
| Width/Length/Height                 | 33/60/53 cm         |
| Supply / Moter Power                | AC 220V 60Hz / 750W |

## DESCRIPTION

- The small, compact, powerful reciprocating vacuum pump
- Speed & pressure control is depending on field conditions

## MATERIAL TO BE USED

- Epoxy & PUR resin
- SPUR foam
- Aqueous solution



# SINGLE-LINE INJECTION PUMP SWM-1700

## DELIVERY RANGE

Drive, pressure controll with return and Oil protection pressure gauge unit with manometer 0-160bar.  
4m material hose Ø6.4mm and high pressure ball valve with mouth piece,  
6ℓ material stainless steel container.



## ADVANTAGES

- The pump is small and light
- Easy operation and cleaning
- Easy adjustment of pressure and flow rate

## TECHNICAL DATE

|                                     |                     |
|-------------------------------------|---------------------|
| Working pressure-ininitely variable | 5 - 100 bar         |
| Delivery(stroke)                    | 4.0ℓ/min            |
| Weight                              | 16.0 kg             |
| Width/Length/Height                 | 33/60/53 cm         |
| Supply / Moter Power                | AC 220V 60Hz / 750W |

## DESCRIPTION

- The small, compact, powerful reciprocating vacuum pump
- Speed & pressure control is depending on field conditions

## MATERIAL TO BE USED

- Epoxy & PUR resin
- SPUR foam
- Aqueous solution



# SINGLE-LINE INJECTION PUMP MCP-1800

## DELIVERY RANGE

Drive, pressure controll with return and Oil protection pressure gauge unit with manometer 0-160bar.  
4m material hose Ø6.4mm and high pressure ball valve with mouth piece.



## ADVANTAGES

- Pump body is anodizing Aluminium
- Exact adjustment of pressure
- Easy operation and cleaning

## TECHNICAL DATE

|                                      |                     |
|--------------------------------------|---------------------|
| Working pressure-infinitely variable | 5 - 100 bar         |
| Delivery(stroke)                     | 4.0l/min            |
| Weight                               | 13.3 kg             |
| Width/Length/Height                  | 33/45/52 cm         |
| Supply / Moter Power                 | AC 220V 60Hz / 750W |

## DESCRIPTION

- Can be use with 30l material container(option)
- Speed & pressure control is depending on field conditions

## MATERIAL TO BE USED

- Aqueous solution
- Micro Cement milk resin





# SINGLE-LINE INJECTION PUMP MCP-1900

## DELIVERY RANGE

Drive, pressure controll with return and Oil protection pressure gauge unit with manometer 0-160bar.  
4m material hose Ø6.4mm and high pressure ball valve with mouth piece.



## ADVANTAGES

- Can be use with only MCP-1800
- Stainless steel container

## TECHNICAL DATE

|                               |                                  |
|-------------------------------|----------------------------------|
| Rated voltage single phase    | 100V / 220V                      |
| Power frequency               | 50/60 Hz                         |
| Weight                        | 12 kg                            |
| Width/Length/Height           | 34/38/82 cm                      |
| Operational temperature range | 0 ~ 40°                          |
| Storage temperature range     | -10 ~ 60°                        |
| Operational humidity range    | 85%RH or lower(atnocondensation) |
| Rotaional speed               | 50Hz 0~500RPM(14.6kg-cm)         |
| Rotaional speed               | 60Hz 0~600RPM(18.2kg-cm)         |
| Mixer capacity                | 30l                              |

## MATERIAL TO BE USED

- Aqueous solution
- Micro Cement milk resin



# SINGLE-LINE AIR INJECTION PUMP AIR-4000

## DELIVERY RANGE

Drive, pressure gauge unit with 0-400bar, 4m material hose Ø6.4mm and high pressure ball valve with mouth piece, 6ℓ material stainless steel container.



## ADVANTAGES

- Exact adjustment of pressure
- Easy operation and cleaning
- Airless pump

## TECHNICAL DATE

|                                      |                   |
|--------------------------------------|-------------------|
| Pressure ratio                       | 48:1              |
| Operating air pressure               | 3~6.5 bar         |
| Max delivery                         | 2.5ℓ/min          |
| Max discharge pressure               | 310 bar(4,500psi) |
| Width/Length/Height-Working position | 60/45/90 cm       |
| Weight                               | 30 kg             |

## MATERIAL TO BE USED

- PUR resin
- SPUR foam
- Aqueous solution



# COMPONENT SINGLE-LINE

SINGLE-LINE PUMP

DOUBLE-LINE PUMP

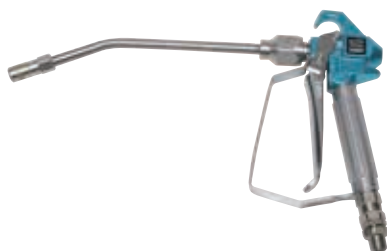
ACRYLIC RESIN PUMP

PACKER

CHEMICAL

## INJECTION GUN

- Allowable pressure 0-250bar



| Variant                | Unit | No    |
|------------------------|------|-------|
| Injection Gun 1/4" NPT | indv | 13030 |

### ◆ APPLICABLE PUMP MODEL

- SWM-1300    • SWM-1500    • SWM-1600
- SWM-4000

### ◆ ADVANTAGE/INFORMATION

- One touch coupling is an option
- SWM-1700    • SWM-1800    • SWM-1900

## INJECTION GUN

- Allowable pressure 0-700bar



| Variant                | Unit | No    |
|------------------------|------|-------|
| Injection Gun 1/4" NPT | indv | 13031 |

### ◆ APPLICABLE PUMP MODEL

- SWM-1300    • SWM-1500    • SWM-1600
- SWM-4000

### ◆ ADVANTAGE/INFORMATION

- One touch coupling is an option
- SWM-1700    • SWM-1800    • SWM-1900

## INJECTION GUN

- Allowable pressure 0-500bar



| Variant    | Unit | No    |
|------------|------|-------|
| Ball valve | indv | 13032 |

### ◆ APPLICABLE PUMP MODEL

- SWM-1000    • SWM-1200

## INJECTION GUN



| Variant        | Unit | No    |
|----------------|------|-------|
| 'ㄱ' Ball valve | indv | 13033 |

### ◆ APPLICABLE PUMP MODEL

- SWM-1000    • SWM-1200

# COMPONENT SINGLE-LINE

● INJECTION GUN



| Variant    | Unit | No    |
|------------|------|-------|
| Ball valve | indv | 13034 |

- ◆ APPLICABLE PUMP MODEL
- SWM-1000
  - SWM-1200

● INJECTION GUN



| Variant                | Unit | No    |
|------------------------|------|-------|
| Injection Gun 1/4" NPT | indv | 15030 |

- ◆ APPLICABLE PUMP MODEL
- SWM-1300
  - SWM-1500
  - SWM-1600
  - SWM-4000

● INJECTION GUN



| Variant             | Unit | No    |
|---------------------|------|-------|
| Ball valve, 1/4"NPT | indv | 17030 |

- ◆ APPLICABLE PUMP MODEL
- SWM-1700
  - SWM-1800
  - SWM-1900

● INJECTION GUN



| Variant             | Unit | No    |
|---------------------|------|-------|
| Ball valve, 1/4"NPT | indv | 13035 |

- ◆ APPLICABLE PUMP MODEL
- SWM-1300
  - SWM-1500
  - SWM-1600
  - SWM-4000

# COMPONENT SINGLE-LINE

SINGLE-LINE PUMP

DOUBLE-LINE PUMP

ACRYLIC RESIN PUMP

PACKER

CHEMICAL

## INJECTION GUN



| Variant                | Unit | No    |
|------------------------|------|-------|
| Injection Gun 1/4" NPT | indv | 13036 |

### ◆ APPLICABLE PUMP MODEL

- SWM-1000
- SWM-1200

## INJECTION GUN



| Variant             | Unit | No    |
|---------------------|------|-------|
| Cook ball valve gun | indv | 13037 |

### ◆ APPLICABLE PUMP MODEL

- SWM-1000
- SWM-1200

## INJECTION GUN



| Variant         | Unit | No    |
|-----------------|------|-------|
| ' 7 ' Valve set | indv | 13038 |

### ◆ APPLICABLE PUMP MODEL

- SWM-1000
- SWM-1200

## INJECTION WHIP



| Variant          | Unit | No    |
|------------------|------|-------|
| Hose length 30cm | indv | 13039 |



# COMPONENT SINGLE-LINE

## MATERIAL HOSE STEEL

- High pressure hose
- Max operating 380 bar / Min burst 1,400 bar



| Variant                                    | Unit | No    |
|--|------|-------|
| Nitta Moore 02 Ø3.4mm, 5m Long 7/16"~7/16" | indv | 13028 |
| Nitta Moore 02 Ø3.4mm, 5m Long 7/16"~7/16" | indv | 13029 |

### ♦ APPLICABLE PUMP MODEL

- SWM-1000
- SWDM-2100(B)

## MATERIAL HOSE STEEL

- High pressure hose
- Max operating 380 bar / Min burst 1,400 bar



| Variant                                    | Unit | No    |
|--|------|-------|
| Nitta Moore 03 Ø4.8mm, 5m Long 7/16"~7/16" | indv | 13026 |
| Nitta Moore 03 Ø4.8mm, 4m Long 7/16"~7/16" | indv | 13027 |

### ♦ APPLICABLE PUMP MODEL

- SWM-1000
- SWM-1200
- SWDM-2000
- SWDM-2100(A)

## MATERIAL HOSE STEEL

- High pressure hose
- Max operating 430 bar / Min burst 1,290 bar



| Variant                                | Unit | No    |
|--|------|-------|
| PSH 04 Ø6.4mm 5m Long 3/8"PF ~ 1/4"NPT | indv | 13024 |
| PSH 04 Ø6.4mm 4m Long 3/8"PF ~ 1/4"NPT | indv | 13025 |

### ♦ APPLICABLE PUMP MODEL

- SWHM-100
- SWHM-110
- SWHM-200
- SWM-1500
- SWM-1600
- SWM-1700
- AIR-4000
- MCP-1800
- MCP-1900

| Variant                               | Unit | No    |
|---------------------------------------|------|-------|
| PSH 04 Ø6.4mm 5m Long 3/8"PF ~ 3/8"PF | indv | 50028 |
| PSH 04 Ø6.4mm 4m Long 3/8"PF ~ 3/8"PF | indv | 50029 |

### ♦ APPLICABLE PUMP MODEL

- AIR-5000

## MATERIAL HOSE STEEL

- High pressure hose
- Max operating 430 bar / Min burst 1,290 bar



| Variant                            | Unit | No    |
|------------------------------------|------|-------|
| PSH 04 Ø6.4mm, 5m Long 7/16"~7/16" | indv | 10020 |
| PSH 04 Ø6.4mm, 4m Long 7/16"~7/16" | indv | 10021 |

### ♦ APPLICABLE PUMP MODEL

- SWM-1000
- SWM-1200
- SWDM-2200
- SWDM-2300

| Variant                                  | Unit | No    |
|--|------|-------|
| PSH 04 Ø6.4mm, 5m Long 1/4"NPT ~ 1/4"NPT | indv | 13022 |
| PSH 04 Ø6.4mm, 4m Long 1/4"NPT ~ 1/4"NPT | indv | 13023 |

### ♦ APPLICABLE PUMP MODEL

- SWM-1300

# COMPONENT SINGLE-LINE

SINGLE-LINE PUMP

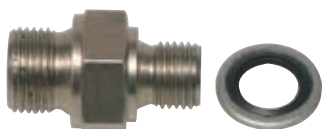
DOUBLE-LINE PUMP

ACRYLIC RESIN PUMP

PACKER

CHEMICAL

## ● NIPPLE



| Variant                             | Unit | No    |
|-------------------------------------|------|-------|
| 1/4"PF ~ 3/8"PF steel double nipple | indv | 13050 |

## ● ARC CYLINDER

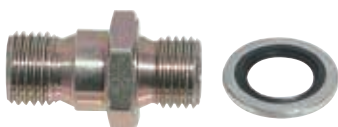


| Variant                                 | Unit | No    |
|---|------|-------|
| Ø10mm phosphor bronze & stainless steel | indv | 30045 |

### ◆ APPLICABLE PUMP MODEL

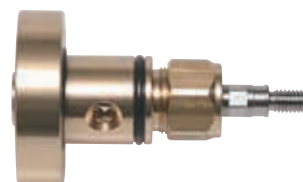
- SWM-1200
- ARC-3000

## ● NIPPLE



| Variant                              | Unit | No    |
|--------------------------------------|------|-------|
| 1/4"PF ~ 1/4"NPT steel double nipple | indv | 13051 |

## ● CYLINDER



| Variant               | Unit | No    |
|-----------------------|------|-------|
| Cylinder Ø7.4mm Brass | indv | 10044 |

### ◆ APPLICABLE PUMP MODEL

- SWDM-2100
- SWDM-2300

| Variant             | Unit | No    |
|---------------------|------|-------|
| Cylinder Ø8mm Brass | indv | 10045 |

### ◆ APPLICABLE PUMP MODEL

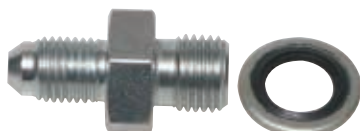
- SWM-1000
- SWM-1300
- SWDM-2000
- SWDM-2200

| Variant              | Unit | No    |
|----------------------|------|-------|
| Cylinder Ø10mm Brass | indv | 10046 |

### ◆ APPLICABLE PUMP MODEL

- SWDM-2100
- SWDM-2300

## ● SOCKET



| Variant                | Unit | No    |
|------------------------|------|-------|
| 7/16"PF x 1/4"PF steel | indv | 13052 |

# COMPONENT SINGLE-LINE

## ● CYLINDER



| Variant  | Unit | No    |
|--|------|-------|
| Cylinder Ø 20mm<br>(stainless steel & phosphor bronze) | indv | 15008 |

### ◆ APPLICABLE PUMP MODEL

- SWHM-100
- SWM-1700
- ARCH-300
- SWHM-110
- MCP-1800
- ARC-3300
- SWHM-200
- MCP-1900

## ● CYLINDER



| Variant                             | Unit | No    |
|-------------------------------------|------|-------|
| Cylinder Ø12mm<br>(phosphor bronze) | indv | 15006 |

### ◆ APPLICABLE PUMP MODEL

- SWM-1500
- ARC-3100

| Variant   | Unit | No    |
|---|------|-------|
| Cylinder Ø15mm<br>(phosphor bronze & stainless steel) | indv | 15007 |

