

ECONO - SIGLE LINE SYSTEMS

ECONO-SINGLE LINE SYSTEMS

INSTRUCTION MANUAL

HAND OPERATED PUMP (KSP-105)

MESURING VALVE (KU, KL, KM, KJ)

KOWA CORPORATION
OSAKA JAPAN

2019.1.16

1. General description

The centralized lubricating system consists of a hand-operated pump (KSP-105) and a measuring valve (KU,KJ,KM,KL).

The grease or oil supplied by the pressure of pump operation is measured in the prescribed quantity by the measuring valve then is supplied to the bearings.

By reciprocating motion of the measuring valve indicator stem it is possible to check whether or not the grease or oil is supplied completely. One reciprocating of the indicator stem indicates that lubrication is completed.

2. Operation

2-1 Hand-operated pump KSP-105

The hand-operated pump KSP-105 is used as a lubricating system called " Single line ", and is provided with a tank either for grease or oil.

(1) Pump operation

When the handle of this pump is moved forward and backward, the piston is operated to absorb the grease or oil in the tank and to discharge the absorbed grease or oil outside through the check valve.

The tank is made of a transparent synthetic resin and oil level can be checked easily from the outside.

The grease or oil discharge port are provided at the left side of the handle.

{ The tank is made of a steel pipe, when grease level can be checked
from level rod. }

(2) Grease or oil supply

Grease supply

Tube packed grease (300 gr) or grease filling pump is supplied through the feed inlet (M12,P1.25) provided on the pump body.

Use clean grease with fluidity of about 350, #0 National Lubricating Grease Institute or lower.

Be careful, at this time , to prevent air and dust from being included in the gease.

Note : Strictly refrain from removing the cover and flower plate at the top of the tank as it allows dust and air into the tank.

Oil supply

Clean oil is supplied by removing the cover at the top of the tank.

Keep the filter of the oil feed inlet clean at all time and wash off any dust staying immediately.

(3) Air drawing

When air is allowed into the pump by error (resistance to handle operation goes out), loosen the air vent screw at the pump body for handle operation.

Close the air vent screw when air is drawn through the air vent screw and grease starts to come out.

(4) Extra heavy resistance to pump handle

If the handle operation is felt too heavily, the supply pipe is broken or the measuring valve is in trouble.

Overhaul the measuring valve.

3. Inspection

When fixing, piping and grease replenishment of the lubricating system complete, check the following points.

3-1 Draw air from the pump.

- Operate the pump handle while loosening the air vent screw.

3-2 If the indicator stem of the measuring valve reciprocates when the pump handle is moved, it means that the fixing is completed.

3-3 Check the pipe joints for no grease leakage.

4. Maintenance and inspection

For grease feeding, it is essential that each part of the lubricating system is filled with grease fully.

Smooth feeding of grease fails if any air or other foreign substance is allowed inside.

4-1 Condition of troubles

- a. No reaction is felt even when the handle is operated.
- b. The number of times of handle operation substantially increases.
- c. The indicator stem of the measuring valve does not move.
- d. Handle operation only moves the follower plate in the tank up and down slightly but fails to absorb the grease.

4-2 Trouble-shooting

Cause	Measures
Air is allowed during grease supply.	Check grease filling pump.
Handle was operated without knowing empty tank.	Supply grease to the tank and draw out the air.
Air is staying in the pipe.	Grease filling in the pipe failed during the piping work. Fill the pipe with grease.
Air is allowed in the pump plunger and measuring valve.	Draw out air through the pump discharge outlet.

4-3 Foreign substance allowed into the system can cause the following troubles.

Troubles

- a. The handle can not be moved.
- b. The indicator stem of the measuring valve does not move.

4-4 Trouble-shooting

Check the pump first then the measuring valve.

Foreign substance is often the cause of these troubles. Check the following points.

- a. Clean the check valve at the opposite side to the pump handle with kerosene.

- b. Clogging of plunger

As the plunger is a precision finish part, it is necessary to clean or replace the pump depending on the field condition.

