GREASE PUMPS

A-RYUNG MACHINERY IND. CO., LTD.
Quality Policy
Thoroughness of Customer Contentment
Centralized Grease lubrication pumps

- Manual Grease pumps
- MEMOLUB Grease pumps
- Air Grease pumps
- Electronic Grease pumps
- Single-line & Dual-line Distributors

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Grease pumps

**Supply method**

**Grease lubrication**

- **Single line**
  - Pump
    - AGP-700
    - AGP-700-CT
    - AGP-2000
    - AMPM-1
    - AMPM-2
    - AGP-720
    - AGP-15M
    - AGP-15M-CT
    - AGP-15C
    - AGP-15C-CT
    - AGP-45, 85ES
    - HPS
  - Distributor
    - ARU-R
    - ARB-M

- **Dual line**
  - Pump
    - AMPM-2
    - AGP-45, 85ES
    - AGP-45, 85EH
    - ARHI-DV
    - ARHI-DW
  - Distributor

**Grease supply method by pump**

<table>
<thead>
<tr>
<th>Pump division</th>
<th>Valve type</th>
<th>Single line Distributor</th>
<th>Dual line Distributor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ARU-R</td>
<td>ARB-M</td>
<td>DV</td>
</tr>
<tr>
<td>Manual</td>
<td>AGP-700</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>AGP-700-CT</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>AGP-2000</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>AMPM-1</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>AMPM-2</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Air drive</td>
<td>AGP-720</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>AGP-720-CT</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Electronic drive</td>
<td>AGP-15M</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>AGP-15M-CT</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>AGP-15C</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>AGP-15C-CT</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>AGP-45, 85EH</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td></td>
<td>AGP-45, 85ES</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>MEMOLUB</td>
<td>HPS</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

○ = Possible   × = Impossible
Supply method

The lubricating systems of this pump have two types as: Single line and Dual line type, so it should be used different pumps and distributors according to machine features.

1. Pump Ass'y
2. Main Distributor
3. Line filter
4. Branch Distributor
5. Filling pump

- Grease 충전시에는 펌프 Grease gun이나 충전펌프(Filling pump)를 사용하여 Grease 보급구에 충전을 하여 주십시오.
- Grease 충전시에는 액가 혼합되지 않도록 의심히 유의하십시오 (액가 혼합되면 토출 브래킷이 발생됩니다.)
- Tank의 Cover를 열고 Grease를 피서 냄거나 주입하려고만 Grease 속에 액가 혼합되어 토출 브래킷이 발생됩니다.
- If the grease is used with mixing different greases, the grease is stained and changed the quality of using grease by the chemical reaction.
- the pump doesn’t work when the grease contains the air or different particles.
- Don’t open absolutely the tank cap to fill the grease, It causes the discharge failure by containing air.
**Grease pumps**

**Manual grease pumps**

### AHGP-700, 2000 Series

<table>
<thead>
<tr>
<th>Type</th>
<th>Discharge volume (cc/st)</th>
<th>Max. pressure (kgf/cm²)</th>
<th>Reservoir (Cartridge) capacity (Kg)</th>
<th>NLGI No.</th>
<th>OutLET</th>
<th>Filling method</th>
<th>Net weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHGP-700</td>
<td>1.0</td>
<td>150</td>
<td>0.7</td>
<td>#000-02</td>
<td>1/8&quot;</td>
<td>Filling</td>
<td>1.2</td>
</tr>
<tr>
<td>AHGP-2000</td>
<td>1.5</td>
<td>150</td>
<td>2.0</td>
<td>#000-02</td>
<td>1/8&quot;</td>
<td>Filling</td>
<td>4.4</td>
</tr>
<tr>
<td>AHGP-2000-CT</td>
<td>1.5</td>
<td>150</td>
<td>0.7</td>
<td>#000-02</td>
<td>1/8&quot;</td>
<td>Cartridge</td>
<td>1.5</td>
</tr>
</tbody>
</table>

- AHGP-700-CT형은 Cartridge 교환방식 Grease pump으로서 Grease 채출기에 따른 지점분할과 이동거림이 없으며, Cartridge 상태를 따르고 전달하게 할 수 있으며, 경제적이고 편리한 장점을 유지할 수 있다.
- 프레스, 콤비나, 크레인, 특정차, 선박, 제조 기계 및 각종 산업기계 등 활용도가 매우 높다.

- The outlet is located either side viewing from in front of lever, but located right side when it provides from original products.
- Even the reservoir material is strong plastic, and be careful when cleaning by using thinner or chemical liquid.
- The grease grades should be used clear and good qualified grease within NLGI No; #000-2.
- If the grease is mixed with different types it can be stained or occurred chemical reaction.
- Should avoid to pull strongly out or press the pump lever, it possibly make pump broken.

*Grease 채출 및 Cartridge 교환 방법은 32 Page 참조.*

*Refer the page 32 how to fill the grease and to exchange the cartridge.*
AHGP-700, 2000 Series

AHGP-700

① Pump body
② Grease tank
③ Tank cover
④ Lever
⑤ Air vent

AHGP-2000

① Pump body
② Grease tank
③ Tank cover
④ Lever
⑤ Relief valve
⑥ Air vent

AHGP-700-CT

① Pump body
② Grease tank
③ Lever
④ Relief valve
⑤ Air vent
AMP Series

- AMPM형은 수동 Plunger식 Grease pump로서 높은 압력으로 범위의 Grease 공급에 적합하며 수행이 간편하다.
- 배관 방식에 따라 1관식(Single line) 및 2관식(Dual line)으로 시스템을 구성할 수 있다.
- 콘베이어, 코인, 선반, 자동차, 상업기계, 공업기계 및 각종 산업기계 등 활용도가 매우 높다.

<table>
<thead>
<tr>
<th>Type</th>
<th>Discharge volume/CC/st</th>
<th>Max. Pressure/psi</th>
<th>Reservoir (Cartridge capacity) l</th>
<th>NLGI NO.</th>
<th>Out-getロッド구</th>
<th>Piping method</th>
<th>Net weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMPM-112</td>
<td>7.0</td>
<td>100</td>
<td>2.0</td>
<td>1000-2</td>
<td>1-1/8</td>
<td>Single</td>
<td>19.0</td>
</tr>
<tr>
<td>AMPM-114</td>
<td>7.0</td>
<td>100</td>
<td>4.0</td>
<td>1000-2</td>
<td>1-1/8</td>
<td>Single</td>
<td>21.0</td>
</tr>
<tr>
<td>AMPM-122</td>
<td>3.5</td>
<td>170</td>
<td>2.0</td>
<td>1000-2</td>
<td>1-1/8</td>
<td>Single</td>
<td>19.0</td>
</tr>
<tr>
<td>AMPM-124</td>
<td>3.5</td>
<td>170</td>
<td>4.0</td>
<td>1000-2</td>
<td>1-1/8</td>
<td>Single</td>
<td>21.0</td>
</tr>
<tr>
<td>AMPM-212</td>
<td>7.0</td>
<td>100</td>
<td>2.0</td>
<td>1000-2</td>
<td>2-3/8</td>
<td>Dual</td>
<td>19.0</td>
</tr>
<tr>
<td>AMPM-214</td>
<td>7.0</td>
<td>100</td>
<td>4.0</td>
<td>1000-2</td>
<td>2-3/8</td>
<td>Dual</td>
<td>21.0</td>
</tr>
<tr>
<td>AMPM-222</td>
<td>3.5</td>
<td>170</td>
<td>2.0</td>
<td>1000-2</td>
<td>2-3/8</td>
<td>Dual</td>
<td>19.0</td>
</tr>
<tr>
<td>AMPM-224</td>
<td>3.5</td>
<td>170</td>
<td>4.0</td>
<td>1000-2</td>
<td>2-3/8</td>
<td>Dual</td>
<td>21.0</td>
</tr>
</tbody>
</table>