### ◆ APPLICABLE PUMP MODEL

- SWM-1600
- ARC-3200

## ● INBALE CHECK VALVE

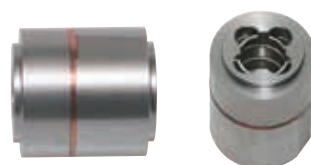


| Variant                            | Unit | No    |
|------------------------------------|------|-------|
| Ball check valve (stainless steel) | indv | 15005 |

### ◆ APPLICABLE PUMP MODEL

- SWHM-100
- SWM-1500
- MCP-1800
- ARC-3200
- SWHM-110
- SWM-1600
- ARCH-300
- ARC-3300
- SWHM-200
- SWM-1700
- ARC-3100

## ● DISCHARGE CHECK VALVE



| Variant                            | Unit | No    |
|------------------------------------|------|-------|
| Ball check valve (stainless steel) | indv | 15020 |

### ◆ APPLICABLE PUMP MODEL

- SWHM-100
- SWM-1500
- MCP-1800
- ARC-3200
- SWHM-110
- SWM-1600
- ARCH-300
- ARC-3300
- SWHM-200
- SWM-1700
- ARC-3100

# COMPONENT SINGLE-LINE

SINGLE-LINE PUMP

DOUBLE-LINE PUMP

ACRYLIC RESIN PUMP

PACKER

CHEMICAL

## AIR VENT CONTROLLER



| Variant                     | Unit | No    |
|-----------------------------|------|-------|
| Anodizing aluminium & steel | indv | 15021 |

### ♦ APPLICABLE PUMP MODEL

- SWHM-100
- SWHM-110
- SWHM-1500
- SWM-1600
- SWM-1700
- SWM-1800

## PRESSURE CONTROLLER



| Variant                     | Unit | No    |
|-----------------------------|------|-------|
| Anodizing aluminium & steel | indv | 15026 |

### ♦ APPLICABLE PUMP MODEL

- SWM-1300
- SWM-1500
- SWM-1600
- SWDM-2200
- SWDM-2300

## PRESSURE CONTROLLER

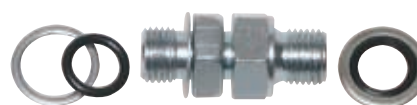


| Variant | Unit | No    |
|---------|------|-------|
|         | indv | 33026 |

### ♦ APPLICABLE PUMP MODEL

- SWM-1700
- MCP-1800
- MCP-1900
- ARC-3300

## NIPPLE



| Variant                            | Unit | No    |
|------------------------------------|------|-------|
| 1/4"PF steel turning double nipple | indv | 15022 |

# COMPONENT SINGLE-LINE

## SOCKET



| Variant         | Unit | No    |
|-----------------|------|-------|
| T- steel socket | indv | 18020 |

- ◆ APPLICABLE PUMP MODEL
  - MCP-1800

## NOZZLE



| Variant | Unit | No    |
|---------|------|-------|
| steel   | indv | 10057 |

## CONTAINER



| Variant                      | Unit | No    |
|------------------------------|------|-------|
| 6ℓ stainless steel container | indv | 15001 |

## CONTAINER



| Variant           | Unit | No    |
|-------------------|------|-------|
| 2ℓ plastic bottle | indv | 10001 |



# COMPONENT SINGLE-LINE

SINGLE-LINE PUMP

DOUBLE-LINE PUMP

ACRYLIC RESIN PUMP

PACKER

CHEMICAL

## GAUGE



| Variant                   | Unit | No    |
|---------------------------|------|-------|
| Oil protection gauge unit | indv | 15025 |
| Fitting TAPE 400bar       |      |       |

### ◆ APPLICABLE PUMP MODEL

- SWM-1500
- SWM-1600

| Variant                   | Unit | No    |
|---------------------------|------|-------|
| Oil protection gauge unit | indv | 18026 |
| Fitting TAPE 160bar       |      |       |

### ◆ APPLICABLE PUMP MODEL

- MCP-1800
- MCP-1900
- SWM-1700

## GAUGE



| Variant                           | Unit | No    |
|-----------------------------------|------|-------|
| Oil protection gauge unit         | indv | 13045 |
| 1/4"PF turning nipple TAPE 600bar |      |       |

### ◆ APPLICABLE PUMP MODEL

- SWM-1300

## GAUGE



| Variant                   | Unit | No    |
|---------------------------|------|-------|
| Oil protection gauge unit | indv | 10002 |
| 1/4" PT 600bar            |      |       |

### ◆ APPLICABLE PUMP MODEL

- SWM-1000
- SWM-1200
- SWDM-2000
- SWDM-2100
- SWDM-2200
- SWDM-2300
- ARC-3000

## GAUGE



| Variant                          | Unit | No    |
|----------------------------------|------|-------|
| Oil protection gauge unit 250bar | indv | 10025 |

### ◆ APPLICABLE PUMP MODEL

- SWHM-100
- SWHM-110
- SWHM-200

# COMPONENT SINGLE-LINE

## FILTER



| Variant         | Unit | No    |
|-----------------|------|-------|
| Stainless steel | indv | 10033 |

## FILTER



| Variant         | Unit | No    |
|-----------------|------|-------|
| Stainless steel | indv | 10032 |

## CLEANING OIL



| Variant      | Unit | No    |
|--------------|------|-------|
| Cleaning oil | indv | 10060 |

## CONTROLLER

- Drill speed controller
- Machine installation



| Variant             | Unit | No    |
|---------------------|------|-------|
| AC 220V(50Hz, 60Hz) | indv | 11003 |

### ♦ APPLICABLE PUMP MODEL

- SWM-1200 • SWDM-2000 • SWDM-2100

### ♦ ADVANTAGE/INFORMATION

- Change speed extent : 0~10
- Rated voltage : AC220V(50Hz, 60Hz)
- Output voltage : AC220V 10A 2KVA(0~220V)

# DOUBLE-LINE MANUAL PUMP SWHM-200

## DELIVERY RANGE

Hand lever, fork-shaped piece, 2x2ℓ material container transparent, 2x4m material hose Ø 6.4mm, two components mixing head



## ADVANTAGES

- The two components Mixing head
- Pump body of Aluminium, stainless steel and electric powder coating support

## TECHNICAL DATE

|                                      |                          |
|--------------------------------------|--------------------------|
| Working pressure                     | 0 - 150 bar              |
| Delivery(stroke)                     | 2x5 (10cm <sup>3</sup> ) |
| Mixing ratio                         | 1:1                      |
| Weight                               | 16.0 kg                  |
| Width/Length/Height-Working position | 45/89/72-110 cm          |

## DESCRIPTION

- The robust compact manual reciprocating pump is ideal for short-time service
- Easy operation and cleaning
- The protection gauge unit is an option

## MATERIAL TO BE USED

- 2-components injection resin
- PUR resin
- SPUR foam



# DOUBLE-LINE INJECTION PUMP SWDM-2000

## DELIVERY RANGE

Drive, two pressure gauge units with 0-700bar(0~10,000psi), 2x4m material hose(NO.03) Ø 4.8mm, two components mixing head and 2x2ℓ material container transparent.  
Double-line liquid type high strength polyurethane injection taking a short time to harden



## ADVANTAGES

- Two components Mixing head
- The pump is small and light
- Easy operation and cleaning

## TECHNICAL DATE

|                      |                         |
|----------------------|-------------------------|
| Working pressure     | 0 - 250 bar             |
| Delivery(stroke)     | 2 x 0.35ℓ/min(0.7ℓ/min) |
| Mixing ratio         | 1:1                     |
| Weight               | 12.0 kg                 |
| Width/Length/Height  | 32/45/47 cm             |
| Supply / Moter Power | AC 220V 60Hz / 650W     |

## DESCRIPTION

- Cylinder standard : 2 x Ø8mm (0.35ℓ/min x 2), 0.7ℓ/min
- Delivery rate of growth : 2 x Ø10mm (0.55ℓ/min x 2), 1.1ℓ/min
- Speed controller is an option
- The protection gauge unit is an option

## MATERIAL TO BE USED

- PUR resin
- SPUR foam



# DOUBLE-LINE INJECTION PUMP SWDM-2100

## DELIVERY RANGE

Drive, two pressure gauge units with 0-700bar(0~10,000psi). 2x4m material hose (A:NO.03)Ø4.8mm / (B:NO.02)Ø3.6mm, Two components mixing head and 2x2ℓ material container transparent.



## ADVANTAGES

- Two components Mixing head
- The pump is small and light
- Easy operation and cleaning

## TECHNICAL DATE

|                      |                               |
|----------------------|-------------------------------|
| Working pressure     | 0 - 250 bar                   |
| Delivery(stroke)     | 0.84ℓ/min                     |
| Mixing ratio         | 2:1 (A:0.56ℓ/min B:0.28ℓ/min) |
| Weight               | 12.0 kg                       |
| Width/Length/Height  | 32/38/47 cm                   |
| Supply / Moter Power | AC 220V 60Hz / 650W           |

## DESCRIPTION

- Speed controller is an option
- The protection gauge unit is an option

## MATERIAL TO BE USED

- EPOXY resin
- SPUR foam

## ● INJECTION OF TWO-COMPONENT LIQUID AND CLEANING METHOD 이액형 주입과 세척 방법



주입 [Injection]



세척 [Cleaning]

The valve shall be always located as shown in the picture at the top. Do not use it for any purposes other than two operations such as injection and cleaning (They are well described in the instruction manual.).

항상 밸브의 위치는 맨위의 그림처럼 하여 주시고, 주입상태와, 오바이트, 즉 세척동작(기계사용설명서에 잘 나와 있음)이 두가지 동작외에는 사용하지 마십시오.

## ● PRECAUTIONS ON THE USE OF THE MACHINE (WRONG OPERATION) 기계 사용시 주의사항(잘못된 상태)



(X) [Wrong operation]



(X) [Wrong operation]

If you operate (test) the machine with the high pressure valve handle positioned like this, the pressure gauge is in a position of being completely turned momentarily, causing trouble. Therefore, never place the valve handle in the position as shown above.

고압밸브 손잡이 위치가 이러한 상태에서 기계 동작(테스트)을 하시면, 압력게이지가 순간 완전히 돌아간 상태가 되어 고장이 발생하므로 절대 밸브 손잡이 위치를 위의 상태로 동작하지 마십시오. 두가지 동작외에는 사용하지 마십시오.

- If you do not use the machine for the time being at the time of injection (For example, when having a meal), open the recirculation valve (By-Pass), close the B-hardener valve (II-shaped position), and operate the injector. Then, as the A-type liquid chemical is discharged, the liquid chemical is not hardened.
- If you do not use it for a long period of time, clean it as indicated separately so that the liquid chemical cannot be hardened inside the high pressure hose and the injector. In particular, in case of using the epoxy injection agent (steel plate injection agent / low, medium, and high viscosity injection agent), you must clean it always except in the case of operating it every day continuously.
- 주입도중 잠시 기계를 사용치 않을 시(식사시, 기타) 재순환밸브(By-Pass)를 연다음, B경화제 밸브를 잠그고(II자 형태) 주입기를 작동시키면 A주제 약액만 토출되므로 약액이 굳지 않습니다.
- 장기간 사용을 안할 경우는 별도 표기와 같이 청소를 하셔야 고압호스나 주입기 내부가 약액으로 인하여 굳지 않습니다. 특히 에폭시 주입제(철판 주입제/저,중,고점도 주입제)를 사용한 경우에는 연일 작업하는 경우를 제외하고는 반드시 청소를 실시하여야만 합니다.



# DOUBLE-LINE INJECTION PUMP SWDM-2200

## DELIVERY RANGE

Drive, Two pressure controll with return and pressure gauge units with manometer 0-600bar. 2x4m material hose(NO.04) Ø6.4mm and high pressure ball valve with mouth piece, 2x2ℓ material container. Double-line liquid type high strength polyurethane injection taking a short time to harden



## ADVANTAGES

- Easy adjustment of pressure and flow rate
- The pump is small and light
- Easy operation and cleaning

## TECHNICAL DATE

|                                     |                         |
|-------------------------------------|-------------------------|
| Working pressure-ininitely variable | 0 - 250 bar             |
| Delivery(stroke)                    | 2 x 0.35ℓ/min(0.7ℓ/min) |
| Mixing ratio                        | 1:1                     |
| Weight                              | 12.0 kg                 |
| Width/Length/Height                 | 32/38/47 cm             |
| Supply / Moter Power                | AC 220V 60Hz / 750W     |

## DESCRIPTION

- Cylinder standard : 2 x Ø8mm (0.35ℓ/min x 2), 7ℓ/min
- Delivery rate of growth : 2 x Ø10mm (0.55ℓ/min x 2), 1.1ℓ/min
- Speed & pressure control is depending on field conditions
- The protection gauge unit is an option

## MATERIAL TO BE USED

- PUR resin
- SPUR foam



# DOUBLE-LINE INJECTION PUMP SWDM-2300

## DELIVERY RANGE

Drive, two pressure gauge units with 0-600bar, 2x4m material hose (NO.04)Ø6.4mm, Two components mixing head and 2x2ℓ material container transparent.



## ADVANTAGES

- Easy adjustment of pressure and flow rate
- The pump is small and light
- Easy operation and cleaning

## TECHNICAL DATE

|                                     |                               |
|-------------------------------------|-------------------------------|
| Working pressure-ininitely variable | 0 - 250 bar                   |
| Delivery(stroke)                    | 0.84ℓ/min                     |
| Mixing ratio                        | 2:1 (A:0.56ℓ/min B:0.28ℓ/min) |
| Weight                              | 12.0 kg                       |
| Width/Length/Height                 | 32/38/47 cm                   |
| Supply / Moter Power                | AC 220V 60Hz / 750W           |

## DESCRIPTION

- Two components Mixing head
- Speed & pressure control is depending on field conditions
- The protection gauge unit is an option

## MATERIAL TO BE USED

- EPOXY resin
- SPUR foam



# DOUBLE-LINE AIR INJECTION PUMP **AIR-5000**

## DELIVERY RANGE

Drive, two pressure gauge units with 0-400bar, 2x4m material hose (NO.04)Ø6.4mm,  
Two components mixing head and 2x6ℓ material stainless steel container.  
Double-line liquid type high strength polyurethane injection taking a short time to harden.



