

INSTRUCTION MANUAL  
OF  
MOTOR DRIVEN GREASE PUMP  
UE-04AN-KR-21-G

## 1. General

This motor driven grease pump is designed for use with dual line system. A pump rated at 14MPa respectively for two lines enhances the reliability of lubrication and permits a simple and rational automatic lubrication system to be established. Thus contributing to the efficient operation of installations.

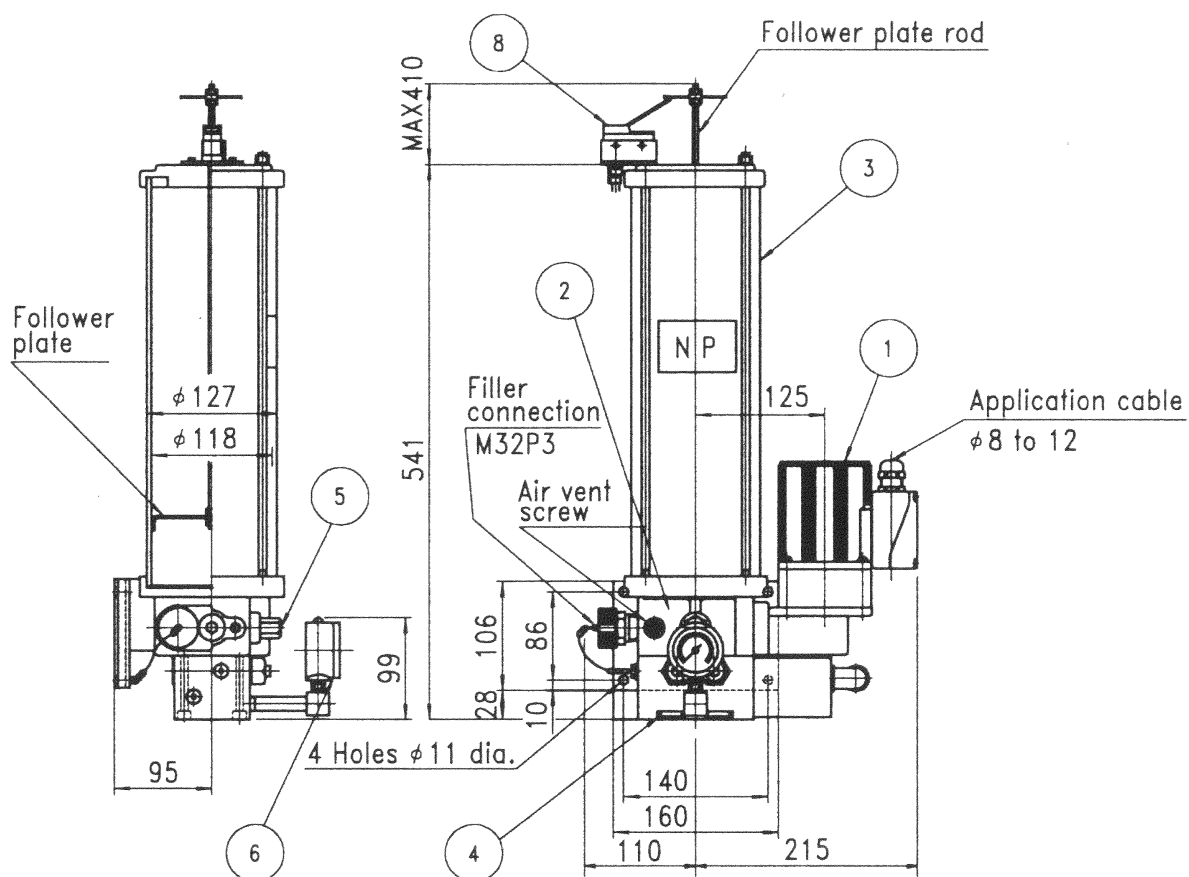
## 2. Features

- Compact pump mechanism  
Efficient and compact pump mechanism driven by geared motor.
- Simplified piston mechanism  
Maintenance and inspection simplified by the adoption of single piston and non spring check valve.
- High pressure lubrication & high reliability  
Complete lubrication assured by increased lubricating pressure up to 14MPa.
- Simplification of pipeline  
High pressure lubrication permits reduction in piping size and selection of simple pipeline provided with Reversing valve operating under lubricating pressure itself.
- Economical automatic lubrication  
Automatic lubrication can be effected readily at low costs by setting an electric control panel together with the Pump.

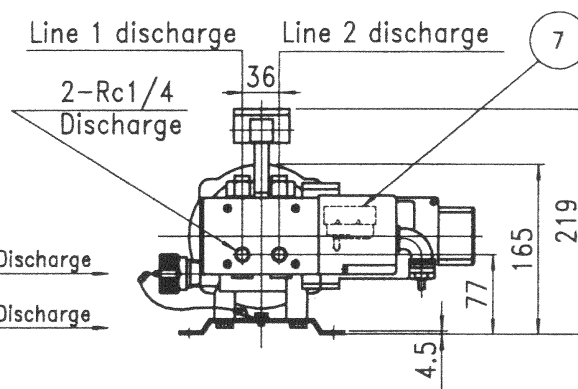
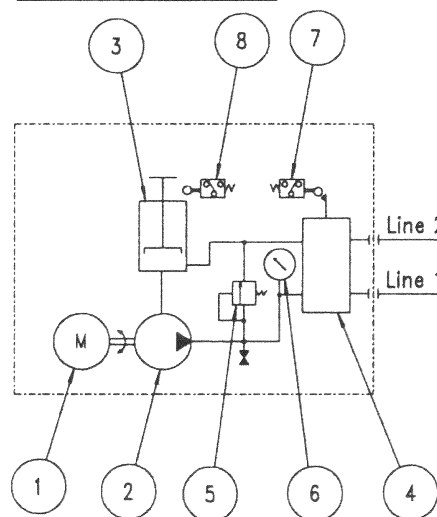
Specification

Division of Components	Item(Unit)	Type
		UE-04AN-KR-21-G
Pump	Discharge volume (cm <sup>3</sup> /min)	.21/25 (50/60Hz)
	Max. working Pressure (MPa)	14
Geared motor	Direction of revolution	Both direction
	Type	Total enclosed type・Flange type
	Output (W)	40
	Number of poles (P)	4
	Reduction ratio	1/50
Tank	Tank capacity (ℓ )	4
Reversing valve	Type	LRV-7W
	Pressure control range (MPa)	3 to 12
	Pipe connecting port	Rc1/4
	Control system	1/2 cycle lubrication
	Setting pressure (MPa)	10
Relief valve	Setting pressure (MPa)	16
Remarks	Piping system	Lance type
	Applicable grease	#0 to #2-NLGI consistency
Mass (kg)		22.5

- Be sure to use the pump indoors.