- 2관식은 2개의 도출구가 있으므로 왜곡방향의 교차가 일관되며 적절한 해머를 맞을 수 있어 도출 방향을 정확한 시기 다시 급수급여가 합리적이다. (각도 변환은 180°로 일관적으로 편의함.
- 초기 배관 설치시 배관과 연결하기 전에 Air vent을 끼고 펌프를 동작시켜 Air 배관을 한 후 Grease가 나오는 것을 확인한 후 배관을 연결함. 사용 Grease는 NLGI No. #000-2 범위의 저착단 압착성 Grease를 중점 하십시오.
- 다른 종류의 Grease를 교차하여 사용하게 되면 오염거나 화학반응이 일어날 수 있으므로 교차하여 사용하는 것을 고려하시오.
- Grease와 Air나 이물질이 혼입되어 있으면 펌프가 되지 않는다.

- AMPM type is manual plunge grease pump and useful to lubricate the grease at long distance with easy operation.
- It is used with single line and double line system by piping line.
- This type is suitable to lubricate medium & simple system, combining ARU-R or ARB-M in single line and AMPH-DV, D/A, DV in dual line system.
- It is broadly used in conveyor, crane, ship, paper, moulding, and various industrial machine.
Manual grease pumps

AMP M Series

**External dimension**

<table>
<thead>
<tr>
<th>Type</th>
<th>A</th>
<th>B</th>
<th>Reservoir</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMFM-112</td>
<td>665</td>
<td>382</td>
<td>2</td>
</tr>
<tr>
<td>AMFM-114</td>
<td>805</td>
<td>502</td>
<td>4</td>
</tr>
<tr>
<td>AMFM-122</td>
<td>665</td>
<td>382</td>
<td>2</td>
</tr>
<tr>
<td>AMFM-124</td>
<td>805</td>
<td>502</td>
<td>4</td>
</tr>
</tbody>
</table>

(1) Pump body  
(2) Reservoir (Tank)  
(3) Tank cover  
(4) Level indicator  
(5) Pressure gauge  
(6) Air vent  
(7) Grease filling port  
(8) Handle  
(9) Discharge port (PT 3/8")

**Operating instructions**

1. Pump Handle(1)を操作すると Gear(2)が Pump piston(3)の Rackと接触し、Greaseを Pumping に用いた。
2. Pump piston(3)の作動により 2つの Outlet口 で Greaseが排出され、Dispenser口と Greaseを接続する。
3. 操作の方法は、後述の図に示すとおり。
4. Pump piston(3)に作用する力が、Outlet口で Greaseが排出される。
5. Outlet口で Greaseが排出される。

※1: Single Pumping is 1 outlet only.

1. The gear(2) operates connecting either side with rack of gear(3), while the pump handle operates.
2. One of two inlet opens and the other closed while operating pump piston(3).
3. The side drawing is indicated to open left inlet and suck the grease.
4. When piston(3) moves left, the left inlet is closed and liquid pressure higher. The first inlet flow the oil through conversing distributor(8) by opening check valve(6).
5. The pressure gauge(5) indicates discharging pressure, if not low pressure, remove the air after opening air vent(6).
6. When the inlet(1) flows grease, the inlet(2) is opened returning line of tank.
7. When the converse handle is pushed or pulled out, the cifting is changed to outlet(2)after finishing outlet(1).

The single pump installs one outlet and has not install the reversed distributor.
**HPS Series**

- HPS is a Cartridge type of Grease pump designed for single or multi-point lubrication.
- The pump is of the auto-grease type, which means it automatically applies grease to the lubrication points.
- The pump is enclosed in a Cartridge, providing a compact and easy-to-handle solution.
- The pump is capable of handling 120cc, 240cc, and 480cc of Grease, depending on the model.
- The pump is designed for use in industries such as automotive, crane, ship, print machine, paper, and various other industries.

<table>
<thead>
<tr>
<th>Type</th>
<th>Discharge volume</th>
<th>Max. pressure</th>
<th>Cartridge capacity</th>
<th>NGL</th>
<th>Filling method</th>
<th>Battery (alkaline)</th>
<th>Net weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>25/120cc</td>
<td>0.63/25cc</td>
<td>480cc</td>
<td>0</td>
<td>1/4&quot; PT</td>
<td>Cartridge</td>
<td>3000g</td>
</tr>
<tr>
<td>Mega</td>
<td>25/240cc</td>
<td>0.63/25cc</td>
<td>480cc</td>
<td>0</td>
<td>1/4&quot; PT</td>
<td>Cartridge</td>
<td>4000g</td>
</tr>
<tr>
<td>Giga</td>
<td>25/480cc</td>
<td>0.63/25cc</td>
<td>480cc</td>
<td>0</td>
<td>1/4&quot; PT</td>
<td>Cartridge</td>
<td>6000g</td>
</tr>
</tbody>
</table>

- The pump is designed to handle Grease at temperatures down to -10°C. It is suitable for use in cold environments.
- The pump is designed to be used in a variety of industries, including automotive, crane, ship, print machine, paper, and others.
- The pump is designed to be used in a variety of environments, including cold and hot environments.
- The pump is designed to be used in a variety of applications, including automotive, crane, ship, print machine, paper, and others.

**HPS - Single Line**

- This type can be used in remote locations up to 3000km from the lubrication points and can avoid dangerous and difficult access points.
- This type can be used in remote locations up to 3000km from the lubrication points and can avoid dangerous and difficult access points.
- This type can be used in remote locations up to 3000km from the lubrication points and can avoid dangerous and difficult access points.
- This type can be used in remote locations up to 3000km from the lubrication points and can avoid dangerous and difficult access points.
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MEMOLUB Cartridge type

HPS Series

MEMO setting 유량조절와셔 설정

- 동료된 액압력은 MEMO의 pump 실린더를 연장하는 역할을 한다.
- 피스톤의 Stroke를 조절하기 위해 조절판을 넣을 수 있다. 이것은 MEMO의 유량조절 장치고, 만약 MEMO를 조절과서 없이 사용될 때는 1 Stroke에 0.635cc가 토크되고, 조절판을 넣어서 사용 할 때에는 0.04cc의 감소하며, 조절판을 빼기 되면 0.04cc씩 증가한다.
- 유량조절와셔는 최대 7개를 까지 사용이 가능하다.

The MEMO (Time 설정 Kit)

- MEMO 부품은 HPS pump의 정확하에 일일 일정량의 Grease를 급유하는 장치이다.
- 이 장치는 처음 자동 급유조건을 설정해서 놓으면, 각 토크시기에 맞추어 정기적으로 자동 급유되는 장치이다.
- 보수유지도 설정된 토크시시간들을 자동 적립함으로써 일정한 기여하도록 하여, 설정 범위도 간단하고 시간도 오래 걸리지 않는다.
- The MEMO is a unique system for adjusting the daily grease output of HPS pump.
- The MEMO is programmed the first time and is then permanently fitted on the lubrication points. Maintenance personnel need not to remember at each intervention what setting is necessary and organization is simplified.
- Programming the MEMO is simple and takes little time.