## ADVANTAGES

- Exact adjustment of pressure
- Easy operation and cleaning
- Airless pump

## TECHNICAL DATE

|                        |             |
|------------------------|-------------|
| Pressure ratio         | 48:1        |
| Operating air pressure | 3~7 bar     |
| Mixing ratio           | 1:1         |
| Max delivery           | 5ℓ/min      |
| Max discharge pressure | 100 bar     |
| Stroke                 | 100 mm      |
| Cycle                  | 60/min      |
| Width/Length/Height    | 76/50/91 cm |
| Weight                 | 45 kg       |

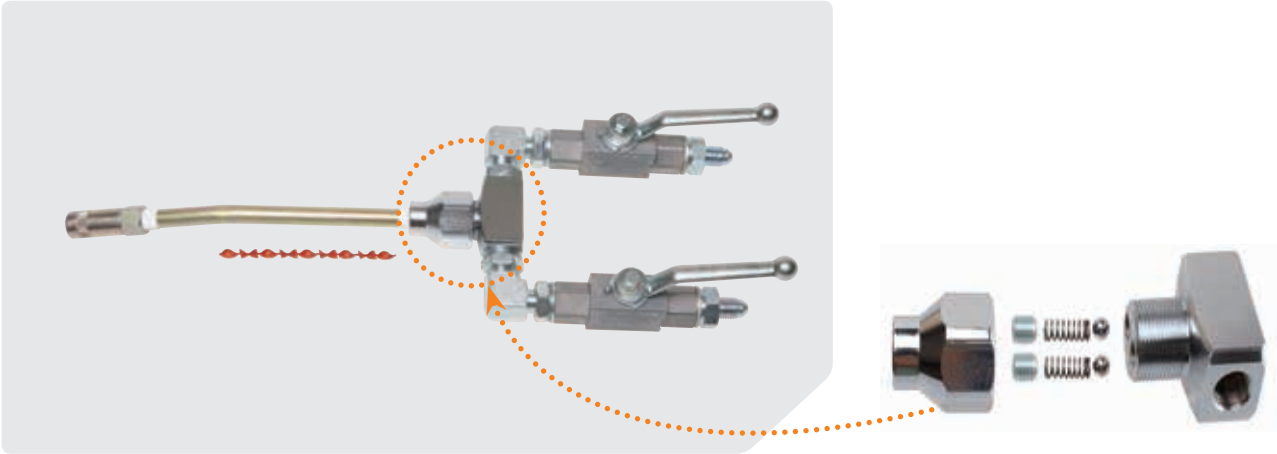
## MATERIAL TO BE USED

- PUR resin
- SPUR foam
- Aqueous solution



# COMPONENT DOUBLE-LINE

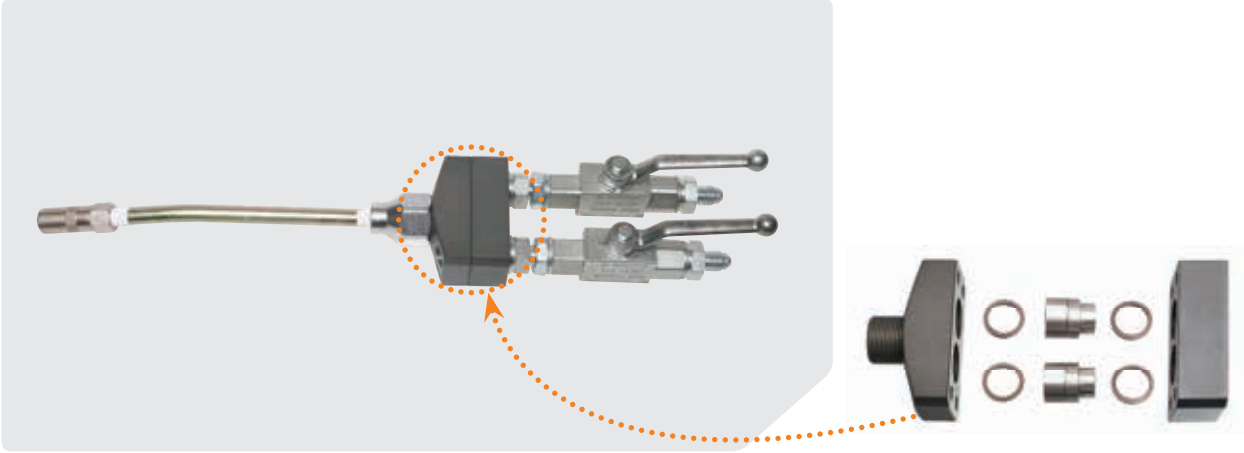
INJECTION GUN



| Variant          | Unit | No    |
|------------------|------|-------|
| Steel double gun | indv | 20030 |

- ◆ APPLICABLE PUMP MODEL
- SWDM-2000    • SWDM-2100

INJECTION GUN



| Variant          | Unit | No    |
|------------------|------|-------|
| Steel double gun | indv | 20031 |

- ◆ APPLICABLE PUMP MODEL MODEL
- SWHM-200    • SWDM-2000    • SWDM-2100
  - SWDM-2200    • SWDM-2300



# *ACRYLAT GELS*



# RESIN MANUAL PUMP ARCH-300

## DELIVERY RANGE

Fork-shaped piece, 2x6l material stainless steel container, 2x4m material hose Ø6.4mm, two components mixing head



## ADVANTAGES

- The two components Mixing head
- Pump body of Aluminium, stainless steel and electric powder coating support

## TECHNICAL DATE

|                                      |                 |
|--------------------------------------|-----------------|
| Working pressure                     | 0 - 150 bar     |
| Delivery(stroke)                     | 2x5 (10cm³)     |
| Mixing ratio                         | 1:1             |
| Weight                               | 23.5 kg         |
| Width/Length/Height-Working position | 57/65/53~110 cm |

## DESCRIPTION

- The robust and compact manual reciprocating pump
- The pump short-time is service
- Easy cleaning
- The protection gauge unit is an option

## MATERIAL TO BE USED

- 2-components injection resin
- Aqueous solution
- Acrylic resin





# ACRYLIC RESIN INJECTION PUMP ARC-3000

## DELIVERY RANGE

Drive, two pressure gauge units with 0-600bar, 2x2ℓ material container transparent, 2x4m material hose(NO.04) Ø 6.4mm, two components mixing head



## ADVANTAGES

- Two components Mixing head
- The pump is small and light
- Easy operation and cleaning

## TECHNICAL DATE

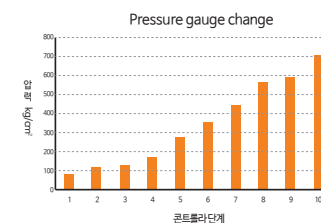
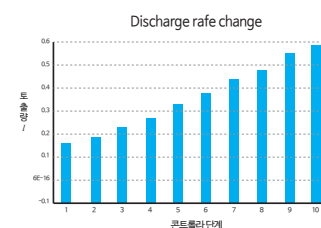
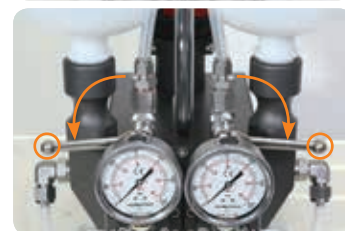
|                     |                        |
|---------------------|------------------------|
| Working pressure    | 0 - 200 bar            |
| Delivery            | 1.1ℓ/min               |
| Mixing ratio        | 1:1                    |
| Weight              | 15.0 kg                |
| Width/Length/Height | 30/41/47 cm            |
| Speed controller    | 0 - 10 change of speed |

## DESCRIPTION

- The pump short-time is service
- Speed & pressure control is depending on field conditions
- The protection gauge unit is an option

## MATERIAL TO BE USED

- 2-components injection resin
- Acrylic resin
- Aqueous solution



# ACRYLIC RESIN INJECTION PUMP ARC-3100

## DELIVERY RANGE

Drive, two pressure gauge units with 0-400bar, 2x6ℓ material stainless steel container, 2x4m material hose(NO.04) Ø6.4mm, two components mixing head



## ADVANTAGES

- Easy adjustment of pressure and flow rate
- The pump is small and light
- Easy operation and cleaning

## TECHNICAL DATE

|                                     |             |
|-------------------------------------|-------------|
| Working pressure-ininitely variable | 0 - 150 bar |
| Delivery                            | 2.0ℓ/min    |
| Mixing ratio                        | 1:1         |
| Weight                              | 22.0 kg     |
| Width/Length/Height                 | 57/65/53 cm |

## DESCRIPTION

- Oil protection gauge
- Two components Mixing head
- Pressure control is depending on field conditions

## MATERIAL TO BE USED

- 2-components injection resin
- Acrylic resin
- Aqueous solution



# ACRYLIC RESIN INJECTION PUMP ARC-3200

## DELIVERY RANGE

Drive, two pressure gauge units with 0-250bar, 2x6ℓ material stainless steel container, 2x4m material hose(NO.04) Ø6.4mm, two components mixing head



## ADVANTAGES

- Easy adjustment of pressure and flow rate
- The pump is small and light
- Easy operation and cleaning

## TECHNICAL DATE

|                                     |             |
|-------------------------------------|-------------|
| Working pressure-ininitely variable | 0 - 80 bar  |
| Delivery                            | 3.4ℓ/min    |
| Mixing ratio                        | 1:1         |
| Weight                              | 22.0 kg     |
| Width/Length/Height                 | 57/65/53 cm |

## DESCRIPTION

- Oil protection gauge
- Two components Mixing head
- Pressure control is depending on field conditions

## MATERIAL TO BE USED

- 2-components injection resin
- Acrylic resin
- Aqueous solution



# ACRYLIC RESIN INJECTION PUMP ARC-3300

## DELIVERY RANGE

Drive, two pressure gauge units with 160bar, 2x6l material stainless steel container, 2x4m material hose(NO.04) Ø6.4mm, two components mixing head



## ADVANTAGES

- Easy adjustment of pressure and flow rate
- The pump is small and light
- Easy operation and cleaning

## TECHNICAL DATE

|                                     |             |
|-------------------------------------|-------------|
| Working pressure-ininitely variable | 0 - 30 bar  |
| Delivery                            | 8.0l/min    |
| Mixing ratio                        | 1:1         |
| Weight                              | 22.0 kg     |
| Width/Length/Height                 | 57/65/53 cm |

## DESCRIPTION

- oil protection gauge
- Two components Mixing head
- Pressure control is depending on field conditions

## MATERIAL TO BE USED

- 2-components injection resin
- Acrylic resin
- Aqueous solution



# COMPONENT ACRYLIC-LINE

SINGLE-LINE PUMP

DOUBLE-LINE PUMP

ACRYLIC RESIN PUMP

PACKER

CHEMICAL

## ● ARC DOUBLE GUN



| Variant                               | Unit | No    |
|---------------------------------------|------|-------|
| Anodizing aluminium & stainless steel | indv | 30001 |

### ◆ APPLICABLE PUMP MODEL

- ARC-300
- ARC-3000

## ● ARC DOUBLE GUN



| Variant         | Unit | No    |
|-----------------|------|-------|
| Stainless steel | indv | 33001 |

### ◆ APPLICABLE PUMP MODEL

- ARC-3100
- ARC-3200
- ARC-3300
- AIR-5000

## ● STICK MIXER



| Variant                         | Unit | No    |
|---------------------------------|------|-------|
| Ø6.5mm plastic mixer 100mm long | indv | 20067 |

### ◆ APPLICABLE ARC DOUBLE GUN MODEL

- No.30001

| Variant                        | Unit | No    |
|--------------------------------|------|-------|
| Ø9.4mm plastic mixer 65mm long | indv | 20068 |

### ◆ APPLICABLE ARC DOUBLE GUN MODEL

- No.33001

## ● ARC CYLINDER



| Variant                                 | Unit | No    |
|---|------|-------|
| Ø10mm phosphor bronze & stainless steel | indv | 30045 |

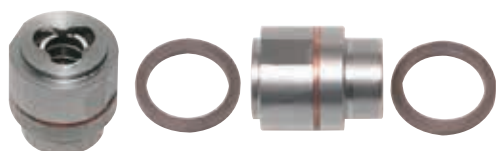
### ◆ APPLICABLE PUMP MODEL

- ARC-3000



# COMPONENT ACRYLIC-LINE

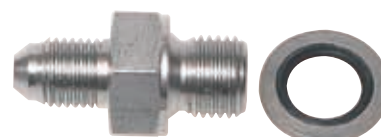
## CHECK VALVE



| Variant                                   | Unit | No    |
|---|------|-------|
| High pressure stainless steel check valve | indv | 30005 |

- ◆ APPLICABLE PUMP MODEL
  - ARC-3000
- ◆ APPLICABLE ARC DOUBLE GUN MODEL
  - No. 30001
- ◆ APPLICABLE INJECTION GUN MODEL
  - No. 20031

## SOCKET



| Variant                | Unit | No    |
|------------------------|------|-------|
| 1/4"PF Stainless steel | indv | 30051 |

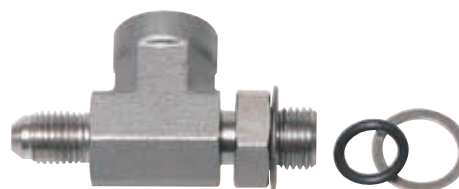
- ◆ APPLICABLE PUMP MODEL
  - ARC-3000

## NIPPLE



| Variant   | Unit | No    |
|---|------|-------|
| 1/4"PF stainless steel turning<br>double nipple | indv | 30062 |

## SOCKET



| Variant                   | Unit | No    |
|---------------------------|------|-------|
| T- stainless steel socket | indv | 30055 |



# COMPONENT ACRYLIC-LINE

SINGLE-LINE PUMP

DOUBLE-LINE PUMP

ACRYLIC RESIN PUMP

PACKER

CHEMICAL

## CHECK VALVE



| Variant                     | Unit | No    |
|-----------------------------|------|-------|
| Stainless steel check valve | indv | 33002 |

- ◆ APPLICABLE ARC DOUBLE GUN MODEL
  - No. 33001

## GAUGE



| Variant                     | Unit | No    |
|-----------------------------|------|-------|
| Oil protection gauge 400bar | indv | 31025 |

- ◆ APPLICABLE PUMP MODEL
  - ARC-3100

| Variant                     | Unit | No    |
|-----------------------------|------|-------|
| Oil protection gauge 250bar | indv | 32026 |

- ◆ APPLICABLE PUMP MODEL
  - SWHM-100    • SWHM-110    • SWHM-200
  - ARCH-300    • ARC-3200

| Variant                     | Unit | No    |
|-----------------------------|------|-------|
| Oil protection gauge 160bar | indv | 33027 |