- c. Measuring valve

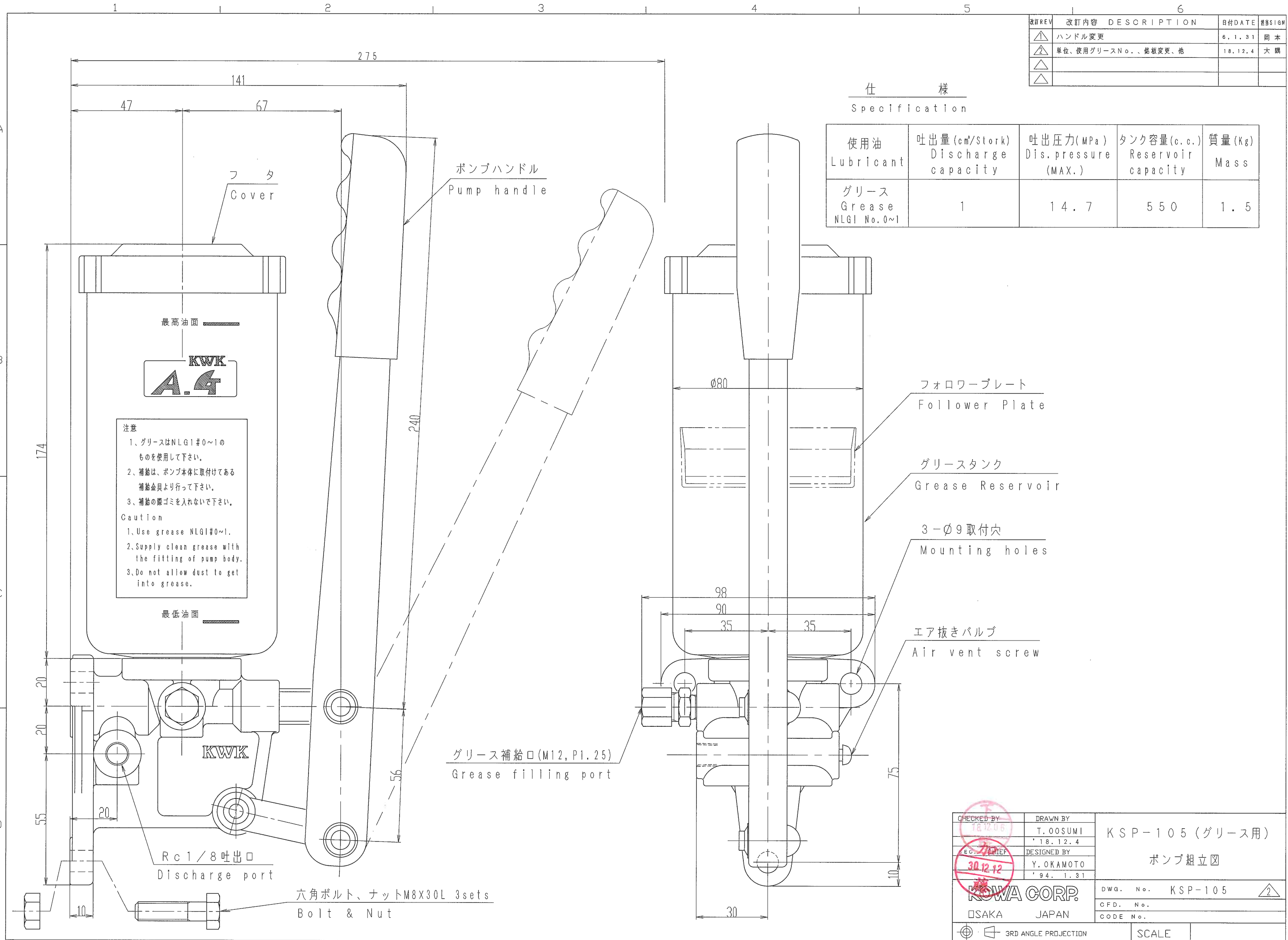
The measuring valve is made to a simple structure with three pistons to eight pistons but each part is finished precisely and operation fails if the parts are clogged with dust. If the indicator stem does not function even when grease is supplied to the measuring valve (the piping is removed at this time), the internal parts must be cleaned and reassembled or replaced depending on the field condition.

- d. Dust clogging in piping or supply piping is broken.

Replace the piping.

5. Used grease

Use a grease of about 310 to 385 fluidity (NIGI #0 to 1).