Time setting 설정

<table>
<thead>
<tr>
<th>Rings (Color)</th>
<th>Strokes/Day</th>
<th>Daily Discharge Volume (cc)</th>
<th>Months to Empty 사용 계월</th>
<th>Standard (120cc)</th>
<th>Mega (240cc)</th>
<th>Giga (480cc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RBW</td>
<td>24</td>
<td>15.1</td>
<td>0.25</td>
<td>0.5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>RW</td>
<td>12</td>
<td>7.6</td>
<td>0.5</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>RB</td>
<td>4</td>
<td>2.5</td>
<td>1.5</td>
<td>3</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>R</td>
<td>2</td>
<td>1.3</td>
<td>3</td>
<td>6</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>BW</td>
<td>1.5</td>
<td>1.0</td>
<td>4</td>
<td>8</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>1</td>
<td>0.8</td>
<td>6</td>
<td>12</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>0.5</td>
<td>0.3</td>
<td>12</td>
<td>24</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

*B = Black ring
W = White ring
R = Red ring

※Time setting Kit 구성품의 조립에 의해 염소 판프의 작동 시간을 간격하게 설정할 수 있다.
The time setting can be easily combined by ring color.
Grease pumps

HPS Series

External dimension

<table>
<thead>
<tr>
<th>Type</th>
<th>A</th>
<th>L</th>
<th>TL</th>
<th>Reservoir</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>31</td>
<td>102</td>
<td>133</td>
<td>2</td>
</tr>
<tr>
<td>Mega</td>
<td>31</td>
<td>120</td>
<td>165</td>
<td>4</td>
</tr>
<tr>
<td>Giga</td>
<td>31</td>
<td>214</td>
<td>246</td>
<td>2</td>
</tr>
</tbody>
</table>

※Grease 혼합 및 Cartridge 교환 방법은 33 Page 참조

Refer the page 33 how to fill the grease and to exchange the cartridge.
MEMOLUB Cartridge type

HPS Series

Splitter-MEMO - G

Division 사용구분
G: Grease
O: Oil

- Splitter-MEMO is a double discharging device, instead of a single discharge, to lubricate the same volume at the necessary points.
- The splitter MEMO is used combining with HPS standard or Mega or Giga pump.

<table>
<thead>
<tr>
<th>Type</th>
<th>Oil kind 사용유체</th>
<th>Viscosity NLGI No. 점도</th>
<th>Out-let 토클구 PF</th>
<th>Net weight 중량 Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>Grease</td>
<td>NLGI No. #000-1</td>
<td>1/8&quot;</td>
<td>0.64</td>
</tr>
<tr>
<td>O</td>
<td>Oil</td>
<td>220cSt</td>
<td>1/8&quot;</td>
<td>0.64</td>
</tr>
</tbody>
</table>

Filling of grease 충전방법

**Step 1**
The HPS pump should separate splitter-MEMO and then assemble grease nipple after removing the tube fitting of outlet No. 1.

HPS pump을 Splitter-MEMO의 분리한 다음 Outlet 1의 Remove tube Fitting을 분리한 후 Grease Nipple를 결합한다.

**Step 2**
The splitter MEMO should be completely filled the grease oil by the standard grease gun.

프론 Grease Gun으로

Splitter-MEMO의 위로까지 완전히 충전하도록 주유한다.

- Splitter-MEMO를 설치한 배관의 길이는 배관경 60cm 정도이니 있으며 산업계소까지의 길이가 필요하게 설치해야한다.
- Splitter-MEMO는 HPS series pump의 조립하여 사용할 수 있다. (다·제품화는 협력되지 않음)
- Splitter-MEMO를 임의로 분해하거나 Stem valve를 손으로 동작시켜서는 안된다.
- The splitter MEMO pipes have to be installed within 4m, by the pipe diameter 90 and the same distance from lubricating points.
- This splitter can assemble only MEMO HPS series, (No possible other pumps).
- This pump should not dismantle and operate stem valve by hands.
## AGP-720 Series

**AGP-720** is a type of air grease pump operating by condensed air, and can easily control the discharge volume and pressure. This type is used in remote places or in many locations by combining a single distributor (ARU-R, ARB-M types).

**AGP-720-CT** type is a cartridge pump and it is easy to change the cartridge in a short time without stopping the machine working. The cartridge type is more economical and clean surroundings.

This pump is mainly used in conveyor, crane, ship, paper, moulding and various industrial machines.

<table>
<thead>
<tr>
<th>Type</th>
<th>Discharge volume</th>
<th>Max. pressure</th>
<th>Air Pressure Range</th>
<th>Reservoir Capacity</th>
<th>NLGI No.</th>
<th>Outlet</th>
<th>Refilling</th>
<th>Net weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGP-720</td>
<td>0.4</td>
<td>150</td>
<td>3-7</td>
<td>2.0</td>
<td>No.000-1</td>
<td>PT</td>
<td>Filling</td>
<td>3.7</td>
</tr>
<tr>
<td>AGP-720F</td>
<td>0.4</td>
<td>150</td>
<td>3-7</td>
<td>0.7</td>
<td>No.000-1</td>
<td>PT</td>
<td>Filling</td>
<td>3.2</td>
</tr>
<tr>
<td>AGP-720-CT</td>
<td>0.4</td>
<td>150</td>
<td>3-7</td>
<td>2.0</td>
<td>No.000-1</td>
<td>PT</td>
<td>CT Cartridge</td>
<td>3.9</td>
</tr>
</tbody>
</table>

This pump has an inner cylinder to install a unit to remove the air moisture. **AGP-720** series is a kind of single line grease pump and used combining ARU-R and ARB-M distributor.

To pipe first, the air venting, working the pump, should be done before assembling distributors and then combine the pipe.

The use of grease grades are Lithium NLGI No. #000-1, and used clear and good quality grease.

Even the reservoir material is strong plastic, you should be careful to clean or refill the tank after usage with thinner or other chemical liquid.

Refer the page 32 how to fill the grease and to exchange the cartridge.
AMGP-720 Series

Discharge pressure 토클압력

Discharge volume 토클유량

The discharge pressure and volume are determined by the air pressure.
Air 압력에 따라 토클압력과 토클유량이 결정

External dimension 외형도

AGP-720
1. Pump body
2. Air cylinder
3. Cylinder body
4. Grease tank
5. Air adjust bolt

AGP-720F
1. Pump body
2. Air cylinder
3. Cylinder body
4. Grease tank
5. Air adjust bolt
6. Limit switch

AGP-720-CT
1. Pump body
2. Air cylinder
3. Cylinder body
4. Grease tank
5. Air adjust bolt
AGP-15 Series

AGP-15형은 소형 전동식 Grease pump로서 금연개소기 다소 작고 귀중을짐으며 정화하여 1가지 변형형(ARU-R, ARB-M type)과 조합하여 여러 개의 구성이 가능하다.

AGP-15M형은 배어 제어장치가 없으며 본체의 Contoller에 의해 제어될 수 있다.

AGP-15C형은 본체 내장된 Digital controller에 의해 Interval과 Discharge time이 설정되어 설정된 시간에 자동으로 급유가 이루어진다.

AGP-15M(CT), CT형은 Cartridge 교환방식 Grease pump로서 Grease 자충전에 따른 지저분함과 반려가 없고, Cartridge 교환을 빠르고 관리하기가 용이하며, 간편체계 그리고 빠른 관리가 용이하다.

프레스, 콘베어, 크레인, 특장차, 선박, 제어 장치 및 각종 산업기에 들어가도 매우 높다.

AGP-15 type is a small electric grease pump used less oil points and close place, it can lubricate by combining with single line distributor (ARU-R and ARB-M type).