- ◆ APPLICABLE PUMP MODEL
  - ARC-3300

## PRESSURE CONTROLLER



| Variant         | Unit | No    |
|-----------------|------|-------|
| Stainless steel | indv | 31026 |

- ◆ APPLICABLE PUMP MODEL
  - ARC-3100    • ARC-3200    • ARC-3300

## AIR VENT CONTROLLER



| Variant                   | Unit | No    |
|---------------------------|------|-------|
| Air Vent(stainless steel) | indv | 31021 |

- ◆ APPLICABLE PUMP MODEL
  - ARCH-300    • ARC-3100    • ARC-3200
  - ARC-3300

# COMPONENT ACRYLIC-LINE

## MATERIAL HOSE STAINLESS STEEL

- High pressure hose
- Max operating 340 bar / Min burst 1,000 bar



| Variant  | Unit | No    |
|--|------|-------|
| Nitta Moore 03 Ø4.8mm, 5m Long Stainless Steel | indv | 30027 |
| Nitta Moore 03 Ø4.8mm, 4m Long Stainless Steel | indv | 30028 |

- ◆ APPLICABLE PUMP MODEL
- ARC-3000

## MATERIAL HOSE STAINLESS STEEL

- High pressure hose
- Max operating 430 bar / Min burst 1,290 bar



| Variant   | Unit | No    |
|---|------|-------|
| PSH 04 Ø6.4mm Stainless Steel 5m Long 7/16"~7/16" | indv | 30025 |
| PSH 04 Ø6.4mm Stainless Steel 4m Long 7/16"~7/16" | indv | 30026 |

- ◆ APPLICABLE PUMP MODEL
- ARC-3000

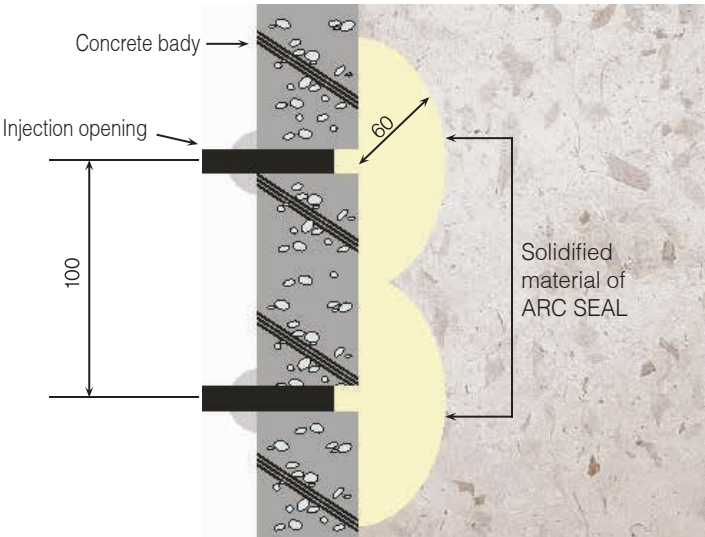
## MATERIAL HOSE STAINLESS STEEL

- High pressure hose
- Max operating 430 bar / Min burst 1,290 bar



| Variant   | Unit | No    |
|---|------|-------|
| PSH 04 Ø6.4mm Stainless Steel 5m Long 3/8"PF ~ 3/8"PF | indv | 33021 |
| PSH 04 Ø6.4mm Stainless Steel 4m Long 3/8"PF ~ 3/8"PF | indv | 33022 |

- ◆ APPLICABLE PUMP MODEL
- ARC-3100    • ARC-3200    • ARC-3300
- AIR-5000

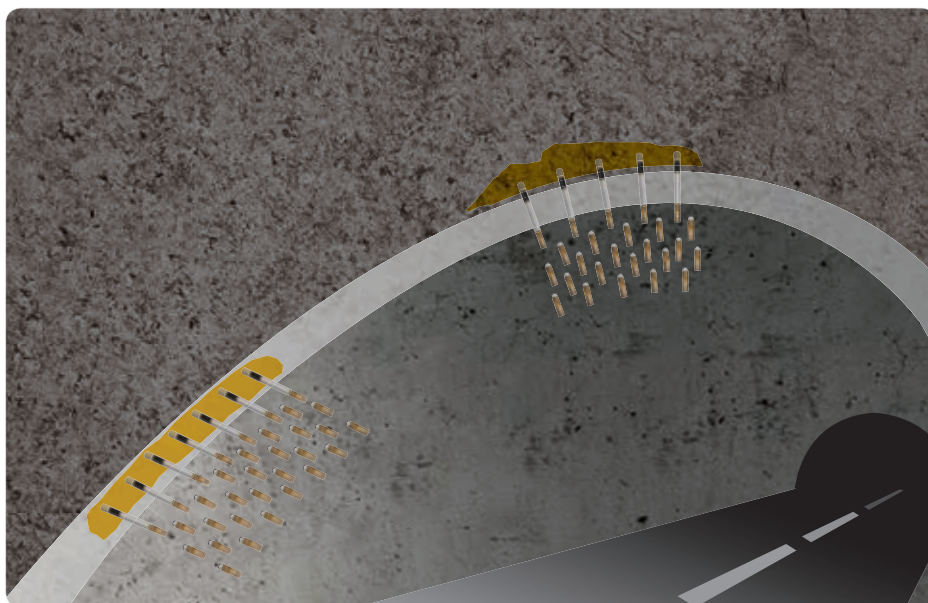


ARC SEAL BACK INJECTION METHOD

# CONSTRUCTION WORK, EXAMPLE

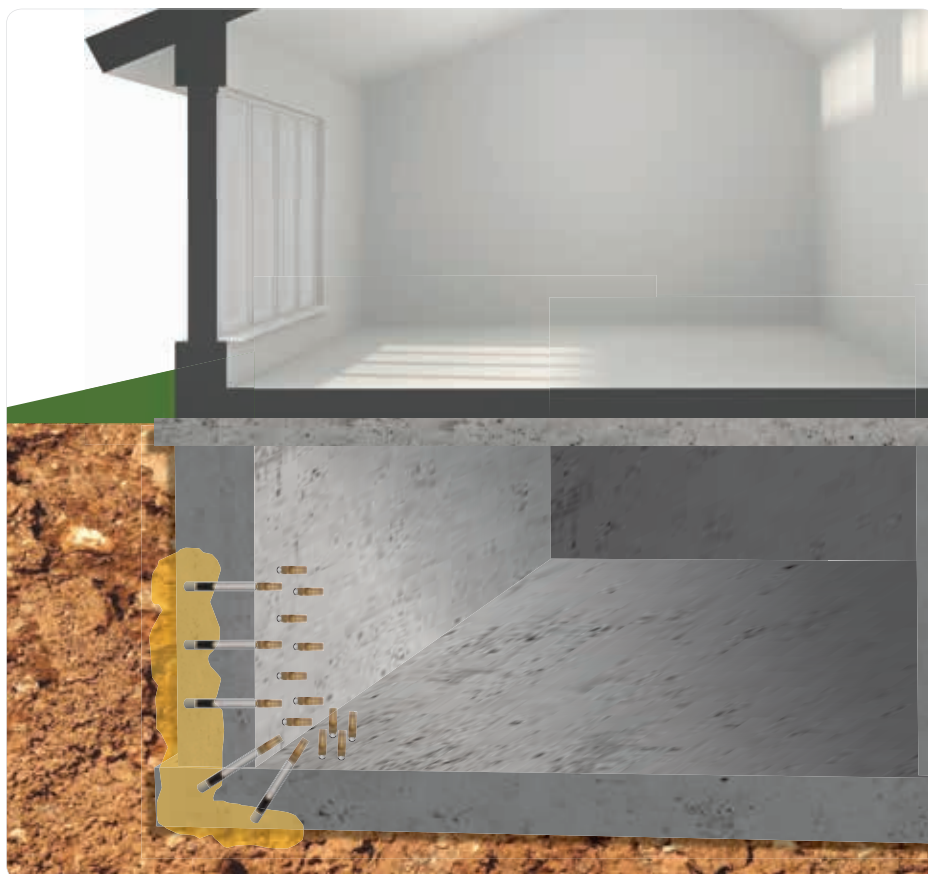
Packer is a must have in chemical grout used for injection of epoxy and polyurethane foam in into hose penetrated at a pressure higher than 20kg/cm(max. pressure 500kg/cm) on to concrete structures. We produce the injection packers in various specifications that are required in repairing and reinforcing concrete structures.

The factory automation we have enable us not only cut back costs but also produce them in uniform quality. The specification of packers used here may be chosen depending on the thickness of the concrete structures and on site situations.



It is possible to force a large amount of resin at a high speed, which ensures the through injection.

Because backwater check valves are installed on bolt areas, it is possible, irrespective of the hardening of resin, to snap the severed parts of the nuts immediately after the injection work is completed.



SINGLE-LINE PUMP

DOUBLE-LINE PUMP

ACRYLIC RESIN PUMP

PACKER

CHEMICAL

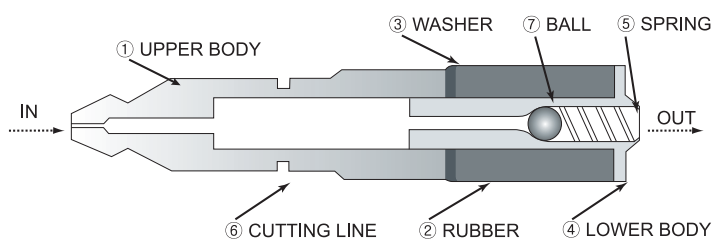
# INJECTION PACKER



## ● OVERVIEW [소개]

Patented construction method preventing water-tight layer form destruction mainly because of cracks or its swelling/ coming off as expansion matters such as moisture generated form layers under the water-tight layer, which is exposed and directly affected by tem- perature are emitted.

당사는 콘크리트 구조물의 보수·보강 유지보수에 필수 요소인 인젝션용 패 카를 다양한 제품으로 생산하고 있으며, 생산라인의 자동화로 원가 절감은 물론 균일한 품질의 제품을 생산하고 있습니다. 특히, 고압주입용 패카로서의 내구성과 저점도 수지에도 역류방지 기능이 탁월하며, 패킹 및 마감 작업이 용이하도록 설계되어 있습니다.



# COMPONENT PACKER

SINGLE-LINE PUMP

DOUBLE-LINE PUMP

ACRYLIC RESIN PUMP

PACKER

CHEMICAL

## INJECTION PACKER



| Variant     | Unit | No    |
|-------------|------|-------|
| Ø6mm x 45mm | indv | 60045 |

- ◆ APPLICABLE PUMP MODEL
  - Less than 15cm of concrete thickness

## INJECTION PACKER



| Variant     | Unit | No    |
|-------------|------|-------|
| Ø8mm x 55mm | indv | 80055 |

- ◆ ADVANTAGE/INFORMATION
  - Less than 30cm of concrete thickness

## INJECTION PACKER



| Variant      | Unit | No    |
|--------------|------|-------|
| Ø10mm x 60mm | indv | 10060 |

- ◆ ADVANTAGE/INFORMATION
  - Less than 50cm of concrete thickness

## INJECTION PACKER



| Variant      | Unit | No    |
|--------------|------|-------|
| Ø13mm x 70mm | indv | 13070 |

- ◆ ADVANTAGE/INFORMATION
  - Less than 50cm of concrete thickness

## INJECTION PACKER



| Variant       | Unit | No    |
|---------------|------|-------|
| Ø10mm x 100mm | indv | 10100 |
| Ø10mm x 150mm | indv | 10150 |
| Ø10mm x 200mm | indv | 10200 |

- ◆ ADVANTAGE/INFORMATION
  - More than 60cm of concrete thickness

## INJECTION ALUMINIUM PACKER



| Variant                            | Unit | No    |
|------------------------------------|------|-------|
| Ø13mm x 100mm clamping rubber 30mm | 100  | 13100 |
| Ø13mm x 130mm clamping rubber 30mm | 100  | 13130 |
| Ø13mm x 150mm clamping rubber 40mm | 100  | 13150 |
| Ø13mm x 200mm clamping rubber 40mm | indv | 13200 |
| Ø13mm x 250mm clamping rubber 40mm | indv | 13250 |
| Ø13mm x 300mm clamping rubber 40mm | indv | 13300 |
| Ø13mm x 400mm clamping rubber 40mm | indv | 13400 |
| Ø13mm x 500mm clamping rubber 40mm | indv | 13500 |
| Ø13mm x 600mm clamping rubber 40mm | indv | 13600 |

- ◆ ADVANTAGE/INFORMATION
  - Head Nipple M6
  - Free passage Ø2.0mm



# COMPONENT PACKER

## ● INJECTION ALUMINIUM PACKER



| Variant                            | Unit | No    |
|------------------------------------|------|-------|
| Ø13mm x 100mm clamping rubber 30mm | 100  | 33100 |
| Ø13mm x 130mm clamping rubber 30mm | 100  | 33130 |
| Ø13mm x 150mm clamping rubber 40mm | 100  | 33150 |
| Ø13mm x 200mm clamping rubber 40mm | indv | 33200 |

### ◆ ADVANTAGE/INFORMATION

- External Thread M1/8"
- Free passage Ø2.0 mm

## ● INJECTION ALUMINIUM PACKER



| Variant                            | Unit | No    |
|------------------------------------|------|-------|
| Ø13mm x 100mm clamping rubber 30mm | 100  | 53100 |
| Ø13mm x 130mm clamping rubber 30mm | 100  | 53130 |
| Ø13mm x 150mm clamping rubber 40mm | 100  | 53150 |
| Ø13mm x 200mm clamping rubber 40mm | indv | 53200 |

### ◆ ADVANTAGE/INFORMATION

- External Thread M10x1
- Free passage Ø2.0 mm

## ● INJECTION ALUMINIUM PACKER

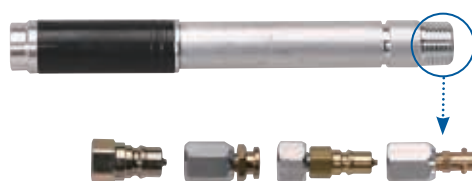


| Variant                            | Unit | No    |
|------------------------------------|------|-------|
| Ø16mm x 150mm clamping rubber 40mm | 100  | 16150 |
| Ø16mm x 200mm clamping rubber 40mm | indv | 16200 |
| Ø16mm x 250mm clamping rubber 40mm | indv | 16250 |
| Ø16mm x 300mm clamping rubber 40mm | indv | 16300 |
| Ø16mm x 400mm clamping rubber 40mm | indv | 16400 |
| Ø16mm x 500mm clamping rubber 40mm | indv | 16500 |
| Ø16mm x 600mm clamping rubber 40mm | indv | 16600 |