Graphic diagram



8	Z-15GW-B	Low level limit switch	1	
7	Z-15GW22-B	Limit switch of reversing valve	1	
6		Pressure gauge	1	for 20MPa
5		Safety valve	1	
4	LRV-7W	Reversing valva	1	
3	T-04A-KR	Tank ass'y (Steel tank)	1	
2	PE-04A	Pump ass'y	1	
1		Geared motor	1	
REF. NO.	PART NO.	PART NAME	QTY.	REMARKS

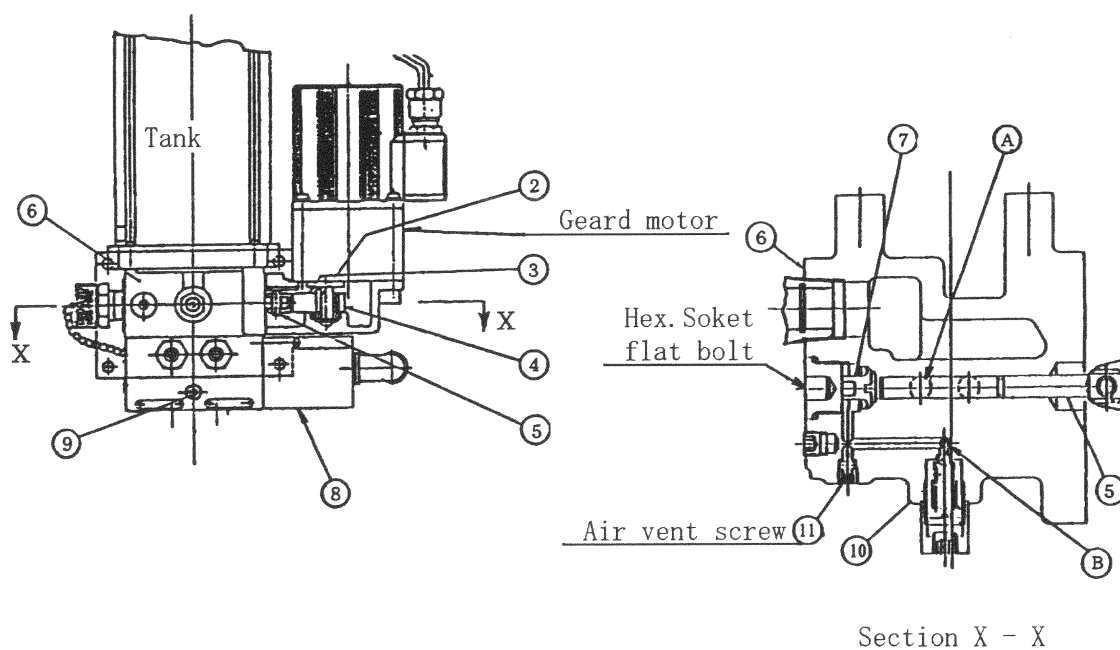
### 3. Description of Operation

#### 1) Pump unit

The rotational force produced by the start of geared motor is transmitted to ③ Eccentric connected to the motor through Drive Shaft with ② Parallel Key. This rotational force is further converted into the reciprocating motion of ⑤ Piston connected to the leading end of ④ Connecting Rod by the eccentric motion of the eccentric.

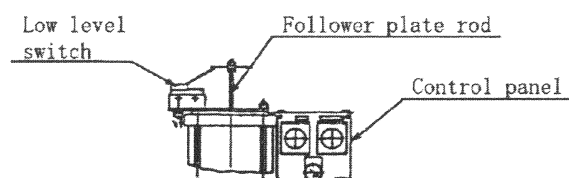
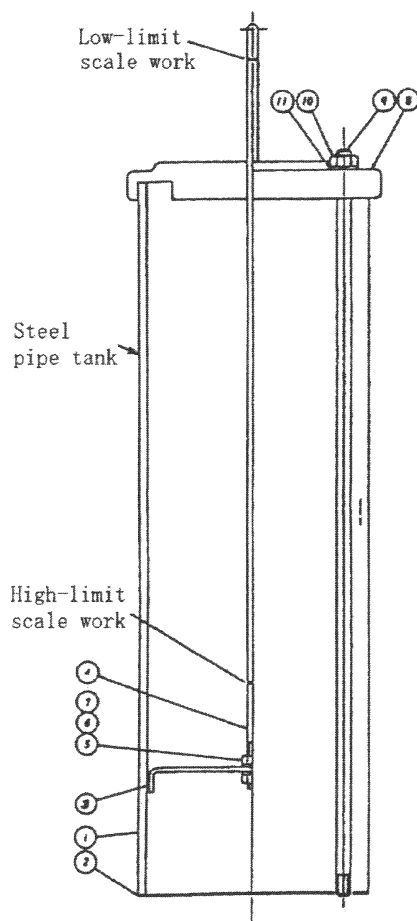
Grease is sucked in from the suction port ① of ⑥ Pump Cylinder and is delivered to the discharge port ② through ⑦ Check Packing in the compression process of the piston.

The pressurized grease coming into Type-LRV ⑧ Reversing Valve is delivered under pressure to the discharge ports of Line I and Line II and, at the same time, it is delivered to ⑨ Pressure Gauge and ⑩ Safety Valve also and is led to the drain to the tank for use in checking the discharge pressure and at the time of abnormally high pressure.



## 2) Tank unit

- To keep the up and down movements of grease level properly, the grease reservoir tank is provided with ③ Follower Plate which moves up and down along the tank inner surface which following the increase and decrease of grease. The grease level can be automatically controlled by setting with the control panel.
- In replenishment, the tank should not be replenished beyond the upper level limit.
- KR type pump has Low Level Limit Switch that detects the decrease of grease level. So that, it is possible to prevent the "Empty Driving" and to indicate "Abnormality" by using with Control Panel.