AGP-15M has no controller in the pump itself, can adjust outside controller.

The AGP-15C has a digital controller, so the interval and discharge time can be adjusted by this controller to lubricate automatically.

AGP-15M(CT) type is a cartridge pump and it is easy to change the cartridge in a short time without refilling. The cartridge type is more economic and clean surroundings.

This type is used mainly press, conveyor, crane, special vehicle, ship, paper, and various industrial machine.

<table>
<thead>
<tr>
<th>Type</th>
<th>Discharge volume cc/min</th>
<th>Working pressure kg/cm²</th>
<th>Pressure range kg/cm²</th>
<th>Reservoir capacityℓ</th>
<th>NLGI No.</th>
<th>Outlet PT</th>
<th>Refilling method</th>
<th>Net weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGP-15M</td>
<td>12</td>
<td>100</td>
<td>20-120</td>
<td>2.0</td>
<td>#000-1</td>
<td>1/4″</td>
<td>Filling</td>
<td>9.5</td>
</tr>
<tr>
<td>AGP-15C</td>
<td>15</td>
<td>100</td>
<td>20-120</td>
<td>2.0</td>
<td>#000-1</td>
<td>1/4″</td>
<td>Filling</td>
<td>9.5</td>
</tr>
<tr>
<td>AGP-15M-CT</td>
<td>12</td>
<td>100</td>
<td>20-120</td>
<td>0.7</td>
<td>#000-1</td>
<td>1/4″</td>
<td>Cartridge</td>
<td>8.7</td>
</tr>
<tr>
<td>AGP-15C-CT</td>
<td>15</td>
<td>100</td>
<td>20-120</td>
<td>0.7</td>
<td>#000-1</td>
<td>1/4″</td>
<td>Filling</td>
<td>9.5</td>
</tr>
</tbody>
</table>

Setting of interval time

<table>
<thead>
<tr>
<th>Discharge Time (분배시간)</th>
<th>Interval Time (간헐 정지시간)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  10sec 일 때</td>
<td>약 2min 이상</td>
</tr>
<tr>
<td>11  3sec 일 때</td>
<td>약 3min 이상</td>
</tr>
<tr>
<td>31  60sec 일 때</td>
<td>약 5min 이상</td>
</tr>
<tr>
<td>61  99sec 일 때</td>
<td>약 10min 이상</td>
</tr>
</tbody>
</table>

This pump is an intermittent grease pump used a small motor. As a result it has high temperature at starting so it keeps sufficient interval time. (refer the setting of interval time on side chart)

The motor is automatically stopped when the interval time is shorter by the high temperature. But it works normally after the motor cooling.
AGP-15 Series

Precautions for different 사용 시 유의사항

- AGP-15형 Grease 펌프에는 Relief valve가 내장되어 사용압력을 조정할 수 있다. 사용 압력을 너무 높게 설정하면 Pump의 내구성이 저하될 수 있으므로 적절한 압력을 설정해야 한다.
- 초기 배관 설치시 본체에서 연결하기 전에 Air vent를 열고 Pump을 작동시켜 Air 배기가 잘 관을 흐르게 나오는 것을 확인 후 배관과 연결해야 한다.
- Tank의 재질은 강화 플라스틱으로 되어 있으나 생산 및 화학용제에는 미온성으로 사용 및 세척시 각별히 유의해야 한다.
- 사용 구리스는 Lithium 계통의 NLGI No. #000 - 1 범위의 적합한 양질의 Grease만을 사용할 것.
- 다른 종류의 Grease와 혼합하여 사용하게 되면 오염되거나 화학 반응에 의해 변질될 수 있으므로 혼합하여 사용하는 것을 권장하지 않다.
- Grease 충전 및 Cartridge 교환 방법은 32 Page 참조

Electric connection 결선도

- AGP-15 grease pump has a relief valve and can adjust pressure. If the pressure sets high, the endurance of the pump will be down. So the pressure keeps proper.
- To pipe first, the air venting, working the pump, should be done before assembling distributors and then combine the pipes.
- Even the reservoir material is strong plastic, you should be careful to clear or refill the tank after usage with thinner or other chemical liquid.
- The using grease grades are Lithium, NLGI No. #000-1, and used clear and good quality grease.
- If the grease is used with mixing different grease, the grease is stained and changed the quality of using grease by the chemical reaction.
- Refer the page 32 how to fill the grease and to exchange the cartridge.
Panel description

- 조절범위
  Interval time: 1min ~ 29h 59min
  Discharge time: 1~99sec
- 토큰유량 환산
  15cc/min + 0.25cc/sec

1) 설정방법
- MODE: 설정시작, 이동, 설정완료
  ▲: 수치증가
  ▼: 수치감소
A) 모드 Mode "■" 버튼을 1회 누르면 Interval time의 수치가 감소가되며 이때 ①번 "▲" 버튼을 누르면 수치가 증가하고 ②번 "▼" 버튼을 누르면 수치가 감소한다. 원하는 Interval time의 설정이 완료되면 다시 ①번 Mode "■" 버튼을 1회 누르면 Discharge time의 수치가 감소가되며 이때 ③번 "▲" 버튼을 누르면 수치가 증가하고 ④번 "▼" 버튼을 누르면 수치가 감소한다. 원하는 Discharge time의 설정이 완료되면 ⑤번 Mode "■" 버튼을 눌러 설정을 종료한다.
B) 설정된 10초 이내에 아무런 입력이 없으면 설정이 완료된 것으로 간주되어 자동으로 모드 상태로 전환된다.
C) "▲", "▼" button을 1회 누를 때마다 1수치씩 증, 감이며 계속해서 누르고 있으면 연속해서 증, 감한다.

2) RESET 기능
- 측정이 정상중인 상태에서 "RESET" button을 누르면 설정된 운전조건 상태가 다시 시작된다.

3) FEED button 기능 (수동 금유)
- 운전이 정상중인 상태에서 "FEED" button을 누르면 조립(setup)이 완료되어 설정 시나리오는 꺼지면서 누르고 있는 동안 액체가 풀린다. 초기압을 실시하여 환경의 상태를 점검하거나 수동으로 금유하고자 할 때 용이하게 사용할 수 있다.

타이머 설정방법

1) Setting of timer
- MODE: setin start, move, setting finish
  ▲: numbers up
  ▼: numbers down

A) If you press the button "■" one time, the interval time mode begins blinking. "▲" button increases the numbers to set the interval time and "▼" button decreases the numbers. When it finished, press "■" button again and the discharge volume time mode blinking. "▲" button leads to increase numbers and "▼" button decreases the discharge time. Press again MODE "■" to exit the setting program.
B) If you don’t press the button within 10 seconds, the timer recognizes the setting time is ended and operates automatically.
C) When you press "▲", "▼" button one time, one number increases/decreases. The longer pressing the button makes continuous numbering.

2) RESET function.
- When you push the "RESET" button during the operation, the mode returns to starting mode.

3) FEED button (manual)
- If you press "FEED" button during the operation, the "FEED" signal is out in the window and the oil is discharged regardless of the setting program. This button can be used to lubricate the oil by manual.

Instruction digital timer
AGP-45, 85 Series

AGP-45, 85형은 전동식 Grease pump로서 높은 압력으로 원가의 급유에 적합하여 배관 방식에 따라 1관식(Single line) 및 2관식(Dual line)으로 시스템을 구성할 수 있다.