### ◆ ADVANTAGE/INFORMATION

- Head Nipple M6
- Free passage Ø5mm

## ● INJECTION ALUMINIUM PACKER



| Variant                            | Unit | No    |
|------------------------------------|------|-------|
| Ø16mm x 130mm clamping rubber 40mm | 100  | 26130 |
| Ø16mm x 150mm clamping rubber 40mm | 100  | 26150 |
| Ø16mm x 200mm clamping rubber 40mm | indv | 26200 |
| Ø16mm x 250mm clamping rubber 40mm | indv | 26250 |
| Ø16mm x 300mm clamping rubber 40mm | indv | 26300 |
| Ø16mm x 400mm clamping rubber 40mm | indv | 26400 |
| Ø16mm x 500mm clamping rubber 40mm | indv | 26500 |

### ◆ ADVANTAGE/INFORMATION

- External Thread M1/4"
- Free passage Ø2.0 mm



# COMPONENT PACKER

SINGLE-LINE PUMP

DOUBLE-LINE PUMP

ACRYLIC RESIN PUMP

PACKER

CHEMICAL

## GEL ALUMINIUM PACKER



| Variant       | Unit | No    |
|---------------|------|-------|
| Ø13mm x 300mm | indv | 63300 |
| Ø13mm x 580mm | indv | 63580 |

### ♦ ADVANTAGE/INFORMATION

- External Thread M1/8" coupler
- For homogeneous masonry and concrete

## GEL ALUMINIUM PACKER



| Variant       | Unit | No    |
|---------------|------|-------|
| Ø13mm x 300mm | indv | 73300 |
| Ø13mm x 580mm | indv | 73580 |

### ♦ ADVANTAGE/INFORMATION

- External Thread M1/8" coupler
- For hollow block masonry

## GEL ALUMINIUM PACKER



| Variant       | Unit | No    |
|---------------|------|-------|
| Ø13mm x 300mm | indv | 63306 |
| Ø13mm x 580mm | indv | 63586 |

### ♦ ADVANTAGE/INFORMATION

- Nead Nipple M6
- For homogeneous masonry and concrete

## GEL ALUMINIUM PACKER



| Variant       | Unit | No    |
|---------------|------|-------|
| Ø13mm x 300mm | indv | 73306 |
| Ø13mm x 580mm | indv | 73586 |

### ♦ ADVANTAGE/INFORMATION

- Nead Nipple M6
- For hollow block masonry

# COMPONENT PACKER

## GEL ALUMINIUM PACKER



| Variant       | Unit | No    |
|---------------|------|-------|
| Ø13mm x 300mm | indv | 83300 |
| Ø13mm x 580mm | indv | 83580 |

- ♦ ADVANTAGE/INFORMATION
  - External Thread M1/8" coupler
  - For hollow block masonry
  - For homogeneous masonry and concrete

## GEL ALUMINIUM PACKER



| Variant       | Unit | No    |
|---------------|------|-------|
| Ø13mm x 300mm | indv | 83306 |
| Ø13mm x 580mm | indv | 83586 |

- ♦ ADVANTAGE/INFORMATION
  - Nead Nipple M6
  - For hollow block masonry
  - For homogeneous masonry and concrete

## GEL ALUMINIUM PACKER



| Variant       | Unit | No    |
|---------------|------|-------|
| Ø16mm x 300mm | indv | 46300 |
| Ø16mm x 580mm | indv | 46580 |

- ♦ ADVANTAGE/INFORMATION
  - External Thread M1/4" coupler
  - For hollow block masonry

## GEL ALUMINIUM PACKER



| Variant       | Unit | No    |
|---------------|------|-------|
| Ø16mm x 300mm | indv | 56300 |
| Ø16mm x 580mm | indv | 56580 |

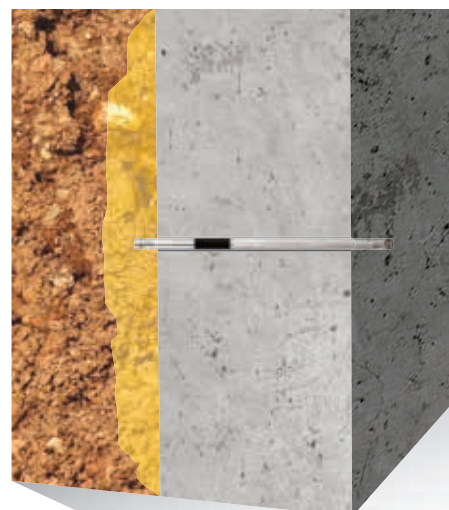
- ♦ ADVANTAGE/INFORMATION
  - External Thread M1/4" coupler
  - For hollow block masonry

## GEL ALUMINIUM PACKER



| Variant       | Unit | No    |
|---------------|------|-------|
| Ø16mm x 300mm | indv | 66300 |
| Ø16mm x 580mm | indv | 66580 |

- ♦ ADVANTAGE/INFORMATION
  - External Thread M1/4" coupler
  - For hollow block masonry
  - For homogeneous masonry and concrete



# COMPONENT PACKER

SINGLE-LINE PUMP

DOUBLE-LINE PUMP

ACRYLIC RESIN PUMP

PACKER

CHEMICAL

## JET PIN ALUMINIUM PACKER



Injection pipe Ø7mm x 310mm

Injection pipe Ø7mm x 780mm

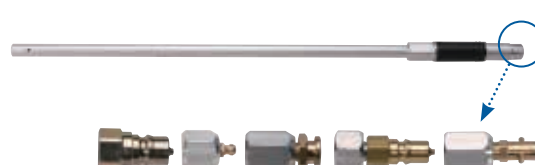
End piece with cross boreholes Ø2mm(4 x 90° offset)

| Variant       | Unit | No    |
|---------------|------|-------|
| Ø13mm x 380mm | indv | 93380 |
| Ø13mm x 850mm | indv | 93850 |

### ♦ ADVANTAGE/INFORMATION

- External Thread M1/8" coupler

## JET PIN ALUMINIUM PACKER



Injection pipe Ø10mm x 300mm

Injection pipe Ø10mm x 770mm

End piece with cross boreholes Ø2.6mm(4 x 90° offset)

| Variant       | Unit | No    |
|---------------|------|-------|
| Ø16mm x 380mm | indv | 76380 |
| Ø16mm x 850mm | indv | 76850 |

### ♦ ADVANTAGE/INFORMATION

- External Thread M1/4" coupler

## JET PIN ALUMINIUM PACKER



Injection pipe Ø7mm x 310mm

Injection pipe Ø7mm x 780mm

End piece with cross boreholes Ø2mm(4 x 90° offset)

| Variant       | Unit | No    |
|---------------|------|-------|
| Ø13mm x 380mm | indv | 93386 |
| Ø13mm x 850mm | indv | 93856 |

### ♦ ADVANTAGE/INFORMATION

- External Thread M1/8" coupler

## 1/8 COUPLER



| Variant                      | Unit | No    |
|------------------------------|------|-------|
| Brass 1/8" coupler           | indv | 33101 |
| Brass 1/4" coupler           | indv | 36151 |
| Stainless Steel 1/8" coupler | indv | 33102 |
| Stainless Steel 1/4" coupler | indv | 36152 |

### ♦ ADVANTAGE/INFORMATION

- Brass 1/8 coupler
- Maximum usable pressure 51kgf/cm<sup>2</sup>
- Internal pressure 76kgf/cm<sup>2</sup>
- Connect torque 51kgf/cm<sup>2</sup>
- Stainless Steel 1/8 coupler
- Maximum usable pressure 76kgf/cm<sup>2</sup>
- Internal pressure 102kgf/cm<sup>2</sup>
- Connect torque 92 kgf/cm<sup>2</sup>

# COMPONENT PACKER

## ● GALVANIZED CHROME MOLYBDENUM STEEL 1/4 COUPLER



| Variant      | Unit | No    |
|--------------|------|-------|
| 1/4" coupler | indv | 36153 |

### ◆ ADVANTAGE/INFORMATION

- Maximum usable pressure 210kgf/cm<sup>2</sup>
- Internal pressure 315kgf/cm<sup>2</sup>
- Connect torque 286kgf/cm<sup>2</sup>

## ● ALUMINIUM REDUCER COPLER



| Variant                   | Unit | No    |
|---------------------------|------|-------|
| PT 1/8" x PT 1/4" Reducer | indv | 73301 |

## ● ALUMINIUM BRASS M6 NIPPLE



| Variant          | Unit | No    |
|------------------|------|-------|
| 1/4" x M6 Nipple | indv | 26151 |

## ● ALUMINIUM BRASS BUTTON NIPPLE



| Variant            | Unit | No    |
|--------------------|------|-------|
| 1/8" button nipple | indv | 23101 |

## ● ALUMINIUM BRASS BUTTON NIPPLE



| Variant            | Unit | No    |
|--------------------|------|-------|
| 1/4" button nipple | indv | 16151 |

## ● ALUMINIUM BRASS COPLER



| Variant                 | Unit | No    |
|-------------------------|------|-------|
| PT 1/4" * PT1/8" COPLER | indv | 16152 |

# POLYURETHANE FOAM RESIN GROUTING METHOD

SINGLE-LINE PUMP

DOUBLE-LINE PUMP

ACRYLIC RESIN PUMP

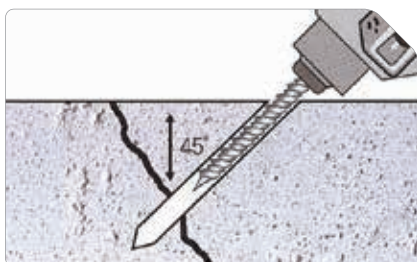
PACKER

CHEMICAL



## ◆ CRACK AND LEAKAGE CONDITION INSPECTION

Check the process procedure after finding the thickness, width and depth of crack and leakage condition of the structure.



## ◆ DRILLING OPERATION

Drill directly into crack section if the thickness of concrete is thinner than 10cm. For the thickness of 10cm~50cm, drill it with 45° degree angle by keeping a distance of 1/5 of concrete thickness. Make sure it penetrates the crack section. If the thickness is over than 50cm, keep the distance of 20cm~30cm and drill it with 45 degree angle until it penetrates crack section. And keep drilling by maintaining the fixed interval. (5 holes per 1 meter. Drill it in zigzags)



## ◆ PACKER INSTALLATION

Clean the inside of drilled holes with compressor. Make sure that rubber sleeve of packer and cutting line of tightening nut should be put into the inside of concrete surface when installing. Tighten the packer completely by using the T-box. (Packer might be damaged if you tighten it too strongly)



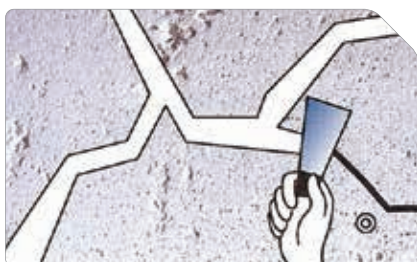
## ◆ INJECTION OPERATION

Inject the urethane water stopping material by using the high pressure device or grease gun. Maintain the initial injection pressure as around 40kg/cm and increase the pressure by each 10kg/cm gradually until the water stopping material flows out from crack section. Water will come out from the crack section first and then water stopping foaming agent and then water stopping liquid at last. If the water stopping material that is not foamed comes from the crack section, then move to next packer for injection.



## ◆ PACKER REMOVING OPERATION

Remove and break the packer by using vise pliers or hammer as a tool. If there is still a wet section, then inject the water stopping material again.



## ◆ FINISHING OPERATION

Remove the water stopping material that is remained on the crack section. Spreading with the elastic sealing material.

# INJECTION CAPSULE

## DELIVERY RANGE

Injection Capsule specialized to low pressure injection construction system, can inject epoxy to small cracks at large space simultaneously. During injection, you can check how much chemical is being injected by graduation of Injection Capsule . Is's one of the most popular systems of crack repair.

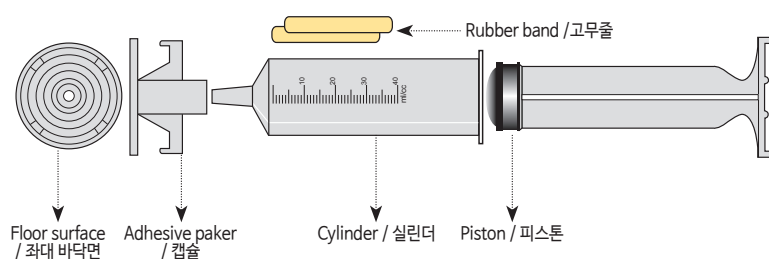


## TECHNICAL DATE

|                           |                         |
|---------------------------|-------------------------|
| Capsule capacity          | 40 cc                   |
| Bench diameter            | Ø49                     |
| Max pressure              | 2.5 kgf/cm <sup>2</sup> |
| Max length                | 210 mm                  |
| Min length                | 145 mm                  |
| Weight                    | 35.7 g                  |
| Surface adhesive strength | 38 kgf                  |

## DESCRIPTION

- EPOXY RESIN





# COMPONENT CAPSULE

SINGLE-LINE PUMP

DOUBLE-LINE PUMP

ACRYLIC RESIN PUMP

PACKER

CHEMICAL

## ● CAPSULE



| Variant               | Unit | No    |
|-----------------------|------|-------|
| Capsule capacity 40CC | indv | 70040 |

## ● ADHESIVE PAKER



| Variant            | Unit | No    |
|--------------------|------|-------|
| Banch diameter Ø49 | indv | 70049 |

## ● KLEBFIX

- Tool to hold adhesive packer to apply the adhesive (Insulating material, e.g. PUR adhesive or EP adhesive)

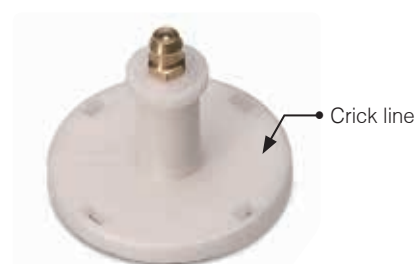


| Variant | Unit | No    |
|---------|------|-------|
|         | indv | 70100 |

### ◆ ADVANTAGE/INFORMATION

- The exactly required amount of adhesive (Insulating material, approx. 6g) is applied on the adherene
- Access to the crack is maintained

## ● ADHESIVE PAKER

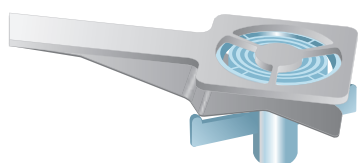


| Variant            | Unit | No    |
|--------------------|------|-------|
| Banch diameter Ø49 | indv | 70050 |

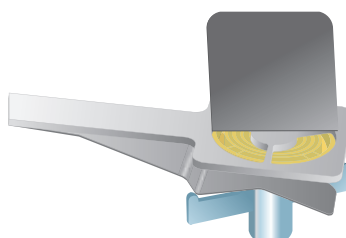
### ◆ ADVANTAGE/INFORMATION

- Height 38mm
- head Nipple M6

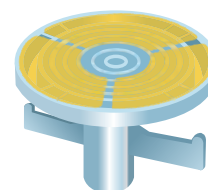
## DESCRIPTION "KLEBIFIX"



- Insert adhesive packer in "Klebfix"



- Apply adhesive(sealing material)



- Adhesive surface is prepared, access to crack is maintained

# INJECTION CAPSULE SYSTEM



## ◆ INSPECTION OF CRACKS AND SURFACE TREATMENT

Work process should be determined by checking in advance the condition, width, depth of cracks.