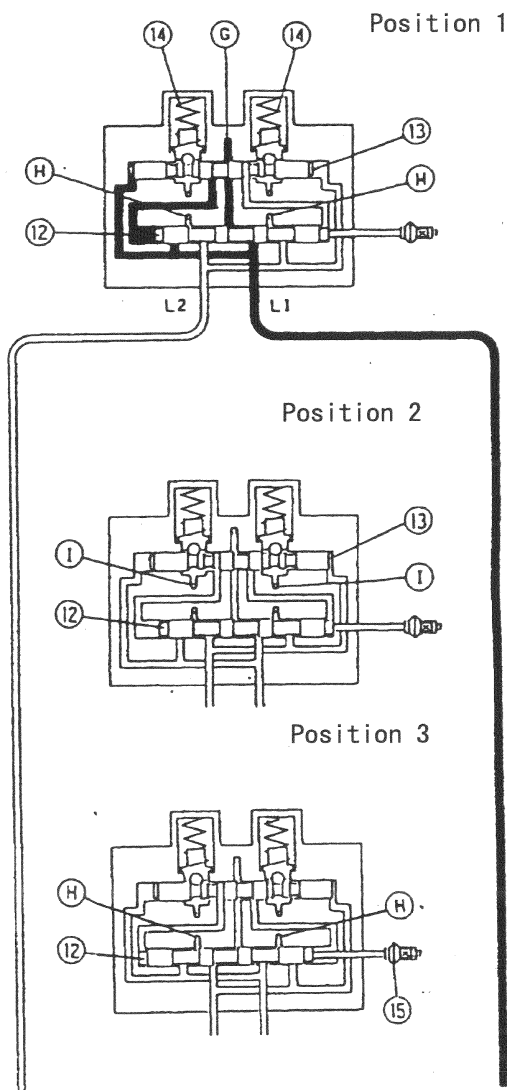


11	Spring washer	4	JIS B1251, No. 2, 8
10	Hex. nut	4	JIS B1181, Class 1, M8
9	Tank clamping bolt	4	
8	Tank top cover	1	
7	Plain washer	1	JIS B1256 Buffed $\phi 6$
6	Spring washer	1	JIS B1251, No. 2, 6
5	Hex. nut	2	JIS B1181, Class 1, M6
4	Follower plate rod	1	
3	Follower plate	1	
2	Tank packing	1	
1	Tank	1	
REF NO.	PART NAME	Q'TY	REMARKS
TITLE			
TANK UNIT ASSY T-04A-KR			

### 3) Reversing valve

- The Reversing valve is attached to the dual line system Lance type pump to switch the grease delivered under pressure from the pump alternately to the two lines of supply main pipe and control the supply pressure of the supply main pipe. The grease pressurized by the pump flows through the Reversing valve and actuates all the distributing valves. Thereafter, switching of the supply main pipe is effected by grease pressure with the increase of supply pressure up to the preset switching pressure.

Upon completion of the switching operation, the residual pressure in the main pipe and branch pipes is released into the tank.



#### Position 1

The grease delivered under pressure from the pump is delivered to the supply main pipe L1 (Line I) through the passage ⑥ by ⑫ Main Piston. At the same time, it pressurized the left end of ⑫ Main Piston. The supply main pipe L2 (Line II) is opened through the Reversing valve interior to the tank open port ⑨. After all the distributing valves have completed their operations, the pressure in L1 increases and exceeds the preset switching pressure, so that ⑬ Pilot Piston is pushed away to the right side against ⑭ Setting Spring.

#### Position 2

After ⑬ Pilot Piston has moved to the right side, the left side of ⑫ Main Piston is opened to Tank Open Port ① and, at the same time, the right side is pressurized and pushed away to the left side.

#### Position 3

After ⑫ Main Piston has moved to the left side, L1 together with the left side is opened to the tank open port ⑨ and the grease delivered under pressure from the pump becomes ready to be delivered to L2, so that switching is completed. ⑫ Main Piston is linked with ⑮ Cam for actuating the limit switch which operates each time when ⑫ Main Piston moves leftward or rightward, so that the electrical control of pump operation is effected.

#### 4) Relief valve

- The relief valve is incorporated into the side face of pump housing.  
In preparation for the case where the piping is blocked for some reason or other, this Relief valve is provided for the purpose of emergency pressure release and, therefore, it functions to protect the whole system by releasing the relieved grease pressure into the tank.

#### 4. Cautionary Instructions in Handling

##### 1) Applicable grease

Use such grease as is suited for centralized lubrication within the range of NLGI consistency No. #0 to #2 (provided that the consistency at the service temperature shall be not less than 240 – unmixed.)

##### 2) Charge with grease

- For replenishment, be sure to charge the tank with grease through Supply Port by the use of filling pump.
- Replenish with clean grease to prevent such inclusion of dust, air and foreign matter that may lead to a cause of failure.

##### 3) Start-up of operation

- Loosen Air Vent Screw and operate the pump until grease free from bubbles has come out of the pump.

##### 4) Where Reversing valve fails in changeover

- Loosen Air Vent Screw and remove air.
- Where the valve fails in changeover even after air discharge, remove the hexagon socket head plain plug and take out the check packing to conduct inspection and cleaning.  
If the check packing is damaged by the inclusion of dust, foreign matter, etc., replace it with the attached check packing.
- Loosen the plug on the end of piping and check if the air is completely removed from the inside of piping.
- Check that piping is correctly connected.
- Check piping for leakage, and repair, if leakage is located.
- When adjusting the switching pressure, loosen the lock nut and rotate the adjusting screw turning tight, thus the switching pressure being increased. After adjustment, tighten the lock nut completely.



INSTRUCTION MANUAL  
OF  
MOTOR DRIVEN GREASE PUMP  
UE-04AN-KZ-21-G

## 1. General

This motor driven grease pump is designed for use with dual line system. A pump rated at 14MPa respectively for two lines enhances the reliability of lubrication and permits a simple and rational automatic lubrication system to be established. Thus contributing to the efficient operation of installations.

## 2. Features

- Compact pump mechanism

Efficient and compact pump mechanism driven by geared motor.

- Simplified piston mechanism

Maintenance and inspection simplified by the adoption of single piston and non spring check valve.

- High pressure lubrication & high reliability

Complete lubrication assured by increased lubricating pressure up to 14MPa.

- Simplification of pipeline

High pressure lubrication permits reduction in piping size and selection of simple pipeline provided with Reversing valve operating under lubricating pressure itself.