비교적 시스템구성 규모가 크고 및 급유거리가 긴 곳에 적합하며 본배관은 1관식(Single line)임에 따라 ARB-M, 2관식(Dual line)임에도 아RH-DV, DW type과 조합하여 여러 가지의 유동가 가능하다.

콘베이어, 크레인, 선박, 제지기계, 공업용 및 각종 산업기계 등 활용도가 매우 높다.

The AGP-45 and 85 type is an electric grease pump and suitable to lubricate long distance. This type is used assembling pipe as single line or dual line according to usage.

This pump is useful to lubricate large scale system relatively, assembling ARB-M type when installing single line distributor, ARH-DV, DW type when dual line distributor; This is broadly used conveyor, crane, ship, paper, blast furnace and various industrial machine.

<table>
<thead>
<tr>
<th>Type</th>
<th>Discharge volume(cc/min)</th>
<th>Max. pressure(Kg/cm²)</th>
<th>Reservoir capacity(l)</th>
<th>NLGI Grade</th>
<th>Out-leT No.</th>
<th>Change method</th>
<th>Piping method</th>
<th>Net weight(Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGP-45EH</td>
<td>45</td>
<td>170</td>
<td>6</td>
<td>#00-2</td>
<td>3/8&quot;</td>
<td>Hydraulic</td>
<td>Dual</td>
<td>60</td>
</tr>
<tr>
<td>AGP-45SS</td>
<td>45</td>
<td>170</td>
<td>25</td>
<td>#00-2</td>
<td>3/8&quot;</td>
<td>Solenoid</td>
<td>Dual</td>
<td>60</td>
</tr>
<tr>
<td>AGP-85EH</td>
<td>85</td>
<td>170</td>
<td>25</td>
<td>#00-2</td>
<td>3/8&quot;</td>
<td>Hydraulic</td>
<td>Dual</td>
<td>78</td>
</tr>
<tr>
<td>AGP-85SS</td>
<td>85</td>
<td>170</td>
<td>25</td>
<td>#00-2</td>
<td>3/8&quot;</td>
<td>Solenoid</td>
<td>Single</td>
<td>78</td>
</tr>
</tbody>
</table>

EH Hydraulic change valve

ES Solenoid change valve

Phase 10, Poles 2P

<table>
<thead>
<tr>
<th></th>
<th>Motor Output (W)</th>
<th>Frequency (Hz)</th>
<th>Rated voltage (V)</th>
<th>Current (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>60</td>
<td>200</td>
<td>1.65</td>
<td>2.2</td>
</tr>
<tr>
<td>400</td>
<td>60</td>
<td>220</td>
<td>1.65</td>
<td>2.2</td>
</tr>
<tr>
<td>440</td>
<td>1.1</td>
<td>440</td>
<td>1.1</td>
<td></td>
</tr>
</tbody>
</table>
AGP-45, 85 Series

Precautions for usage

- AGP-45, 85 Series have a relief valve and can adjust pressure. If the pressure sets high, the endurance of the pump will be down. So the pressure keeps proper.

- The dual line has two outlets and also have pressure reverser and solenoid valve to be reversed automatically.

- To pipe first, the air venting, in working the pump, should be done before assembling distributors and then combine the pipe.

- If the grease is used with mixing different greases, the grease is stained and changed the quality of using grease by the chemical reaction.

- The pump doesn't work when the grease contains the air or different particles. So it need to fill the grease in filling port with filling pump avoiding the air.

- Don't open absolutely the tank cap to fill the grease. (It causes the discharge failure by containing air.)

- AGP-45, 85 Series are Relief valve is installed to control the pressure internally. The acceptable pressure is adjustable.

- The dual line has two outlets and also have pressure reverser and solenoid valve to be reversed automatically.

- To pipe first, the air venting, in working the pump, should be done before assembling distributors and then combine the pipe.

- If the grease is used with mixing different greases, the grease is stained and changed the quality of using grease by the chemical reaction.

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- If the grease is used with mixing different greases, the grease is stained and changed the quality of using grease by the chemical reaction.

- The pump doesn't work when the grease contains the air or different particles. So it need to fill the grease in filling port with filling pump avoiding the air.

- Don't open absolutely the tank cap to fill the grease. (It causes the discharge failure by containing air.)
GMG-B Series

GMG-B - 08 - L - 2 - C - 6

Discharge volume
토출용량
08 : 0.08cc/st
16 : 0.16cc/st

Discharge direction
토출구 방향
L : Left
R : Right
D : Double

Reservoir Division
탱크구분(q)

Control unit
제어장치
M : None
C : Built-in

Distributor point
분배구수
6 : 6Hole, 8 : 8Hole
0 : None

- The GMG-B is an electric grease pump system lubricating with the elements, have two types as attached distributors on the pump itself and combined each points to need lubricating.
- This type automatically lubricates to the necessary point interval and discharge volume by digital controller in pump.
- It is easy to lubricate the grease and to protect from containing the air because of a mixing device in the tank.
- The battery is used DC 24V and suitable to install on specific vehicle, ship, general machines and paper machine.

<table>
<thead>
<tr>
<th>Type</th>
<th>Discharge volume</th>
<th>Max. pressure</th>
<th>Reservoir (cartridge)</th>
<th>NLGI No.</th>
<th>Out-lit distributor</th>
<th>Net weight</th>
<th>DC 24V 30rpm/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMG-B-08-L</td>
<td>2.4</td>
<td>250</td>
<td>2, 4, 7</td>
<td>#000-2</td>
<td>M12×1.0p</td>
<td>9.5</td>
<td>DC 24</td>
</tr>
<tr>
<td>GMG-B-08-R</td>
<td>2.4</td>
<td>250</td>
<td>2, 4, 7</td>
<td>#000-2</td>
<td>M12×1.0p</td>
<td>9.5</td>
<td>DC 24</td>
</tr>
<tr>
<td>GMG-B-08-D</td>
<td>2.4×2.4</td>
<td>250</td>
<td>2, 4, 7</td>
<td>#000-2</td>
<td>M12×1.0p</td>
<td>9.5</td>
<td>DC 24</td>
</tr>
<tr>
<td>GMG-B-16-L</td>
<td>4.8</td>
<td>250</td>
<td>2, 4, 7</td>
<td>#000-2</td>
<td>M12×1.0p</td>
<td>9.5</td>
<td>DC 24</td>
</tr>
<tr>
<td>GMG-B-16-R</td>
<td>4.8</td>
<td>250</td>
<td>2, 4, 7</td>
<td>#000-2</td>
<td>M12×1.0p</td>
<td>9.5</td>
<td>DC 24</td>
</tr>
<tr>
<td>GMG-B-16-D</td>
<td>2×4.8</td>
<td>250</td>
<td>2, 4, 7</td>
<td>#000-2</td>
<td>M12×1.0p</td>
<td>9.5</td>
<td>DC 24</td>
</tr>
</tbody>
</table>
Grease pumps

GMG-B Series

External dimension

<table>
<thead>
<tr>
<th>Reservoir 볼크</th>
<th>A</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>2L</td>
<td>126</td>
<td>Polycarbonate</td>
</tr>
<tr>
<td>4L</td>
<td>170</td>
<td></td>
</tr>
</tbody>
</table>

Reservoir 볼크 | Material
-------------|-------------
72            | Steel zinced

Elements:

1. Reservoir
2. Outlet
2.1 Piston
3. Cam shaft
4. Body
5. Gearless motor

2.1 Piston
2.2 Spring
2.3 Suction hole
2.4 Metering chamber
2.5 Check valve
2.6 Outlet
Filling pumps

AFP-H, M Series

AFP-H, M형은 Grease 콘텐츠 펌프로서 AGP series 펌프에 Air 혼합 없이 Grease를 콘텐츠 하기 위해 사용한다. 구동방식에 따라 수동식(AFP-H)과 전동식(AFP-M)이 있다.