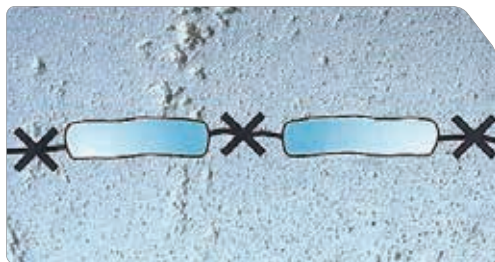
Remove dust or dirt from the area to be sealed with a wire brush and remove dirt from the surface by using a detergent like soap or thinner if any oily substance still remains



## ◆ DETERMINE THE AREA WHERE TO PLACE ADHESIVE PAKER

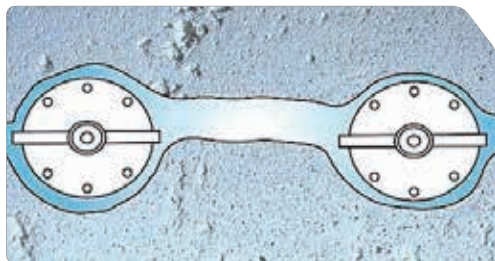
The adhesive paker should be placed in an interval of 15cm~20cm depending on the width of cracks.

Usually 20cm is the most appropriate distance between the washers. You should put 5~6 washers for the repairing of cracks of one meter length.



## ◆ SEALING OF CRACKS

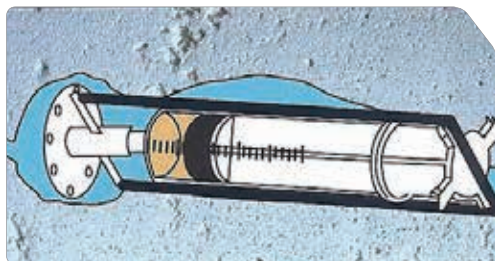
You should seal cracks with epoxy sealing material, 1mm thick and 30mm wide, except for areas where to put the washer to prevent the injected epoxy from leaking. If sealing is not properly done on cracks, loss of epoxy resin can occur due to the damage of sealing when injection device is installed. Therefore, you should pay special attention while you work.



## ◆ SETTING THE ADHESIVE PAKER

You should set the adhesive paker with epoxy sealing material on the places make in advance.

Stop the work until the sealing material is completely hardened. (It takes about 24 hours at the normal temperature of 25°C)



## ◆ INJECTION OF EPOXY

Fill the syringe injector with 30cc of epoxy grouting material and connect rubber bands with the washers. Place all the syringe injectors on the washers in the same way.

when the grouting material of a syringe injector is consumed before tack free, you have to replace the syringe injector promptly with a syringe injector newly charge and continue injection.



## ◆ FINISHING WORK

After confirming that the grouting material is hardened, remove the syringe injector and washer and grind the surface cleanly with a hand grinder and finish, if necessary, with crack cover material or paint, (You can do the finishing work after about one day in summer, and about two days in winter, which is required for initial hardening)

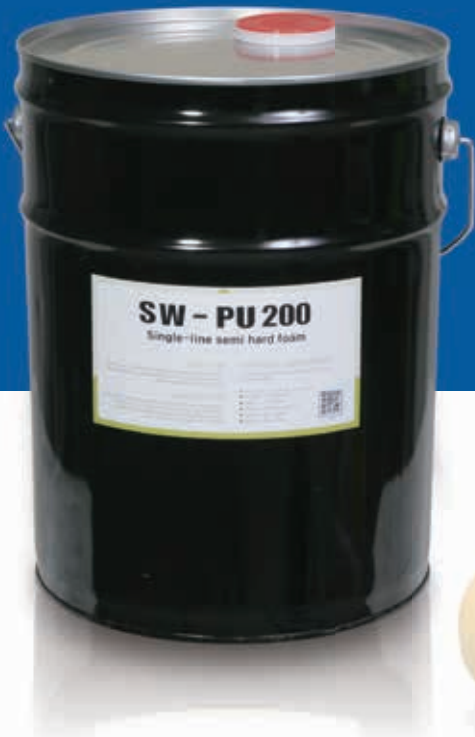




# *Chemical*

# SINGLE-LINE

## ONE-COMPONENT TYPE



## SW-PU 200

SW-PU 200 is one liquid type radius firing urethane having strong hydropobic type, Through injecting and putting leakage part of concrete and reacting with water, It is the product forming water firing stage of closed cell structure closing off from Influx water. As free-solvent type having no stimulating offen-sive smell, It is a product having quick response, no shrinking change, and excellent permeable.

SW-PU 200은 소수성(Hydrophobic type)이 강한 1액형 반경질 발포우레탄으로 콘크리트 균열누수부위에 주입, 충전되어 물과 반응하여 close cell 구조의 수발포층을 형성 유입수를 차단하는 제품입니다. 자극적인 취기가 없는 무용제 타입으로 빠른 반응성과 수축변형이 없고 균열내부의 침투성과 지수성이 우수한 제품입니다.

### ◆ Use / 용도

- Leakage part of ceil joint in building, Co-packing of inside of structure, leakage part of all concrete.
- 건물의 천정, 벽체, 조인트 누수부위, 구조물 내부의 공동 충전

### ◆ Physical properties / 기본 물성

|  |                         |
|--|-------------------------|
| Viscosity<br>점도                          | 450~600mPa.s            |
| Specific gravity<br>비중                   | 1.12~1.2                |
| Foaming magnification<br>발포배율            | above 15times<br>15배 이상 |
| Foaming time<br>발포시간                     | 300~400s                |
| Seal shear adhesion strength<br>인장전단점착강도 | 45N/mm <sup>2</sup>     |

### ◆ Foaming magnification and forming time dependent on the ratio liqued/water / 약액과 물의 혼합비에 따른 결과치

|                                     |            |          |          |          |
|-------------------------------------|------------|----------|----------|----------|
| Ratio (liquid : Water)<br>혼합비(약액:물) | 5:1        | 10:1     | 15:1     | 20:1     |
| Foaming magnification<br>발포배율       | 8~11       | 16~20    | 13~16    | 10~14    |
| Foaming time<br>발포시간                | above 600s | 300~350s | 280~300s | 330~370s |

# SINGLE-LINE

## ONE-COMPONENT TYPE



### ◆ Use / 용도

- Leakage part of ceil joint in building, Co-packing of inside of structure, Leakage part of all concrete.
- 건물의 천정, 벽체, 조인트 누수부위, 구조물 내부의 공동 충전

## SW-PU 300

SW-PU 300 is two liquid type(raw liquid 10: accelerator 1) ratio firing urethane, Through injecting and putting leakage part of concrete and reacting with water, It is the product forming same thing as SW-PU 200 and closing off from Influx water. In order to regulate reacting time at the site in accordance with condition characteristics(ex: humidity, temperature, elution amount), It is the product made for mixing and using separate accelerator.

SW-PU300은 SW-PU200과 동일한 폼을 형성하여 유입수를 차단하며 현장의 제반특성(예: 습도, 온도, 용출수량 등)에 맞게 현장에서 반응시간을 조절하기 위하여 별도의 촉진제를 혼합하여 사용하도록 개발된 제품입니다. (SW-PU 300도 주문 생산합니다.)

### ◆ Physical properties / 기본 물성

#### Liquid / 원액

|   |                         |
|---|-------------------------|
| Viscosity<br>점 도                            | 450~600mPa.s            |
| Specific gravity<br>비 중                     | 1.12~1.2                |
| Foaming magnification<br>발포배율               | above 15times<br>15배 이상 |
| Foaming time<br>발포시간                        | 350~450s                |
| Seal shear adhesion strength<br>인장전단접착강도    | 45N/mm <sup>2</sup>     |
| Ratio (liquid : Accelerator)<br>혼합비(약액:촉진제) | 10:1                    |

#### Accelerator / 촉진제

|                         |           |
|-------------------------|-----------|
| Viscosity<br>점 도        | 1~10mPa.s |
| Specific gravity<br>비 중 | 0.95~1    |

- ◆ Foaming time of mixing liquid (dependant on the ratio liquid/accelerator) reacts with water. (Ratio = Mixing liquid/water 10:1) / 원액과 촉진제의 혼합비에 따른 물과의 반응시 발포종료 시간 (혼합액과 물의 비율은 10:1)

|   |          |          |          |            |
|---|----------|----------|----------|------------|
| Ratio (liquid : accelerator)<br>혼합비(약액:촉진제) | 2:1      | 5:1      | 10:1     | 15:1       |
| Foaming time<br>발포시간                        | 150~200s | 320~340s | 400~430s | above 600s |



# SINGLE-LINE

## ONE-COMPONENT TYPE



### SW-PU 500(PU V)

SW-PU500 is one liquid type soft firing urethane having strong hydrophilic type, Through injecting and putting leakage part of structure joint having vibration, It is the product forming water firing stage of open cell structure, keeping elasticity and closing off from Influx water. Owing to forming high-elasticity at the small amount of water and forming quick response partial gel at the large amount of water, it is the excellent product having no shrinking change.

SW-PU500은 친수성(Hydrophilic type)이 강한 1액형 연질 발포우레탄으로 진동이 있는 구조물의 조인트 누수 부위등에 주입, 충전되어 고탄성의 open cell구조의 수발포층을 형성하여 신축성을 유지하며 유입수를 차단하는 제품입니다. 소량의 물에서는 고탄성의 폼을 형성하고 다량의 물에서는 빠른 반응성의 부분적 겔폼을 형성하며 수축변형이 없는 우수한 제품입니다.

#### ◆ Use / 용도

- Leakage part of structure having vibration, The rear disparity of structure
- 진동이 있는 구조물의 균열누수부위, 구조물의 배면차수용

#### ◆ Physical properties / 기본 물성

|                               |               |
|-------------------------------|---------------|
| Viscosity<br>점도               | 800~1300mPa.s |
| Specific gravity<br>비중        | 1.08~1.2      |
| Foaming magnification<br>발포배율 | 6~15 Times    |
| Foaming time<br>발포시간          | 90~200s       |

#### ◆ Foaming magnification and forming time dependent on the ratio liqued/water / 약액과 물의 혼합비에 따른 결과치

| Ratio (liquid : Water)<br>혼합비(약액:물) | 5:1    | 10:1     | 15:1    | 20:1     |
|-------------------------------------|--------|----------|---------|----------|
| Foaming magnification<br>발포배율       | Gel    | 5~10     | 5~10    | 5~10     |
| Foaming time<br>발포시간                | 20~60s | 160~190s | 90~120s | 160~190s |



# DOUBLE-LINE

## TWO-COMPONENT TYPE



### SW-PU 700

SW-PU 700 is main element having polyol and hardening agent having MDI element, It is two liquid type hard firing urethane. Through injecting and packing soil of weak base, It is the base rock solid product forming high-strength firing solid, operating ground stabilization regulating gel time, and closing off a large amount of influx water. It is the excellent product having no shrinking change.

SW-PU 700은 주로 폴리올계 성분의 주제와 MDI계 성분의 경화제로 2액형 타입의 경질 발포우레탄으로 연약 지반의 토양 속에 주입, 충전되어 고강도의 발포고결체를 형성하여 지반안전화 성능과 겔타임의 조절로 다량의 유출수도 차단할 수 있는 암반고결용 제품이며 무용제 타입의 기계적강도가 우수한 제품입니다.

#### ◆ Use / 용도

- Stabilization of weak ground.

#### ◆ Physical properties / 기본 물성

|  |                                |
|--|--------------------------------|
| Viscosity<br>점 도                                       | 150~ 200mPa.s                  |
| Foaming magnification<br>발포배율                          | 8~18 Times                     |
| Foaming time<br>발포시간                                   | 1~5min                         |
| Bending strength<br>굽힘 강도                              | 55-80kg/cm <sup>2</sup>        |
| Pressing strength<br>압축강도                              | 40-65kg/cm <sup>2</sup>        |
| Ratio {Resin(A) : Hardener(B)}<br>혼합비 {주제(A) : 경화제(B)} | 100:100 , 100:250<br>(2 sorts) |

# DOUBLE-LINE

## TWO-COMPONENT TYPE

### SW-PU 900

SW-PU 900 is main element having polyol and hardening agent having MDI element, It is two liquid type hard firing urethane. It is the product forming pure high-strength urethane solid at dry process breakage part and forming partial firing solid at wet process breakage part. Owing to having superior technological feature to concrete, it is the product having excellent repair and reinforcement and being able to reinforce and waterproof at the same time.

SW-PU 900은 폴리올계 성분의 주제와 MDI계 성분의 경화제로 2액형 타입의 고강도 우레탄으로 건식균열 부위에서는 순수 고강도우레탄 고결체를 형성하고 습식균열부위에서는 일부 발포고결체를 형성하는 제품입니다. 콘크리트보다 우수한 기계적 물성을 지니고있어대형콘크리트 구조물의건식및습식균열부위에서지수와보강을동시에할 수 있는 보수 보강력이 뛰어난 제품입니다.