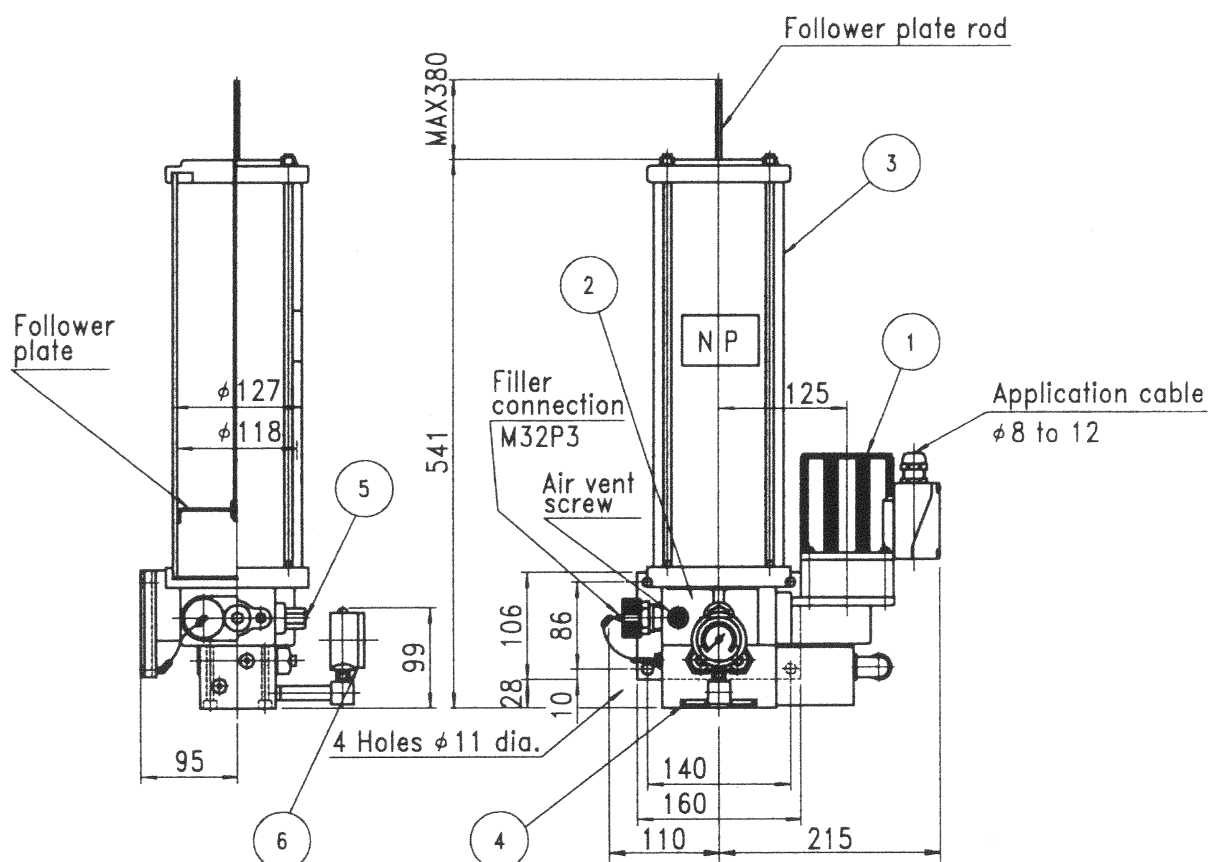
- Economical automatic lubrication

Automatic lubrication can be effected readily at low costs by setting an electric control panel together with the Pump.

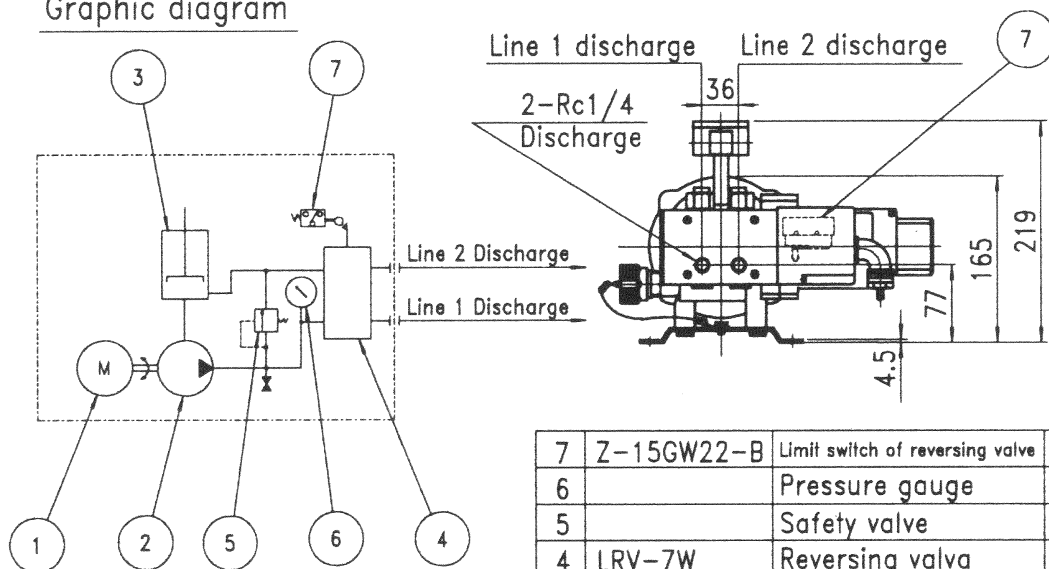
Specification

Division of Components	Item(Unit)	Type
		UE-04AN-KZ-21-G
Pump	Discharge volume (cm <sup>3</sup> /min)	21/25 (50/60Hz)
	Max. working Pressure (MPa)	14
Geared motor	Direction of revolution	Both direction
	Type	Total enclosed type · Flange type
	Output (W)	40
	Number of poles (P)	4
	Reduction ratio	1/50
Tank	Tank capacity (ℓ )	4
Reversing valve	Type	LRV-7W
	Pressure control range (MPa)	3 to 12
	Pipe connecting port	Rc1/4
	Control system	1/2 cycle lubrication
	Setting pressure (MPa)	10
Relief valve	Setting pressure (MPa)	16
Remarks	Piping system	Lance type
	Applicable grease	#0 to #2-NLGI consistency
Mass (kg)		22.5

- Be sure to use the pump indoors.



Graphic diagram



7	Z-15GW22-B	Limit switch of reversing valve	1	
6		Pressure gauge	1	for 20MPa
5		Safety valve	1	
4	LRV-7W	Reversing valva	1	
3	T-04A-KZ	Tank ass'y (Steel tank)	1	
2	PE-04A	Pump ass'y	1	
1		Geared motor	1	
REF. NO.	PART NO.	PART NAME	QTY.	REMARKS