AFP-H, M type is a kind of grease fill pump, it is used to fill the grease in the pump without air. The AFP-H type is manual and AFP-M is electronic type.

This type is portable and easy to move and simple to change the grease tank filled 20ℓ of grease, avoiding different particle.

Precautions for usage

사용시 주의사항

- 서로 다른 종류의 Grease가 혼합하여 사용 하게 되면 오염 되거나 화학반응에 의해 변질될 수 있으므로 혼합하여 사용하는 것을 삼가 냈 것입니다.
- Grease 콘텐츠는 Air나 이물질이 혼합되지 않도록 각별히 유의할 것(Air가 혼합 되면 토크블랑 발생).
- Tank의 Cover를 열고 Grease를 외부에서 넣게 되면 Grease 속에 Air가 혼합되어 토크블랑이 발생 한다.

If the grease is used with mixing different grease, the grease is stained and changed the quality of using grease by the chemical reaction.

The pump doesn't work when the grease contains the air or different particles.

Don't open absolutely the tank cap to fill the grease, it causes the discharge failure by containing air.
ARU-R Series

- ARU-R type is a single line grease distributor which measures accurate amount of grease discharged from the pump and supplies oil to each port in order.
- When the distributor completes 1 cycle, the indicator moves back and forth one time. If any one of the pipes is blocked, the distributor doesn't work. So any problems can be detected immediately.
- The ARU-R-M type has a limit switch and can check the operation by monitoring.
- Temperature range: -20℃ to 70℃

<table>
<thead>
<tr>
<th>Type</th>
<th>Discharge volume</th>
<th>Discharge</th>
<th>Min. pressure</th>
<th>Max. pressure</th>
<th>Central pipe</th>
<th>Branch pipe</th>
<th>Central pipe</th>
<th>Branch pipe</th>
<th>Net weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARU-4R</td>
<td>4</td>
<td>0.3</td>
<td>15</td>
<td>150</td>
<td>1/4&quot;</td>
<td>1/8&quot;</td>
<td>1/8&quot;</td>
<td>0.64</td>
<td></td>
</tr>
<tr>
<td>ARU-6R</td>
<td>6</td>
<td>0.3</td>
<td>15</td>
<td>150</td>
<td>1/4&quot;</td>
<td>1/8&quot;</td>
<td>1/8&quot;</td>
<td>0.64</td>
<td></td>
</tr>
<tr>
<td>ARU-8R</td>
<td>8</td>
<td>0.3</td>
<td>15</td>
<td>150</td>
<td>1/4&quot;</td>
<td>1/8&quot;</td>
<td>1/8&quot;</td>
<td>0.64</td>
<td></td>
</tr>
<tr>
<td>ARU-10R</td>
<td>10</td>
<td>0.3</td>
<td>15</td>
<td>150</td>
<td>1/4&quot;</td>
<td>1/8&quot;</td>
<td>1/8&quot;</td>
<td>0.72</td>
<td></td>
</tr>
<tr>
<td>ARU-12R</td>
<td>12</td>
<td>0.3</td>
<td>15</td>
<td>150</td>
<td>1/4&quot;</td>
<td>1/8&quot;</td>
<td>1/8&quot;</td>
<td>0.72</td>
<td></td>
</tr>
</tbody>
</table>

Assistant metal fittings

- ARU-R type lubricates in order by even number holes. If you need to use the hole in odd number, one hole should be blocked with the assistant fitting AU-16 and AU-26 to avoid discharging volume increases two times.
ARU-R, Series

External dimension

**ARU-4R, 6R, 8R**

**ARU-10R, 12R**

**ARU-R-U (Limit switch option)**
**Grease pumps**

**Progressive single line**

**ARB-M Series**

**ARB-M** type is a single line grease distributor which measures accurate amount of grease discharged from pump and it supplies the oil to each ports in order.

When distributor completes 1 cycle, the indicator moves back and forth one time. If any one of pipe is blocked, the distributor doesn't work.

The **ARU-M** type has a limit switch and can check the operation by monitoring.

<table>
<thead>
<tr>
<th>Type</th>
<th>Block stage</th>
<th>Min. pressure kPa</th>
<th>Max. pressure kPa</th>
<th>Central pipe</th>
<th>Branch pipe</th>
<th>Net weight Kg</th>
<th>Block code NO</th>
<th>Block Type</th>
<th>Discharge Volume L/h</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARB-M3</td>
<td>3</td>
<td>15</td>
<td>350</td>
<td>1/4&quot;</td>
<td>2.20&quot;</td>
<td>2.20</td>
<td>1</td>
<td>10T</td>
<td>0.154</td>
</tr>
<tr>
<td>ARB-M4</td>
<td>4</td>
<td>15</td>
<td>350</td>
<td>1/4&quot;</td>
<td>2.73&quot;</td>
<td>2.73</td>
<td>2</td>
<td>10S</td>
<td>0.323</td>
</tr>
<tr>
<td>ARB-M5</td>
<td>5</td>
<td>15</td>
<td>350</td>
<td>1/4&quot;</td>
<td>3.20&quot;</td>
<td>3.20</td>
<td>4</td>
<td>15T</td>
<td>0.492</td>
</tr>
<tr>
<td>ARB-M6</td>
<td>6</td>
<td>15</td>
<td>350</td>
<td>1/4&quot;</td>
<td>3.66&quot;</td>
<td>3.66</td>
<td>5</td>
<td>20T</td>
<td>0.328</td>
</tr>
<tr>
<td>ARB-M7</td>
<td>7</td>
<td>15</td>
<td>350</td>
<td>1/4&quot;</td>
<td>4.19&quot;</td>
<td>4.19</td>
<td>7</td>
<td>25T</td>
<td>0.410</td>
</tr>
<tr>
<td>ARB-M8</td>
<td>8</td>
<td>15</td>
<td>350</td>
<td>1/4&quot;</td>
<td>4.60&quot;</td>
<td>4.60</td>
<td>9</td>
<td>30T</td>
<td>0.492</td>
</tr>
</tbody>
</table>

**Block** combination permits from minimum 3 to maximum 8 blocks.

The discharge hole is from minimum 1 to maximum 16 holes.

The maximum pressure of distributor reaches 350kPa, but the proper using pressure is 100kPa.

Outlet T: 2 holes, S: 1 hole, discharge volume T×2

Temperature range: -20°C~70°C
Precautions for different 사용시 유의사항

- **S-Block**: 좌, 우측 2개의 토크를 1개의 토크로 합쳐서 토크하는 방식
  좌, 우측 각 토크가 서로 대립적으로 작용되어 있으므로, 온 두 개 토크의 각 토크의 합이 0이 되어야 합니다. 그러나 각 토크의 Port 중 어느 1개의 Port는 항상 막혀 있어야 합니다. (출처: 빅워크숍트로 제한되어 줄고 있음)

- **T-Block**: 좌, 우측 토크가 각각 토크가 이루어짐.
  S-TYPE의 필리 BLOCK의 양쪽 토크가 서로 각각 분리된 바 있으며 어느 한쪽 Port도 제자리 막아서는 안 됩니다.
  (이림 무작위로 백차 되면 분배판재가 작동되지 않음)

- **Pressure Indicator** 압력 지시장
  ARB분배판은 운전제 작동방식으로 어느 한 포트간 정상 토크가 이루어지지 않을 경우 다른 부분의 토크의 합이 되지 않고 압력이 격리될 수 있다. 이때 Pressure Indicator 가 작동되어 이상 유무를 제한으로 식별할 수 있도록 해준다. 이 장치는 분배판 및 증폭의 교란을 방지하고자 하는 안전 빼막으로 임의로 변경거나 분리하여서는 안된다.
  안전한 작동압력은 150kg/cm²로 고정되어 있어 임의로 설정할 수가 없다. 이 기능을 장착직후 사용하기 위해서는 증폭의 최고압력은 150kg/cm²로 설정되어야 한다.