#### ◆ Use / 용도

- Drying/Wetting process, Leakage part of concrete structure.  
Repair and reinforcement of leakage.
- 건식 및 습식 콘크리트 구조물의 누수부위 균열의 보수보강용

#### ◆ Physical properties / 기본 물성

|   |   |
|---|---|
| Viscosity<br>점 도  | 150~250mPa.s  |
| Ratio {Resin (A) :<br>Hardener (B)}<br>혼합비 {주제 (A) : 강화제 (B)} | 100 : 100   |
| Pressing strength<br>압축강도                                     | 1,150kg/cm <sup>2</sup>                                     |
| Bending strength<br>굽힘강도                                      | 677kg/cm <sup>2</sup>                                       |
| Seal strength<br>인장강도   | 468kg/cm <sup>2</sup>                                       |
| Seal shearing adhesion strenght<br>인장전단접착강도                   | 72kg/cm <sup>2</sup>  |
| Hardening time<br>경화시간  | less than 5min, above 20min (2 sorts)<br>5분 이내, 20분 이상 (2종) |

# DOUBLE-LINE

## TWO-COMPONENT TYPE

### SW-PU 900 PLUS

SW-PU 900 PLUS is main element having polyol and hardening agent having changeable MDI element, it is two liquid type high-elasticity firing urethane. Through injecting breakage part of structure having vibration problem and joint, it is the product having excellent elasticity and adhesion and used as repairing of break-age part of structure flowing part.

SW-PU 900 PLUS는 폴리올계 성분의 주제와 변성 MDI 계 성분의 경화제로 2액형 타입의 고탄성 우레탄으로 진동이 있는 구조물의 균열부위 및 조인트에 주입하여 우수한 신축성과 접착력으로 구조물 유동부위의 균열보수에 사용되는 제품입니다.



#### ◆ Use / 용도

- Breakage part of concrete structure having problem of vibration, joint injection and repair
- 진동이 있는 구조물의 균열부위, 조인트 주입 보수용

#### ◆ Physical properties / 기본 물성

|   |              |
|---|--------------|
| Viscosity<br>점 도                                      | 300~400mPa.s |
| Elongation<br>신장률                                     | 230%         |
| Ratio {Resin(A) : Hardener(B)}<br>혼합비{주제(A) : 경화제(B)} | 100:100      |
| Hardening time<br>경화시간                                | 3~30 min     |

# EPOXY-LINE

## TWO-COMPONENT

### DRY-SURFACE SUPER LOW VISCOSITY

### 건식 초저점도 주입제

## SW-EP 100

SW-EP 100 is an ultra low viscosity epoxy resin that can be injected into even minute cracks that are difficult to inject. With strong adhesion and durability, without volatile solvents, after hardening (during) it does not shrink at all perfect crack repair is possible.

SW-EP 100은 주입이 어려운 미세한 균열에도 주입이 가능하도록 만든 초저점도 에폭시수지입니다. 강한 접착력과 내구성을 갖고 있으면서도 휘발성 용제를 함유하고 있지 않으므로, 경화 후에도 전혀 수축을 하지 않으므로 완벽한 균열 보수가 가능하도록 하였습니다.



#### ◆ Use / 용도

- Possible to the end of hairline cracks(0.3mm below) of concrete
- Grouting reinforcement of aged, weakened parts of concrete.
- 콘크리트의 미세한 균열(0.3mm이하) 주입
- 콘크리트 노화 취약부 침투, 보강용

#### ◆ PROPERTIES / 특성

- Super-low Viscosity & High strength
- Non-shrinking & harden
- Offers an outstanding durability by preventing corrosion.
- 초저점도 고강도
- 무수축 완전경화
- 내수, 내약품성 우수

| Package<br>포장단위 | Main Component<br>주제 | Hardening Component<br>경화제 |
|-----------------|----------------------|----------------------------|
| 12Kg SET        | 9Kg                  | 3Kg                        |

#### ◆ Physical properties / 기본 물성

|                             |  |
|-----------------------------|--|
| Exterior Appearance / 외관    | Lemon yellow Liquid / 담황색 투명색  |
| Principal constituent / 주성분 | Epoxy, Polyamide / 에폭시수지, 폴리아마이드   |
| Specific gravity / 비중       | 1.18~1.10  |
| Mixing Rate / 배합비           | Main Component:Hardening Component = 3:1 (Weight ratio)/<br>주제:경화제 = 3:1 (중량비) |
| Pot Life(min) / 가사시간        | 40min(분)/300g. 20℃   |
| Viscosity/ 점도               | 120CPS/20℃   |

# EPOXY-LINE

## TWO-COMPONENT

### DRY-SURFACE LOW VISCOSITY

### 건식 저점도 주입제

## SW-EP 200

SW-EP 200 is a low-viscosity epoxy resin widely used for bridges, dams, column beams and slabs for injection small cracks in concrete structures.

With strong adhesion and durability, without volatile solvents, after hardening (during) it does not shrink at all perfect crack repair is possible.

SW-EP 200은 콘크리트 구조물의 소균열 부위의 주입용으로 교량, 댐, 기둥 보, 슬라브등의 광범위 하게 이용되고 있는 저점도 에폭시수지입니다. 강한 접착력과 내구성을 갖고 있으면서도 휘발성 용제를 함유하고 있지 않으므로, 경화 후에도 전혀 수축을 하지 않으므로 완벽한 균열 보수가 가능하도록 하였습니다



#### ◆ Use / 용도

- Possible to the end of hairline cracks(0.5mm below) of concrete
- Marhanical base weight part
- Floor surface excitation

- 콘크리트의 미세한 균열(0.5mm이하) 주입
- 기계 기초 하중부위
- 바닥면 들뜸 부위

#### ◆ PROPERTIES / 특성

- low Viscosity & High strength
- Non-shrinking & harden
- Offers an outstanding durability by preventing corrosion.

- 저점도 고강도
- 무수축 완전경화
- 내수, 내약품성 우수

| Package<br>포장단위 | Main Component<br>주제 | Hardening Component<br>경화제 |
|-----------------|----------------------|----------------------------|
| 15Kg SET        | 10Kg                 | 5Kg                        |

#### ◆ Physical properties / 기본 물성

|                             |   |
|-----------------------------|---|
| Exterior Appearance / 외관    | Lemon yellow Liquid / 담황색 투명액   |
| Principal constituent / 주성분 | Epoxy, Polyamide / 에폭시수지, 폴리아마이드  |
| Specific gravity / 비중       | 1.1   |
| Mixing Rate / 배합비           | Main Component:Hardening Component = 2:1 (Weight ratio) /<br>주제:경화제 = 2:1 (중량비) |
| Pot Life(min) / 가사시간        | 55min(분)/300g. 20℃  |
| Viscosity/ 점도               | 250CPS/20℃  |



# EPOXY-LINE

## TWO-COMPONENT

### DRY-SURFACE MEDIUM VISCOSITY

### 건식 중점도 주입제

## SW-EP 300

SW-EP 300 is a low-viscosity epoxy resin which is used for injection of the middle cracks of concrete structures.

With strong adhesion and durability, without volatile solvents, after hardening (during) it does not shrink at all perfect crack repair is possible.

SW-EP 300은 콘크리트 구조물의 중균열 부위의 주입용으로 이용되고 있는 저점도 에폭시수지입니다. 강한 접착력과 내구성을 갖고 있으면서도 휘발성 용제를 함유하고 있지 않으므로, 경화 후에도 전혀 수축을 하지 않으므로 완벽한 균열 보수가 가능하도록 하였습니다.



#### ◆ Use / 용도

- Possible to the end of hairline cracks(1.0mm below) of concrete
- Steel for reinforcement
- Floor surface excitation part
- 콘크리트의 균열(1.0mm이하) 주입
- 철판 보강용
- 바닥면 들뜸 부위

#### ◆ PROPERTIES / 특성

- Excellent physical properties and durability
- Non-shrinking & harden
- Offers an outstanding durability by preventing corrosion.
- 우수한 물리적 성질과 내구성
- 무수축 완전경화
- 내수, 내약품성 우수

| Package<br>포장단위 | Main Component<br>주제 | Hardening Component<br>경화제 |
|-----------------|----------------------|----------------------------|
| 15Kg SET        | 10Kg                 | 5Kg                        |

#### ◆ Physical properties / 기본 물성

|                             |  |
|-----------------------------|--|
| Exterior Appearance / 외관    | Lemon yellow Liquid / 담황색 투명색  |
| Principal constituent / 주성분 | Epoxy, Polyamide / 에폭시수지, 폴리아마이드   |
| Specific gravity / 비중       | 1.15   |
| Mixing Rate / 배합비           | Main Component:Hardening Component = 2:1 (Weight ratio)/<br>주제:경화제 = 2:1 (중량비) |
| Pot Life(min) / 가사시간        | 55min(분)/300g. 20℃   |
| Viscosity/ 점도               | 500CPS/20℃   |



# EPOXY-LINE

## TWO-COMPONENT

### DRY-SURFACE HIGH VISCOSITY

### 건식 고점도 주입제

## SW-EP 400

SW-EP 400 is a highly-viscose epoxy resin for repairing cracks, which has a new viscosity characteristics for injection of large cracks in concrete structures.

With strong adhesion and durability, without volatile solvents, after hardening (during) it does not shrink at all perfect crack repair is possible

SW-EP 400은 콘크리트 구조물의 대균열 부위의 주입용으로 새로운 점도 특성을 갖고 있는 대크랙 보수용 고점도에폭시수지입니다. 강한 점착력과 내구성을 갖고 있으면서도 휘발성 용제를 함유하고 있지 않음으로, 경화 후에도 전혀 수축을 하지 않음으로 완벽한 균열 보수가 가능하도록 하였습니다.



#### ◆ Use / 용도

- Big crack & Injected moving crack
- V-cutting part & for high strenght sealing
- Concave and convex part adjusting & pinhole fill in
- 대균열 및 유동균열 주입
- V 커팅 부위 고강도 실링용
- 요철부위 조정, 핀홀 메꾸기

#### ◆ PROPERTIES / 특성

- No running down even vertical direction
- Non-shrinking & harden
- Offers an outstanding durability by preventing corrosion.
- 수직방향 균열에도 흘러내리지 않음
- 무수축 완전경화
- 내수, 내약품성 우수

| Package<br>포장단위 | Main Component<br>주제 | Hardening Component<br>경화제 |
|-----------------|----------------------|----------------------------|
| 15Kg SET        | 10Kg                 | 5Kg                        |

#### ◆ Physical properties / 기본 물성

|                             |   |
|-----------------------------|---|
| Exterior Appearance / 외관    | Lemon yellow Liquid / 담황색 투명액   |
| Principal constituent / 주성분 | Epoxy, Polyamide / 에폭시수지, 폴리아마이드  |
| Specific gravity / 비중       | 1.15  |
| Mixing Rate / 배합비           | Main Component:Hardening Component = 2:1 (Weight ratio) /<br>주제:경화제 = 2:1 (중량비) |
| Pot Life(min) / 가사시간        | 60min(분)/300g. 20℃  |
| Viscosity/ 점도               | 구리스(마요네즈)성상   |

# EPOXY-LINE

## TWO-COMPONENT

### GROUTING FOR WET-SURFACE

### 습식 주입제

## SW-EP 500

SW-EP 500 is an epoxy resin which is injected into wet crack infusion repair work and shows excellent adhesion at the part where water is bored and is processed into low viscosity type and easy to inject.

With strong adhesion and durability, without volatile solvents, after hardening (during) it does not shrink at all perfect crack repair is possible.

SW-EP 500은 습윤 균열 주입 보수공사 주입용으로 물기가 배어있는 부위에 탁월한 접착력을 보이며 저점도 타입으로 가공되어 주입이 용이한 에폭시수지입니다. 휘발성 용제를 함유하고 있지 않음으로, 경화 후에도 전혀 수축을 하지 않음으로 완벽한 균열 보수가 가능하도록 하였습니다.



#### ◆ Use / 용도

- Underwater crack injection repair work
- Underground structures, water tank repair work
- 수중균열 주입 보수공사
- 지하구조물, 물탱크 보수공사

#### ◆ PROPERTIES / 특성

- Excellent wet condition adhesion
- Excellent underwater hardening
- Excellent adhesion to metals
- 습윤 접착성 우수
- 수중 경화성 우수
- 금속과의 접착성이 뛰어남

| Package<br>포장단위 | Main Component<br>주제 | Hardening Component<br>경화제 |
|-----------------|----------------------|----------------------------|
| 15Kg SET        | 10Kg                 | 5Kg                        |

#### ◆ Physical properties / 기본 물성

|                             |  |
|-----------------------------|--|
| Exterior Appearance / 외관    | Lemon yellow Liquid / 담황색 투명색  |
| Principal constituent / 주성분 | Epoxy, Polyamide / 에폭시수지, 폴리아마이드   |
| Specific gravity / 비중       | 1.1~1.3  |
| Mixing Rate / 배합비           | Main Component:Hardening Component = 2:1 (Weight ratio)/<br>주제:경화제 = 2:1 (중량비) |
| Pot Life(min) / 가사시간        | 60min(분)/300g. 20℃   |
| Viscosity/ 점도               | 250CPS/20℃   |

# EPOXY-LINE

## TWO-COMPONENT

### DRY TYPE SEALANT

### 건식 썰링제

## SW-EP 600

SW-EP 600 is a special formulated epoxy sealant that does not spill on vertical surfaces. It is widely used as a sealing when repairing cracks and it has excellent adhesion to concrete and metal, so it can repair damaged part of concrete, repair of exposed steel.

SW-EP 600은 특수 배합이 되어 수직면에서도 흘러내리지 않는 에폭시 썰링제로서 콘크리트, 금속에서 접착성이 우수하여 콘크리트의 손상된 부분, 노출된 철근의 보수, 균열보수시 썰링제로서 광범위하게 사용됩니다.



#### ◆ Use / 용도

- Crack part sealing work
- Washer attach
- Steel exposure part repair
- Concrete hurts part fill in

- 균열부위 썰링공사
- 좌대(washer)의 부착
- 철근 노출 부위의 보수
- 콘크리트 홈 파인곳 메꿈.

#### ◆ PROPERTIES / 특성

- Excellent adhesion con'c to meet metals
- Clay type, no running down
- Excellent for concrete work

- 콘크리트, 금속에서의 강한 접착력
- 점토형으로 흘러내림이 없음
- 작업성이 우수

| Package<br>포장단위 | Main Component<br>주제 | Hardening Component<br>경화제 |
|-----------------|----------------------|----------------------------|
| 15Kg SET        | 10Kg                 | 10Kg                       |

#### ◆ Physical properties / 기본 물성

|                             |   |
|-----------------------------|---|
| Exterior Appearance / 외관    | Lemon yellow Liquid / 담황색 투명액   |
| Principal constituent / 주성분 | Epoxy, Polyamide / 에폭시수지, 폴리아마이드  |
| Specific gravity / 비중       | 1.5   |
| Mixing Rate / 배합비           | Main Component:Hardening Component = 1:1 (Weight ratio) /<br>주제:경화제 = 1:1 (중량비) |
| Pot Life(min) / 가사시간        | 60min(분) / 20℃  |
| Viscosity/ 점도               | No vertical sag / 수직처짐 없음   |

# EPOXY-LINE

## TWO-COMPONENT

### WET TYPE SEALANT

### 습식 씰링제

## SW-EP 700

SW-EP 700 is a underwater adhesives that are fully cured even in places where moisture and water are generated and exhibits excellent adhesion.