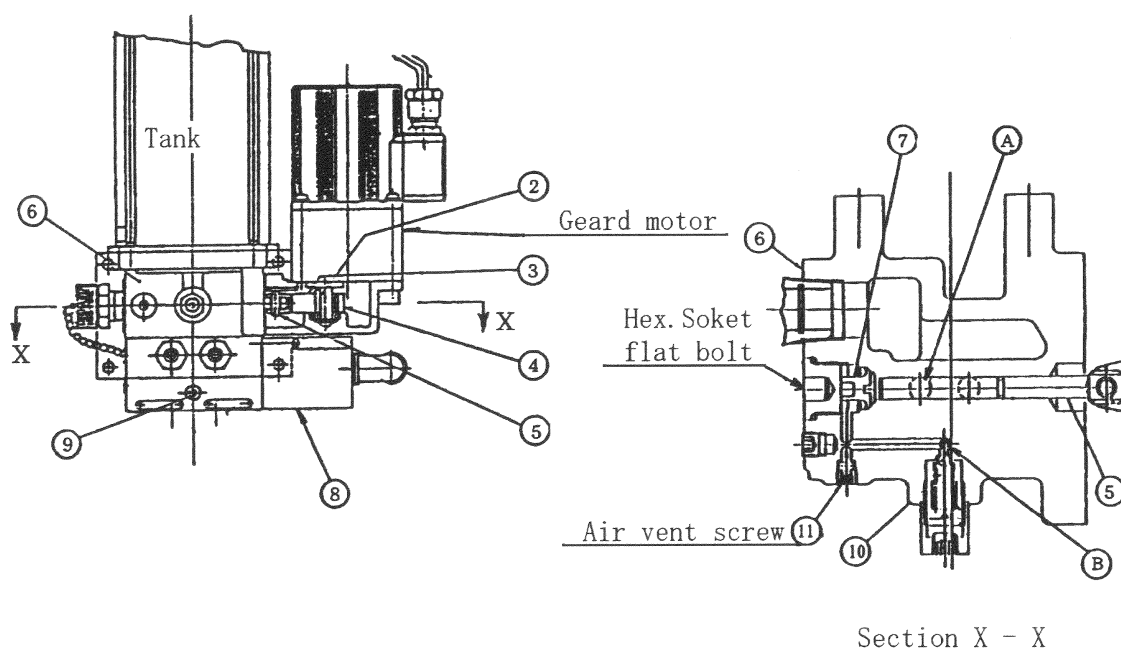
### 3. Description of Operation

#### 1) Pump unit

The rotational force produced by the start of geared motor is transmitted to ③ Eccentric connected to the motor through Drive Shaft with ② Parallel Key. This rotational force is further converted into the reciprocating motion of ⑤ Piston connected to the leading end of ④ Connecting Rod by the eccentric motion of the eccentric.

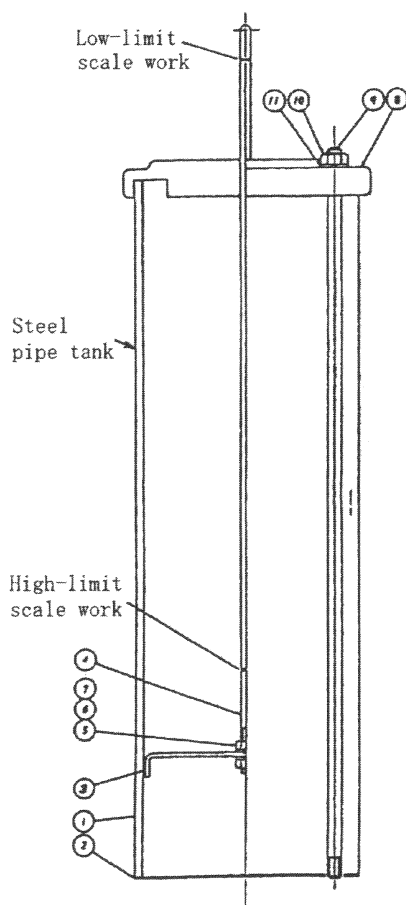
Grease is sucked in from the suction port ① of ⑥ Pump Cylinder and is delivered to the discharge port ② through ⑦ Check Packing in the compression process of the piston.

The pressurized grease coming into Type-LRV ⑧ Reversing Valve is delivered under pressure to the discharge ports of Line I and Line II and, at the same time, it is delivered to ⑨ Pressure Gauge and ⑩ Safety Valve also and is led to the drain to the tank for use in checking the discharge pressure and at the time of abnormally high pressure.



## 2) Tank unit

- To keep the up and down movements of grease level properly, the grease reservoir tank is provided with ③ Follower Plate which moves up and down along the tank inner surface which following the increase and decrease of grease. The grease level can be automatically controlled by setting with the control panel.
- In replenishment, the tank should not be replenished beyond the upper level limit.

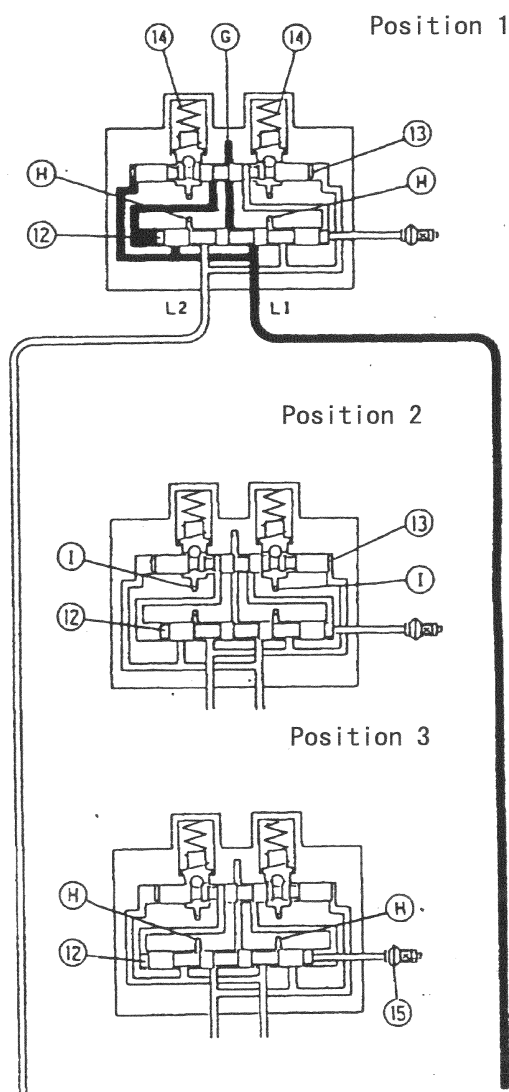


11	Spring washer	4	JIS B1251, No. 2, 8
10	Hex. nut	4	JIS B1181, Class 1, M8
9	Tank clamping bolt	4	
8	Tank top cover	1	
7	Plain washer	1	JIS B1256 Buffed $\phi 6$
6	Spring washer	1	JIS B1251, No. 2, 6
5	Hex. nut	2	JIS B1181, Class 1, M6
4	Follower plate rod	1	
3	Follower plate	1	
2	Tank packing	1	
1	Tank	1	
REF NO.	PART NAME	Q' TY	REMARKS
TITLE			
TANK UNIT ASSY T-04A-KZ			

### 3) Reversing valve

- The Reversing valve is attached to the dual line system Lance type pump to switch the grease delivered under pressure from the pump alternately to the two lines of supply main pipe and control the supply pressure of the supply main pipe. The grease pressurized by the pump flows through the Reversing valve and actuates all the distributing valves. Thereafter, switching of the supply main pipe is effected by grease pressure with the increase of supply pressure up to the preset switching pressure.

Upon completion of the switching operation, the residual pressure in the main pipe and branch pipes is released into the tank.