- **S-Block**: The use method as one discharging outlet by combining the outlets (The right and left outlets)
  The pressure of distributor inside becomes low, when two outlets are opened, because the right and the left outlets are placed each other. So one port should be blocked. (One hole is blocked originally when it delivers to the buyer)

- **T-Block**: The use method of either side discharging outlet
  This type is discharged either side of distributor, so should not blocked one of any sides, (if one of any sides is blocked, the operation of all distributors stops)

- **Pressure Indicator**
  The ARB distributor is a progressive discharging system, so the next process stops and occurs the pressure if one of any ports is blocked. The pressure indicator checks the operation condition by the eye. (This indicator for preventing the pump and distributor from checking working conditions should not be dismantled or modified intentionally)
  The pressure is fixed at 150kg/cm², not change the pressure level by option, so the pump should be set the maximum pressure under 150kg/cm² to use normally.
ARHI-DV, DW Series

**ARHI-DV, DW Series**

**Distribution type**
- DV: Single point
- DW: Double point

**Size division**
- ARHI
- DW
- 3
- 6

**Discharge point**
- 토름구수

- **ARHI-DV, DW Distributor is dual line and centralized lubrication system.**
- **The constant grease lubricates to each point by adjusting the oil volume with controlling screw. When the grease flows through the pump, the indication window shows the indicator of distributor up and down.**
- **This type lubricates constantly with piston operation by oil pressure and have a good endurance and quality assurance.**

<table>
<thead>
<tr>
<th>Type</th>
<th>Point</th>
<th>Discharge volume</th>
<th>Max. Pressure</th>
<th>Central pipe</th>
<th>Branch pipe</th>
<th>Net weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(cc/st)</td>
<td>(kgf)</td>
<td>1/4&quot;</td>
<td>1/4&quot;</td>
<td>(Kg)</td>
</tr>
<tr>
<td>DV-31</td>
<td>1</td>
<td>1.2</td>
<td>210</td>
<td>3/8&quot;</td>
<td>1/4&quot;</td>
<td>0.8</td>
</tr>
<tr>
<td>DV-32</td>
<td>2</td>
<td>1.2</td>
<td>210</td>
<td>3/8&quot;</td>
<td>1/4&quot;</td>
<td>1.4</td>
</tr>
<tr>
<td>DV-33</td>
<td>3</td>
<td>1.2</td>
<td>210</td>
<td>3/8&quot;</td>
<td>1/4&quot;</td>
<td>1.9</td>
</tr>
<tr>
<td>DV-34</td>
<td>4</td>
<td>1.2</td>
<td>210</td>
<td>3/8&quot;</td>
<td>1/4&quot;</td>
<td>2.5</td>
</tr>
<tr>
<td>DV-41</td>
<td>1</td>
<td>2.5</td>
<td>210</td>
<td>3/8&quot;</td>
<td>1/4&quot;</td>
<td>0.9</td>
</tr>
<tr>
<td>DV-42</td>
<td>2</td>
<td>2.5</td>
<td>210</td>
<td>3/8&quot;</td>
<td>1/4&quot;</td>
<td>1.6</td>
</tr>
<tr>
<td>DV-43</td>
<td>3</td>
<td>2.5</td>
<td>210</td>
<td>3/8&quot;</td>
<td>1/4&quot;</td>
<td>2.5</td>
</tr>
<tr>
<td>DV-44</td>
<td>4</td>
<td>2.5</td>
<td>210</td>
<td>3/8&quot;</td>
<td>1/4&quot;</td>
<td>3.2</td>
</tr>
<tr>
<td>DV-51</td>
<td>1</td>
<td>5.0</td>
<td>210</td>
<td>3/8&quot;</td>
<td>1/4&quot;</td>
<td>1.3</td>
</tr>
<tr>
<td>DV-52</td>
<td>2</td>
<td>5.0</td>
<td>210</td>
<td>3/8&quot;</td>
<td>1/4&quot;</td>
<td>2.4</td>
</tr>
<tr>
<td>DV-53</td>
<td>3</td>
<td>5.0</td>
<td>210</td>
<td>3/8&quot;</td>
<td>1/4&quot;</td>
<td>3.5</td>
</tr>
<tr>
<td>DV-54</td>
<td>4</td>
<td>5.0</td>
<td>210</td>
<td>3/8&quot;</td>
<td>1/4&quot;</td>
<td>4.6</td>
</tr>
</tbody>
</table>
Grease pumps

Accessory

Limit switch (AGP - 45, 85)
- Voltage: AC250V
- Resistive load: 10A
- Using load: 8A
- Operating Frequency: 20turns/min
- Operating speed: 0.01mm/s-50cm/s
- Producer: Hanyoung, co. ltd
  ZCN-PR508

Limit switch (ARB-M)
- Voltage: AC250V
- Resistive load: 15A
- Using load: 15A
- Operating Frequency: 20turns/min
- Operating speed: 0.01mm/s-50cm/s
- Producer: Parker Pneumatic
  NA-2

Bracket-1 (HPS Pump + ARU-R)

Bracket-2 (Splitter-MEMO)

Bracket-3 (Brush)
Accessory

Grease cartridge

<table>
<thead>
<tr>
<th>NLGI No.</th>
<th>Standard</th>
<th>Mega</th>
<th>Giga</th>
<th>AGP</th>
</tr>
</thead>
<tbody>
<tr>
<td>#000-2</td>
<td>120cc</td>
<td>240cc</td>
<td>480cc</td>
<td>700cc</td>
</tr>
</tbody>
</table>

*This cartridge is generally filled with standard Lithium grease, if you need to fill other grease, you should ask the possibility to the seller of grease.

Hose (Pump + Distributor 연결용)

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>d1</th>
<th>T1</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYP-06</td>
<td>Ø6</td>
<td>Nylon</td>
</tr>
<tr>
<td>ALP-06</td>
<td>Ø6</td>
<td>Aluminum</td>
</tr>
<tr>
<td>CUP-06</td>
<td>Ø6</td>
<td>Copper</td>
</tr>
</tbody>
</table>

Socket

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>T1</th>
<th>T2</th>
<th>ØD1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO-1/4K</td>
<td>8</td>
<td>8</td>
<td>10</td>
<td>22</td>
<td>M12×2.0p</td>
<td>PF 1/4&quot;</td>
<td>4.5</td>
</tr>
</tbody>
</table>

Adaptor

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>T1</th>
<th>T2</th>
<th>Hex</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>RD-1/4K</td>
<td>9.5</td>
<td>7.5</td>
<td>16.5</td>
<td>32</td>
<td>M14×2.0p</td>
<td>PT 1/4&quot;</td>
<td>21</td>
<td>BsBD3</td>
</tr>
</tbody>
</table>

Check valve (Oil 용)

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>T1</th>
<th>T2</th>
<th>Hex</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC-1/8K</td>
<td>14</td>
<td>8</td>
<td>22</td>
<td>PF 1/8&quot;</td>
<td>PT 1/8&quot;</td>
<td>10</td>
<td>BsBD</td>
</tr>
</tbody>
</table>
The flushing and operation 배관세척 및 시운전

- Pump 및 냉매의 배관설치가 완료되면 Pump 정면에 있는 Grease filling port에 충전 필터(Filling Pump) 액포 또는 Grease Gun을 사용하여 Air가 혼입되지 않도록 유의하며 도면 상면선까지 Grease를 충전해운다.
- 주관의 Flushing(배관세척) 방법은 먼저 냉매관 바로 앞단에서 연결된 관서 부분을 분리시킨 후 Grease Pump를 통작시켜 배관관단에 Grease를 충분히 배출시켜 배관부분을 깨끗이 Flushing한 후 다시 냉매관 연결한다. 배관을 처음 설치 후 Flushing을 하지 않으면 배관내의 이물질에 의해 냉매관에 치명적인 고장이 발생될 수 있다.
- 금융관(지관)의 경우도 금융관에 바로 연결하지 말고 배관 관단까지 Grease를 충분히 배출시킨 후 금융관 연결해운다.