It is widely used in civil engineering and construction fields as it allows for underwater adhesive that was never considered possible.

SW-EP 700은 습기와 물기가 발생하는 곳에서도 완전 경화되어 우수한 접착력을 발휘하는 수중 접착제, 종래에는 불가능하게 생각되었던 수중접착이 가능해짐으로써 토목 건축분야에서도 광범위하게 사용됩니다.



#### ◆ Use / 용도

- Wet condition adhesion work
- Wet condition joint work
- Underwater & wet condition surface sealing work
- Underwater & wet condition surface excellent adhesion
- 습윤접착공사
- 습윤줄눈작업
- 수중 및 습윤면 씰링보수
- 수중 양카볼트, 금속등의 접착

#### ◆ PROPERTIES / 특성

- Underwater & wet condition surface excellent adhesion
- Putty matiral of clay type condition
- Never hardening shrinkage
- 수중, 습윤면에서의 우수한 접착력
- 점토상태의 퍼티재
- 경화 수축이 전혀 없음

| Package<br>포장단위 | Main Component<br>주제 | Hardening Component<br>경화제 |
|-----------------|----------------------|----------------------------|
| 15Kg SET        | 10Kg                 | 5Kg                        |

#### ◆ Physical properties / 기본 물성

|                             |  |
|-----------------------------|--|
| Exterior Appearance / 외관    | Gray putty / 회색 퍼티   |
| Principal constituent / 주성분 | Epoxy, Polyamide / 에폭시수지, 폴리아마이드   |
| Specific gravity / 비중       | 1.1  |
| Mixing Rate / 배합비           | Main Component:Hardening Component = 2:1 (Weight ratio)/<br>주제:경화제 = 2:1 (중량비) |
| Pot Life(min) / 가사시간        | 60min(분)/20℃   |
| Viscosity/ 점도               | No vertical sag / 수직처짐 없음  |

# ACRYLIC RESIN

SINGLE-LINE PUMP

DOUBLE-LINE PUMP

ACRYLIC RESIN PUMP

PACKER

CHEMICAL



| Item / 항목               | 일반형 (AG600) A제/B제 Normal type   |
|-------------------------|---|
| Chief ingredient / 주성분  | ACRYLIC RESIN   |
| Mixed viscosity / 혼합점도  | 20 CP or less / 20CP 이하   |
| Mix proportioning / 배합비 | 100 : 100   |
| Hardener / 경화물          | Gel   |
| Use / 용도                | Back grouting of underground structures like subways and tunnels, and waterproof of joints. Leakage stop and back grouting of all buildings and civil structures<br>'지하철, 터널 지하구조물의 배면 그라우팅 및 조인트 부위 지수 건축, 토목 구조물의 누수 지수 및 배면 그라우팅 |

## FEATURES

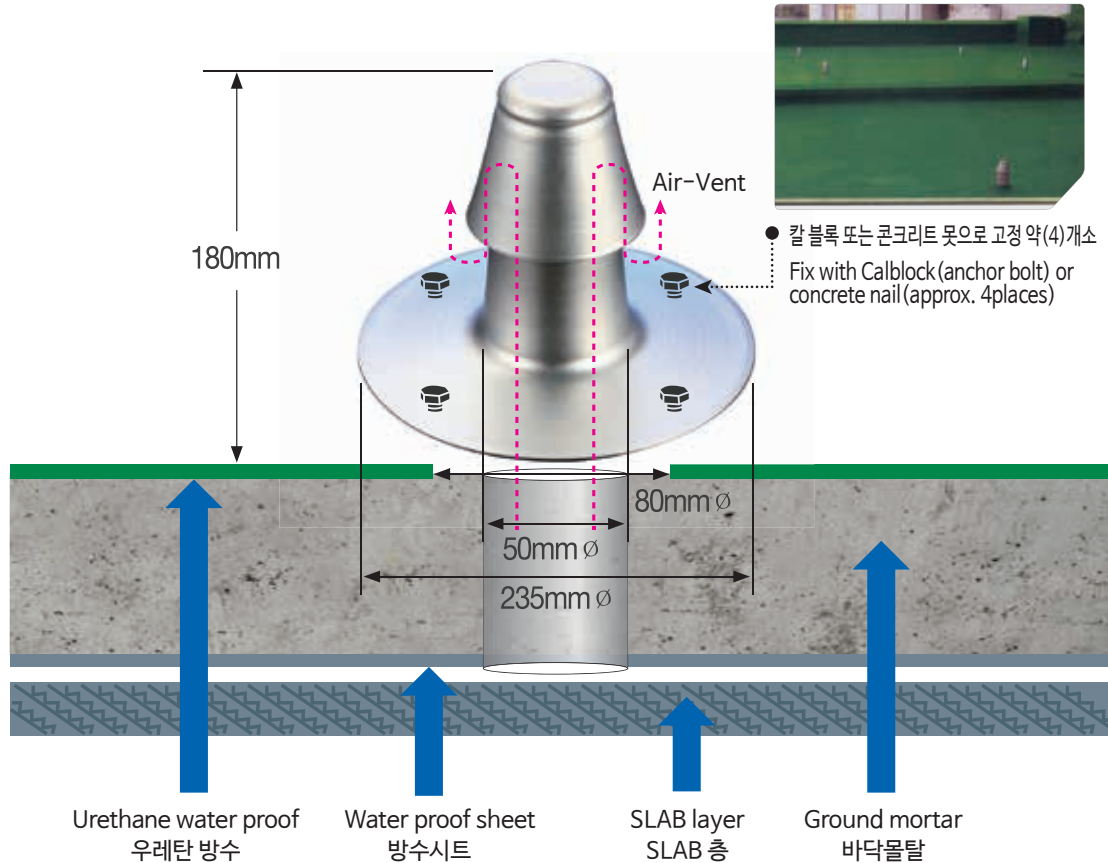
- It has very low viscosity so that it can penetrate into fine pore or soil easily.
- Wide range of hardening time control allows coping with various field conditions.
- It is not dissolved or leached in alkali or acid chemical and stable for any kind of chemical environment of underground water or lock.
- Excellent elastic and adhesive property provides long lasting index effect.
- There is no gel welding phenomenon, the disadvantage of sodium silicate or no aging by hydrolysis.
- High elastic flexible gel formed after congelation swells when contacting water by absorbing vibration. Therefore it provides continuous water block ability as it copes with second deformation of ground and structures appropriately.

## APPLICATIONS

- Leakage stop for all buildings and civil structures
- Water blockage and back grouting for junctions of underground structures
- Permanent waterproof grouting for underground structures like tunnels and subways
- Water leakage repair work for extension joint and joint construction
- Joint and leak site of reservoir, swimming pool and pond etc.
- Pore area of concrete structures



# Air-Vent



## FEATURES

- Fully combined with water-tight layer
- Effective on entire rooftop's area
- Effective on entire rooftop's multi-layers
- Floor can be available due to projected region located on edges

## THCHMICAL DATE

|                     |                                  |
|---------------------|----------------------------------|
| Weight              | 340g                             |
| Width/Length/Height | 235x235x180mm                    |
| Installation area   | one per approx, 50m <sup>2</sup> |

## APPLICATIONS

- Exhaust mechanism for rooftop's water-tight layer
- Water conveyance for rooftop's water-tight layer
- Exhaust mechanism for exposed water-tight layer
- Water conveyance for exposed water-tight layer

## TO BE USED

Discharge of moisture in rooftop urethane water-proof or place needed for moisture discharge





## ELSE PARTS



### ◆ DRILL

Use a twist drill (10Ø) to drill holes at an interval of less than 20cm. At a depth of 6~10cm, drill at a 45 degree angle along the side of the crack.



### ◆ INSERT PACKER

Remove dust from the drilled holes and insert packers. Leave about 2cm from the injection site to easily remove packers at the end.



### ◆ TIGHTEN PACKER

Use a T handle (10Ø) to tighten packers to firmly position the packers and to prevent the grout from leaking.



### ◆ URETHANE FOAM GROUT

Fill two-thirds of the injection pump with urethane foam grout and close the lid.



### ◆ BEGIN INJECTION

Begin injection- Since the packers are installed at intervals less than 20cm, begin from one end to the other. Move from bottom to top for vertical cracks and from end points to the middle for horizontal cracks.



### ◆ WHEN INJECTING

When injecting, start with a low pressure and inject until 10cm leaks out from both sides of the packer. Do not inject too much at once and insert the next packer before more injections.



### ◆ REMOVE PACKER

Use a hammer to hit the injection site of the packer to separate it from the wall. Since the packer is able to prevent reverse current flow, the urethane grout in the cracks will not leak out even with the removed packer.



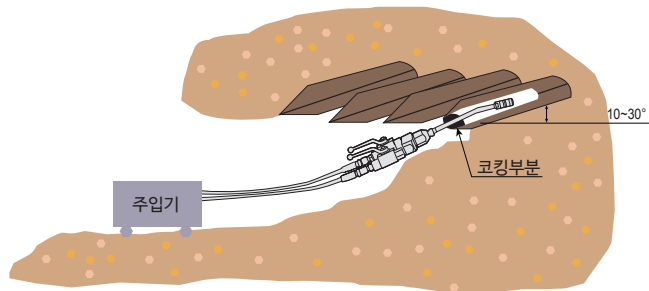
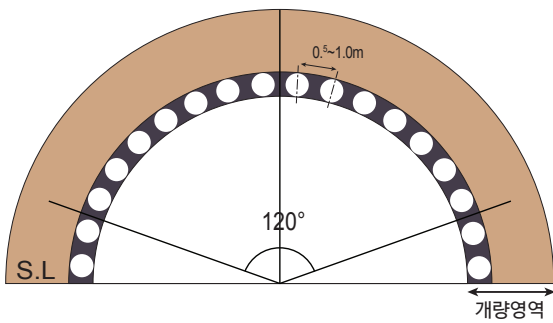
### ◆ CLEANING

Use a urethane thinner followed by cleaning oil if you do not plan to use it again for a long time. Use only cleaning oil if you will be using it within a few days. Fill one-third of the injection pump for cleaning. You may use engine oil instead of cleaning oil.

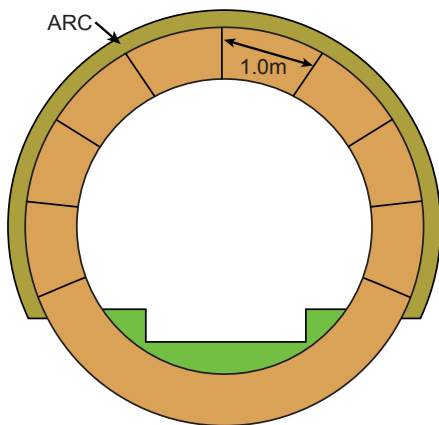


## CONSTRUCTION WORK, EXAMPLE

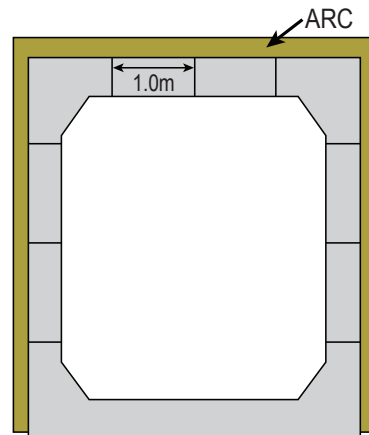
### ● 일반터널



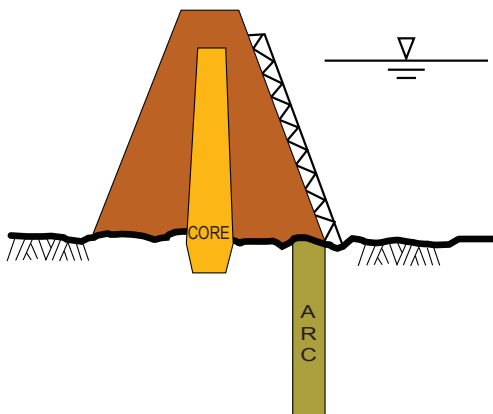
### ● 라이닝터널 조인트



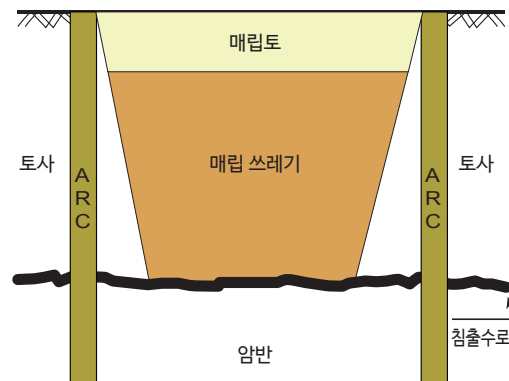
### ● 공동구 및 BOX터널 조인트



### ● DAM 커튼 보강 그라우팅

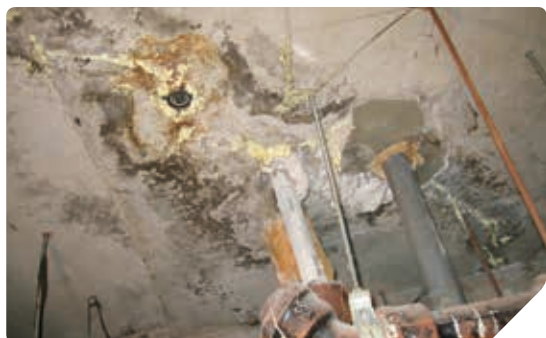


### ● 쓰레기매립장 침출수 차단커튼 그라우팅



# CONSTRUCTION WORK, EXAMPLE

● CEILING PIPE AROUND



● UNDERGROUND PARKING CEILING



● UNDERGROUND PARKING CEILING



● HIT INSULATOR WALL



● AN AIRCONDITIONER PIPE



● WASH STAND PIPE



● UNDERGROUND STAIR



● ELEVATOR FLOOR OF WHOLE



SINGLE-LINE PUMP

DOUBLE-LINE PUMP

ACRYLIC RESIN PUMP

PACKER

CHEMICAL

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