#### Position 1

The grease delivered under pressure from the pump is delivered to the supply main pipe L1 (Line I) through the passage G by ⑫ Main Piston. At the same time, it pressurized the left end of ⑫ Main Piston. The supply main pipe L2 (Line II) is opened through the Reversing valve interior to the tank open port H. After all the distributing valves have completed their operations, the pressure in L1 increases and exceeds the preset switching pressure the preset switching pressure, so that ⑬ Pilot Piston is pushed away to the right side against ⑭ Setting Spring.

#### Position 2

After ⑬ Pilot Piston has moved to the right side, the left side of ⑫ Main Piston is opened to Tank Open Port I and, at the same time, the right side is pressurized and pushed away to the left side.

#### Position 3

After ⑫ Main Piston has moved to the left side, L1 together with the left side is opened to the tank open port H and the grease delivered under pressure from the pump becomes ready to be delivered to L2, so that switching is completed. ⑫ Main Piston is linked with ⑮ Cam for actuating the limit switch which operates each time when ⑫ Main Piston moves leftward or rightward, so that the electrical control of pump operation is effected.

#### 4) Relief valve

- The relief valve is incorporated into the side face of pump housing.  
In preparation for the case where the piping is blocked for some reason or other, this Relief valve is provided for the purpose of emergency pressure release and, therefore, it functions to protect the whole system by releasing the relieved grease pressure into the tank.

#### 4. Cautionary Instructions in Handling

##### 1) Applicable grease

Use such grease as is suited for centralized lubrication within the range of NLGI consistency No. #0 to #2 (provided that the consistency at the service temperature shall be not less than 240 - unmixed.)

##### 2) Charge with grease

- For replenishment, be sure to charge the tank with grease through Supply Port by the use of filling pump.
- Replenish with clean grease to prevent such inclusion of dust, air and foreign matter that may lead to a cause of failure.

##### 3) Start-up of operation

- Loosen Air Vent Screw and operate the pump until grease free from bubbles has come out of the pump.

##### 4) Where Reversing valve fails in changeover

- Loosen Air Vent Screw and remove air.
- Where the valve fails in changeover even after air discharge, remove the hexagon socket head plain plug and take out the check packing to conduct inspection and cleaning.  
If the check packing is damaged by the inclusion of dust, foreign matter, etc., replace it with the attached check packing.
- Loosen the plug on the end of piping and check if the air is completely removed from the inside of piping.
- Check that piping is correctly connected.
- Check piping for leakage, and repair, if leakage is located.
- When adjusting the switching pressure, loosen the lock nut and rotate the adjusting screw turning tight, thus the switching pressure being increased. After adjustment, tighten the lock nut completely.



INSTRUCTION MANUAL  
OF  
MOTOR DRIVEN GREASE PUMP  
UE-04AN-PZ-21-G

## 1. General

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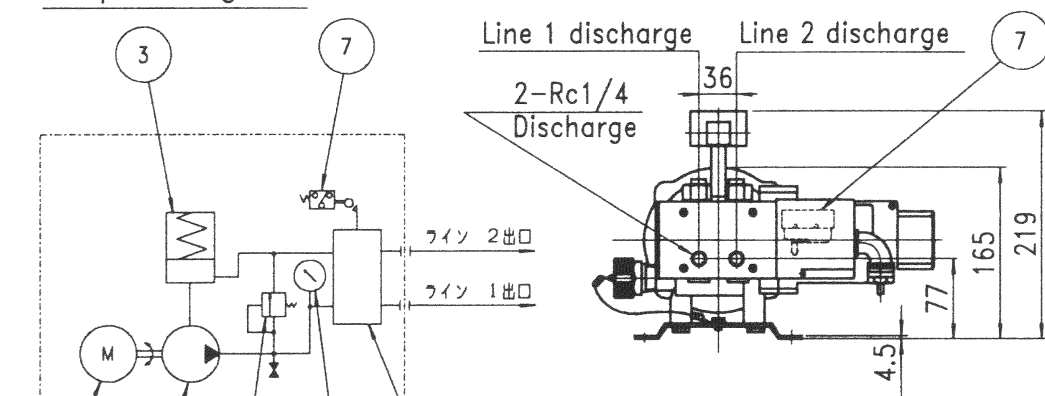
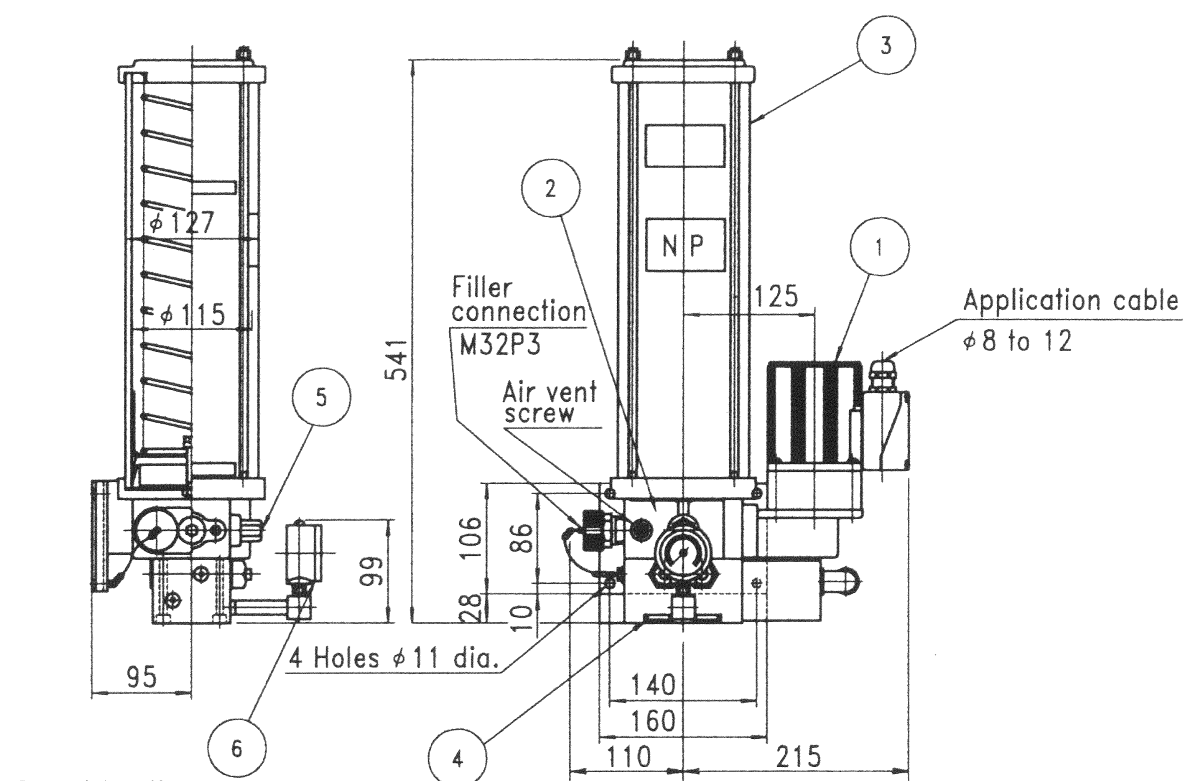
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Complete lubrication assured by increased lubricating pressure up to 14MPa.
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High pressure lubrication permits reduction in piping size and selection of simple pipeline provided with Reversing valve operating under lubricating pressure itself.
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Specification