改訂REV	改訂内容 DESCRIPTION	日付DATE	担当者DESIGN
△1	ハンドル変更	8.1.31	岡本
△2	単位、使用グリースNo.、銘板変更、他	18.12.4	大隅
△			
△			

仕様
Specification

使用油 Lubricant	吐出量 (cm³/Stroke) Discharge capacity	吐出圧力 (MPa) (MAX.) Dis. pressure	タンク容量 (c.c.) Reservoir capacity	質量 (Kg) Mass
グリース Grease NLGI No.0~1	1	14.7	550	1.5

CHECKED BY
18.12.06

DESIGNED BY
Y. OKAMOTO
'94. 1. 31

OSAKA JAPAN

DRAWN BY
T. OOSUMI
'18. 12. 4

DWG. No. KSP-105

CFD. No.

CODE No.

KSP-105 (グリース用)

ポンプ組立図

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3RD ANGLE PROJECTION

SCALE

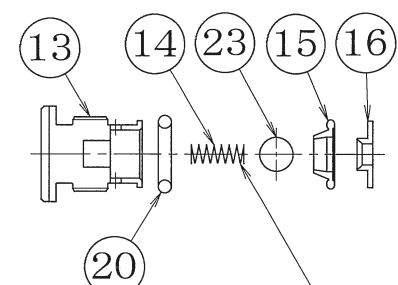
改訂REV	改訂内容 DESCRIPTION	日付DATE	設計SIGN
△	部品番号追加、エア抜き変更、英文併記	19.01.15	大隅
△			
△			
△			