Grease filling method 구리스 충전방법

- Tank에 Grease를 충전하고자 할 때는 충전 필터를 사용하여 잠재 Pump 좌측부에 있는 Grease filling port를 통해서만 주입해야 한다.
- Grease의 충전은 유연 상단전 위치를 밀이 준수해야 한다.
- Tank의 왼쪽 커버를 열고 Grease를 주입하지 마십시오. Tank의 왼쪽 커버를 열고 Grease를 넣게 되면 Grease에 침유된 투확방의 원인이 된다.
- カートリジィ(カルトリジ Type)입력 Grease pump는 구리스가 충전된 카트리지를 교환字样시에 사용해야 한다.

AGP-700, 720 Changing the cartridge 카트리지 교환방법

- When you fill the grease in reservoir, the filling port in left side of pump should be used by filling pump.
- The grease have to be filled until upper limit line,
- Don't fill the grease by tank cap If it does, the grease can contain the air and causes flowing problem.
- The cartridge type should exchange with the grease contained.

The superiority of Cartridge type. 카트리지의 장점

- Grease 제품에 따른 개별분할과 반동력이 없으며, Cartridge 교환을 빠르고 쉽게 할 수 있어, 정밀적이고 깔끔한 환경을 유지할 수 있다.
- 일정장치로서 공기와 접촉이 없어 반감되지 않고 오일과 비누가로 분리되지 않으므로 장기간 사용할 수 있다.
- It can avoid dirty and complicated working by refilling the grease. Also it is so easy exchange of cartridge that can economical and clean environment.
- It keeps good quality of original grease without exposing the air and uses long time because it doesn't separate with soap.
Changing the cartridge

HPS Change the Cartridge 카트리지 교환방법

How to change the cartridge (HPS 자동 Grease pump) is 아래의 그림과 같은 순서로 Cartridge를 교환한다.

1. Push the housing and turn the lock ring to the counter clockwise direction to remove the cartridge.

   - Transparent 하우징 위를 지그시 누르고 Lock ring을 시계 반대방향으로 돌리면 Cartridge가 분리된다.

2. Set the battery into the battery pack according to the direction mark printed correctly (+, - marks.)

   - 안내되어 있는 방향에 맞추어 빗대기 팩을 삽입한다. (+, - 방향에 맞추기)

3. Fill the grease through the pump inlet by the grease gun.

   - Pump 안입구에 Grease gun을 이용하여 Grease를 주입한다.

4. Record the change date of cartridge on the label.

   - 라벨에 구리스 카트리지 교환일자를 기록한다.

5. Release the cartridge cap and push lightly the cartridge bottom until grease comes up the cap entrance.

   - 막을 뽑고를 벗고 카트리지 하단을 살짝 놓려 툴 부분까지 구리스가 나오도록 한다.

6. Combine cartridge with pump body not containing air along with pushing the cartridge bottom.

   - 카트리지 하단을 살짝 놓려 Air가 흡입되지 않도록 Pump 안입구와 결합한다.

7. Assemble the housing with pump after setting the spring.

   - Transparent 하우징에 스프링을 체결하여 Pump와 결합한다.

8. Push the housing and turn the lock ring to the clockwise direction to fix the cartridge.

   - Transparent 하우징 위를 지그시 누르고 Lock ring을 시계 방향으로 돌리면 Cartridge가 결합된다.

9. Push one of the bottom switches and check the pump operation and then connect distributor or pipe.

   - Pump 하단의 3개의 스위치 중 1개를 놓려 Pump가 동작되는지 확인한 후 분배관 또는 배관과 연결한다.
Company History

(View of factory)

1970. 5 아동기기조립 설립
1980. 4 성공무기가 설립, 오일 펌프 전문화 업체 지정 (No. 79-118)
1982. 2 군바람 산성계장 품질인증 체계 지정
(중국기관인증공사 No. 1-208)
1982. 5 우수품증비자 판매점 표준 지정 (No. 64760)
1987. 9 국산기계단기, 우수업체선정 무록리성 수상 (No. 97-104호)
1992. 12 젤세령 공로배 수상 (국세청)
1993. 5 해외시장 수출 신설상 수상 (대한무역진흥공사)
1996. 11 'OE' 용접기용품 인증 (TÜV Rheinland)
1999. 6 'EM' 기계류, 부품소재 무품질규격 인증 (한국기술표준원 No. 0999-233호)
1999. 11 ISO 9001 품질인증시스템 인증 (KSAI)
2000. 10 'CSA-c-us' 미국 및 캐나다 안전규격 인증 (CSA INTERNATIONAL)
2000. 11 수출품 경제협력개발공ˣ 산지부정관 표장 수상 (No. 54183)
2003. 12 수출품 경제협력개발공ˣ 표장 (No. 1421)
2004. 1 부품소재 산지부정관 표장 (기술보증원 No. 2004-6호)
2004. 11 중국화자 범인 설립, 아동기기조립유연공사
2005. 6 공장증축 및 개축, 구조 개선사업 완료
2006. 12 '공기기계산업' 공로 국무총리상 표장 (No. 1387호)

Established as A-RYUNG Machinery Industry Co., Ltd.
Designated technical manufacturer of oil pump by the Ministry of Trade and Industry.
Designated as an "Approved Company of Systematization of Small & Medium Industry" by the Ministry of Trade and Industry.
Awarded the Korea Presidential Citation for an "Excellent Small & Medium Enterprise."
Awarded "Excellent company for domestic machine development" by the Deputy Prime Minister.
Awarded "Self-Control company for National Tax" by National Tax Office.
Awarded an "Export Industry Prize for Overseas Market" by the Korea Trade Center, (KOTRA)
Authorized Conformity EC declaration by TÜV Rheinland.
Obtaining the ISO 9001 Certification by the KSAI-QA supported by IQ-NET.
Obtained the CSA-c-us mark, American-Canadian Safety Standard by CSA INTERNATIONAL.
Awarded "The prize of Export-developing Company" by Ministry of Trade and Industry.
Awarded "Prize of Trade Promotion and Industrial Development" from Ministry of Trade and Industry.
Awarded "Prize of excellent Exporter" by Jeonnam Province, Obtained "Certificate of quality reliance of parts and components" by Technology Standard Office in Ministry of Trade and Industry.
Opened China office in Dalian named "A-Ryung Dalian Co., Ltd."
Added building of factory and developing factory structure.
Awarded "Honor of machine development" by The Prime Minister.
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