Division of Components	Item(Unit)	Type
		UE-04AN-PZ-21-G
Pump	Discharge volume (cm <sup>3</sup> /min)	21/25 (50/60Hz)
	Max. working Pressure (MPa)	14
Geared motor	Direction of revolution	Both direction
	Type	Total enclosed type・Flange type
	Output (W)	40
	Number of poles (P)	4
	Reduction ratio	1/50
Tank	Tank capacity (ℓ )	3
Reversing valve	Type	LRV-7W
	Pressure control range (MPa)	3 to 12
	Pipe connecting port	Rc1/4
	Control system	1/2 cycle lubrication
	Setting pressure (MPa)	10
Relief valve	Setting pressure (MPa)	16
Remarks	Piping system	Lance type
	Applicable grease	#0 to #2-NLGI consistency
Mass (kg)		21.5

・ Be sure to use the pump indoors.



7	Z-15GW22-B	Limit switch of reversing valve	1	
6		Pressure gauge	1	for 20MPa
5		Safety valve	1	
4	LRV-7W	Reversing valva	1	
3	T-04A-PZ	Tank ass'y (Plastic tank)	1	
2	PE-04A	Pump ass'y	1	
1		Geared motor	1	
REF. NO.	PART NO.	PART NAME	QTY.	REMARKS

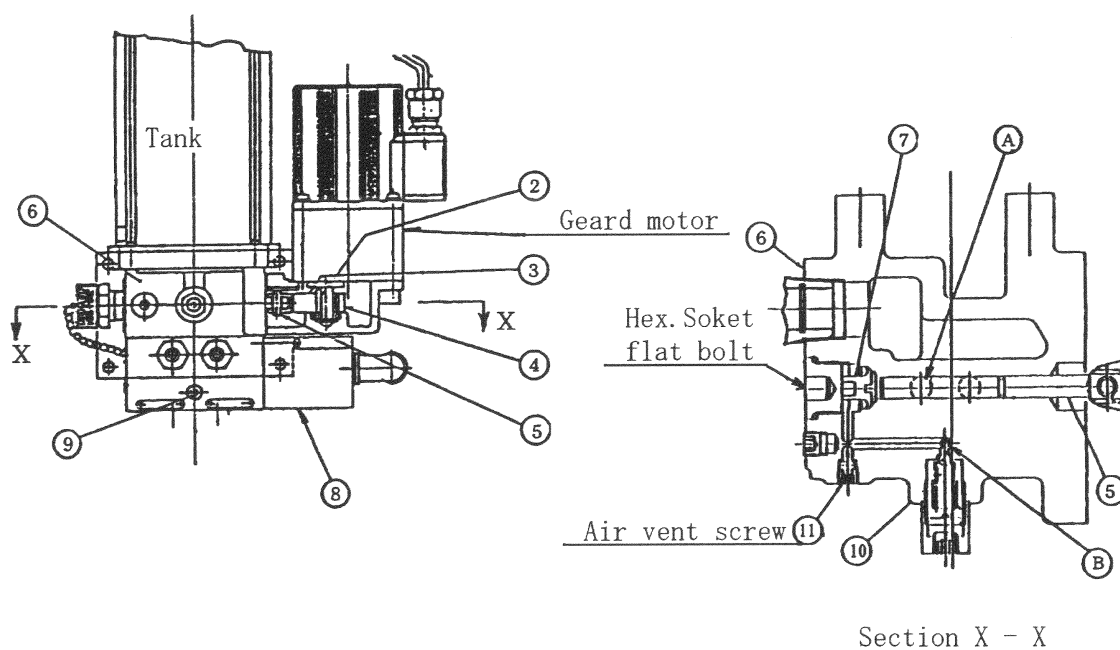
### 3. Description of Operation

#### 1) Pump unit

• The rotational force produced by the start of geared motor is transmitted to ③ Eccentric connected to the motor through Drive Shaft with ② Parallel Key. This rotational force is further converted into the reciprocating motion of ⑤ Piston connected to the leading end of ④ Connecting Rod by the eccentric motion of the eccentric.

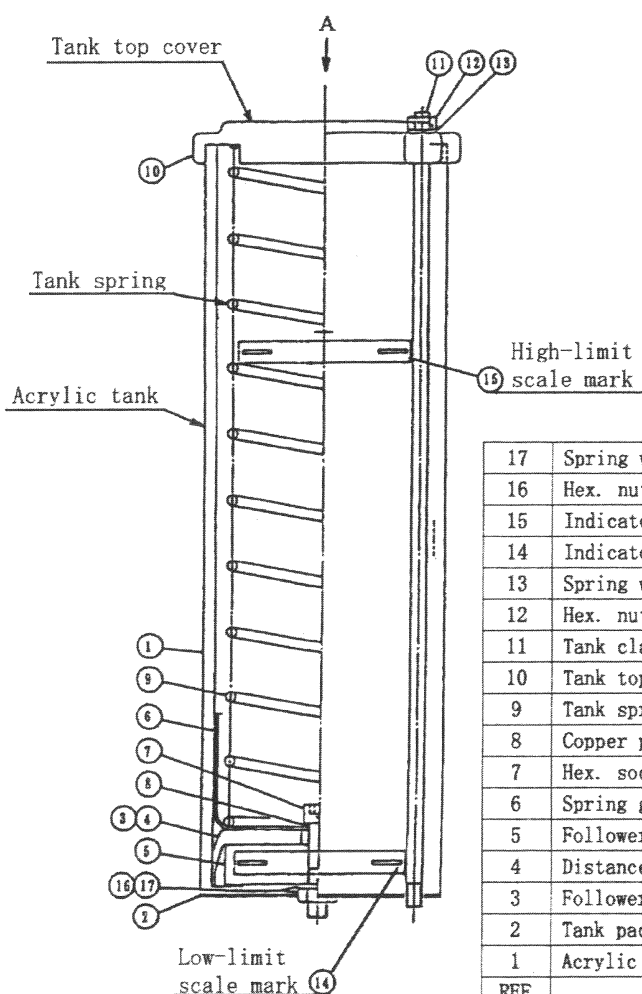
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The pressurized grease coming into Type-LRV ⑧ Reversing Valve is delivered under pressure to the discharge ports of Line I and Line II and, at the same time, it is delivered to ⑨ Pressure Gauge and ⑩ Safety Valve also and is led to the drain to the tank for use in checking the discharge pressure and at the time of abnormally high pressure.