A

B

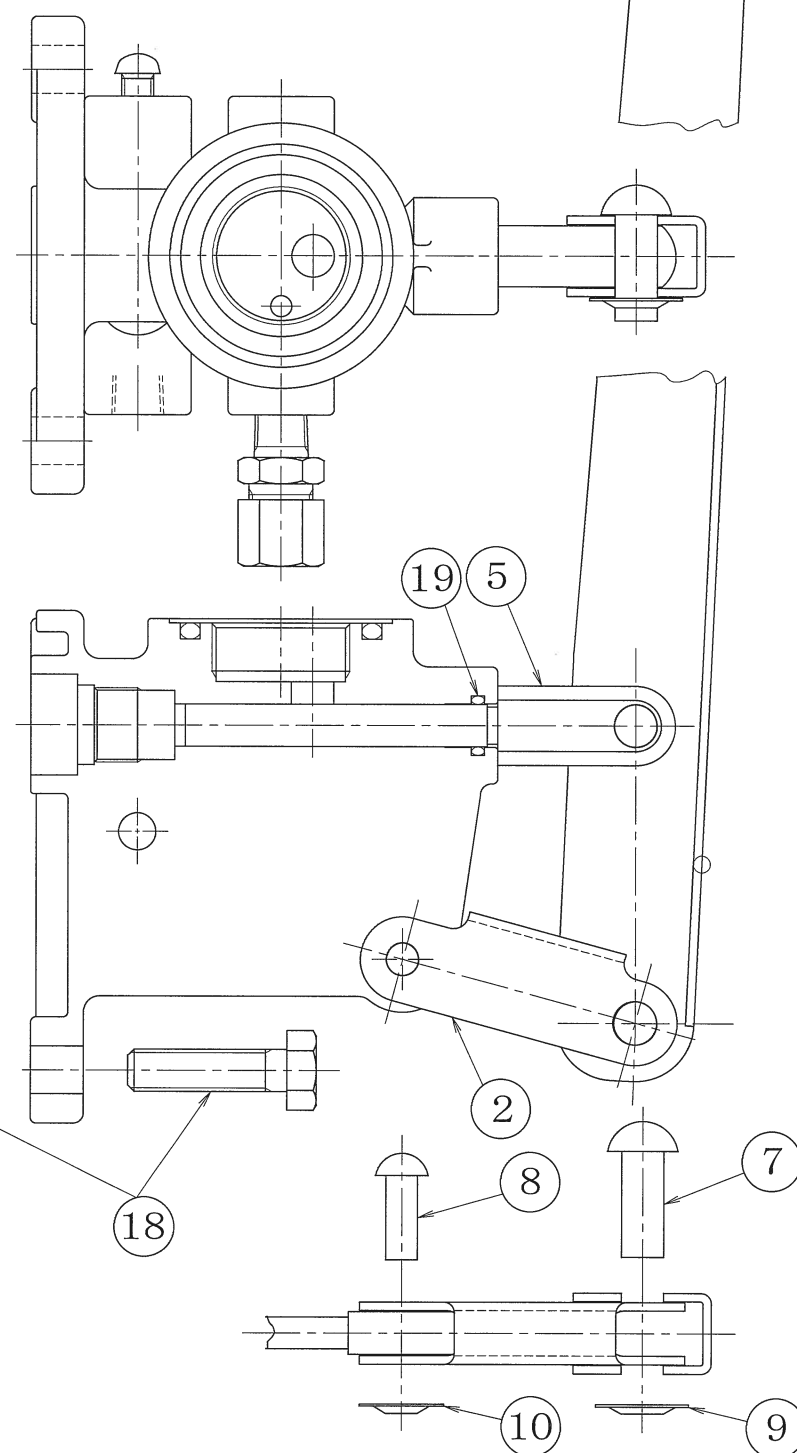
C

D



グリース塗布のこと
(組立時の抜け止め)

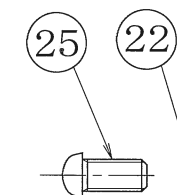
Applying grease
(to prevent falling out
during assembly)



ピンとプッシュナットの組込みは
専用治具使用のこと

For installation of pin and bushing nut,
use special jig.

11



21

Rc1/8

シールトテープ巻付のこと
Please wind the seal tape.

4

3

M12 P1.25

17

本体から抜け落ちないこと
Install so that it will not
come off the main body.

24

SECTION A-A

プランジャーを本体に組み込み時

先端にグリースを塗布すること

When installing the plunger in the
main body, apply grease to the tip.

1

6

←A

KSP-105
KOWA CORP.
OSAKA JAPAN

12

←A

CHECKED BY 19.1.15	DRAWN BY T.OOSUMI 19.01.09	KSP-105	
DESIGNED BY H.KATO 92.12.20		ポンプボディ分解図	
KOWA CORP. OSAKA JAPAN		KSP-105 Pump body Disassembly	
3RD ANGLE PROJECTION		DWG. No. AKSP105	△
		CFD. No.	
		CODE No. C1001	
		SCALE	1/1

KSP-105 ポンプボディ分解図 用品リスト

KSP-105 Pump body Disassembly parts list

品番 No.	名称 part name	部品番号 part No.	数量 quantity	備考 remarks
1	ハンドル KSP-105用 Handle for KSP-105	C1003	1	KS-803797
2	リンク金物 Link hardware	C1008	1	KS-804062
3	充填金具キャップ Filling fitting cap	C1015	1	KS-800154
4	KSPポンプ補給口金具 KSP pump supply port fitting	C1016	1	φ8X1/8 B1
5	プランジャ Plunger	C1017	1	KS-801472
6	KSP-105ポンプ本体 KSP-105 Pump body	C1018	1	KS-800037
7	丸リベット Round rivet	C1019	2	φ8×20L
8	丸リベット Round rivet	C1020	1	φ6×15L
9	ブッシュナット Bush nut	C1021	2	φ8
10	ブッシュナット Bush nut	C1022	1	φ6
11	ハンドルキャップ(青色) Handle cap (blue)	C1023	1	KS-804091
12	型式銘板KSP-105 Model nameplate KSP-105	V1001	1	KS-803674 50×18×40
13	チェッキ本体 Check body	X1001	1	KS-801474
14	チェッキバックアップリング Check backup ring	X1002	1	KS-801475
15	シートパッキング Sheet packing	X1003	1	KS-800913
16	コイルスプリング Coil spring	X1004	1	KS-801477
17	エンドキャップ(赤) End cap (red)	X4001	1	KS-800867 RC 1/8
18	六角ボルト、ナット Hexagon bolt nut	Y9001	3	M8×30L
19	Oリング O ring	Z1105	1	1B P8
20	Oリング O ring	Z1108	1	1B P11
21	Oリング O ring	Z1117	1	1B P32
22	鋼球 Steel ball	Z2001	1	1/8(φ3.175)
23	鋼球 Steel ball	Z2005	1	1/4(φ6.35)
24	沈みプラグ Sunk head plug	Z5001	1	R1/8
25	十字穴付ナベ小ネジ Round head Phillips screw		1	M6×12L