## 2) Tank unit

- To keep the up and down movements of grease level properly, the grease reservoir tank is provided with ③ Follower Plate which moves up and down along the tank inner surface which following the increase and decrease of grease. The grease level can be automatically controlled by setting with the control panel.
- In replenishment, the tank should not be replenished beyond the upper level limit.
- PZ type has a self-contained tank spring, where grease remains inside the tank, do not disassemble the tank top.

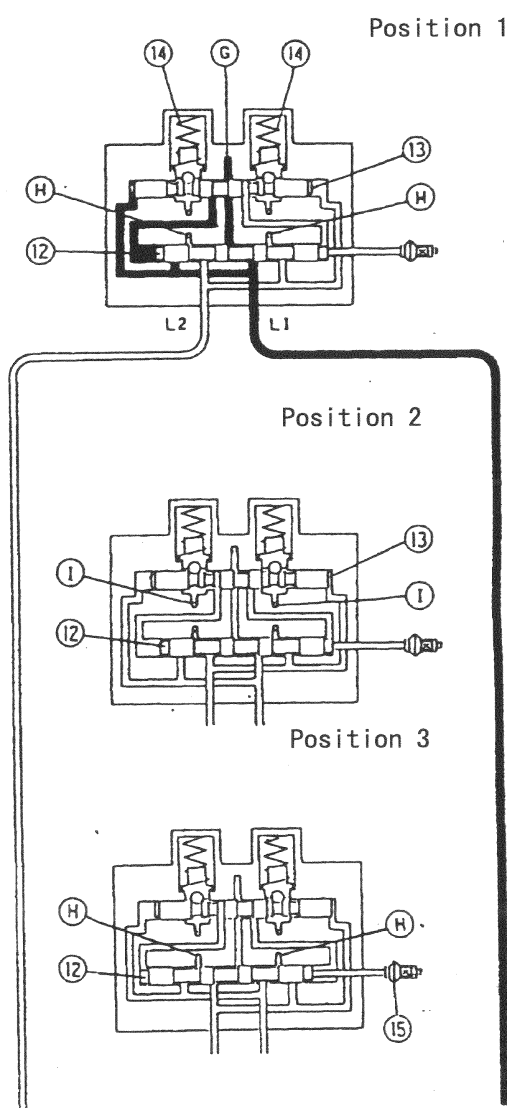


17	Spring washer	1	JIS B1251, No. 2, 10
16	Hex. nut	1	JIS B1181, Class 1, M10
15	Indicator plate(top)	1	
14	Indicator plate(bottom)	1	
13	Spring washer	4	JIS B1251, No. 2, 8
12	Hex. nut	4	JIS B1181, Class 1, M8
11	Tank clamping bolt	4	
10	Tank top cover	1	
9	Tank spring	1	
8	Copper packing	1	$\phi 13 \times \phi 10 \times T2$
7	Hex. socket head bolt	1	JIS B1176, M10 $\times$ 50
6	Spring guide	1	
5	Follower plate retainer	1	
4	Distance piece	1	
3	Follower plate	1	
2	Tank packing	1	
1	Acrylic tank	1	
REF NO.	PART NAME	Q'TY	REMARKS
TITLE			
TANK UNIT ASSY T-04A-PZ			

### 3) Reversing valve

- The Reversing valve is attached to the dual line system Lance type pump to switch the grease delivered under pressure from the pump alternately to the two lines of supply main pipe and control the supply pressure of the supply main pipe. The grease pressurized by the pump flows through the Reversing valve and actuates all the distributing valves. Thereafter, switching of the supply main pipe is effected by grease pressure with the increase of supply pressure up to the preset switching pressure.

Upon completion of the switching operation, the residual pressure in the main pipe and branch pipes is released into the tank.



#### Position 1

The grease delivered under pressure from the pump is delivered to the supply main pipe L1 (Line I) through the passage G by 12 Main Piston. At the same time, it pressurized the left end of 12 Main Piston. The supply main pipe L2 (Line II) is opened through the Reversing valve interior to the tank open port H. After all the distributing valves have completed their operations, the pressure in L1 increases and exceeds the preset switching pressure, so that 13 Pilot Piston is pushed away to the right side against 14 Setting Spring.

#### Position 2

After 13 Pilot Piston has moved to the right side, the left side of 12 Main Piston is opened to Tank Open Port I and, at the same time, the right side is pressurized and pushed away to the left side.

#### Position 3

After 12 Main Piston has moved to the left side, L1 together with the left side is opened to the tank open port H and the grease delivered under pressure from the pump becomes ready to be delivered to L2, so that switching is completed. 12 Main Piston is linked with 15 Cam for actuating the limit switch which operates each time when 12 Main Piston moves leftward or rightward, so that the electrical control of pump operation is effected.

#### 4) Relief valve

- The relief valve is incorporated into the side face of pump housing.  
In preparation for the case where the piping is blocked for some reason or other, this Relief valve is provided for the purpose of emergency pressure release and, therefore, it functions to protect the whole system by releasing the relieved grease pressure into the tank.

#### 4. Cautionary Instructions in Handling

##### 1) Applicable grease

Use such grease as is suited for centralized lubrication within the range of NLGI consistency No. #0 to #2 (provided that the consistency at the service temperature shall be not less than 240 - unmixed.)

##### 2) Charge with grease

- For replenishment, be sure to charge the tank with grease through Supply Port by the use of filling pump.
- Replenish with clean grease to prevent such inclusion of dust, air and foreign matter that may lead to a cause of failure.
- When filling tank at first, the air on the bottom of follower plate can be discharged from the small hole on the side face by filling up to the high limit of tank.

##### 3) Start-up of operation

- Loosen Air Vent Screw and operate the pump until grease free from bubbles has come out of the pump.

##### 4) Where Reversing valve fails in changeover

- Loosen Air Vent Screw and remove air.
- Where the valve fails in changeover even after air discharge, remove the hexagon socket head plain plug and take out the check packing to conduct inspection and cleaning.  
If the check packing is damaged by the inclusion of dust, foreign matter, etc., replace it with the attached check packing.
- Loosen the plug on the end of piping and check if the air is completely removed from the inside of piping.
- Check that piping is correctly connected.
- Check piping for leakage, and repair, if leakage is located.
- When adjusting the switching pressure, loosen the lock nut and rotate the adjusting screw turning tight, thus the switching pressure being increased. After adjustment, tighten the lock nut completely.