Precision Surface Grinder

Maintenance Manual

KGS-2040 AH/AHD

Edition 1

2025/03

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1.1 The setting, adjustments and trouble-shooting by the maintenance crew

Maintenance or adjustments to the electrical facilities and electronic elements shall be performed by the personnel who have received technical training

Code	Abnormality	Causes of fault	Inspection method	Trouble-shooting	Parts number
A01	Fails to crossfeed automatically	1) Forward/backward pushbutton not functioning	1) Take visual inspection 2) Check it with multimeter.	1) Replace Green φ 22	7950-22105100
		2) Malfunctioned forward/backward selection Sw	2) Ditto	2) Replace 3-sec. φ 22	7970-22222313
		3) Failure of limit Sw	3) Use multimeter to test if COM & NO are conductive,.	3) Replace the front or rear limit Sw.	7075-11315310
		4) Fault of proximity Sw	4) Check the proximity sw.	4) Replace the proximity Sw.	9930-00000052
		5) Crossfeed motors not functioning	5) Check motor power line with multimeter	5) Replace the crossfeed motors	7131-02323110
		6) Broken timing belt	6) Visual inspection	6) Replace the timing belt	2015-32210000
A02	The manual crossfeed much too tight or stuck	1) Lack of oil for crossfeed leadscrew	1) Move saddle forward, then take visual inspection or feel by hand	1) Replenish oil (#2 lithium-base oil)	
		2) Lack of oil for crossfeed slideways	2) Move saddle forward and inspect the crossfeed slideways	2) Replenish lub.	
		3) Loosen fastening screws for crossfeed leadscrew	3) ① Turn the crossfeed hand-wheel forwards and backwards to check the backlash. ② use flash light for inspection	3) Adjust the crossfeed leadscrew fasten screws	

Code	Abnormality	Causes of fault	Inspection method	Trouble-shooting	Parts number
A02	The manual crossfeed much too tight or stuck	4) Damaged bearings for the housing	4) Remove the panel for inspection, disassemble the housing and inspect the bearing	4) Replace the bearings	
		5) Damaged crossfeed leadscrew	5) Turn the crossfeed hand wheels forwards and backwards to check the backlash.	5) Replace the crossfeed leadscrew	
A03	Fails to move longitudinally	1) Damaged starting push-button	1) Conduct visual inspection and use multimeter to test OFF Sw.	1) Replace dia. 22 illuminated push-button	
		2) Failure of solenoid	2) ① Use Multimeter to test coil ② disassemble solenoid to test if the piston is stuck	2) Replace the solenoid	
		3) Fault of proximity Sw.	3) Check if the lamp is on	3) Replace the proximity Sw.	9930-00000052
		4) Malfunction of hydraulic cylinder	4) Disassemble the cylinder and see if it is damaged.	4) Replace the hydraulic cylinder	0302-41640000
		5) Leakage of hydraulic hose	5) Check if connector is loose or the hose is broken	5) Replace hydraulic hoses	
		6) Malfunction of hydraulic pump motor	6) Use multimeter to test if motor coil is short-circuited.	6) Replace the hydraulic pump motor	

Code	Abnormality	Causes of fault	Inspection method	Trouble-shooting	Parts number
A04	Excessive vibration for table longitudinal motion	1) Loosened adjusting screws of hydraulic valve	1) Take visual inspection to see if the leveling pad has excessive vibration	1) Make adjustments	
		2) Loosened hydraulic cylinder	2) Check if the hydraulic cylinder loosens.	2) Adjust and tighten it	
		3) Lack of oil for the table slideways	3) Take visual inspection, use hand to feel it and use compressed air to get rid of impurities from φ4 copper oil pipe	3) Inspect lub. pump or oil circuit	
		4) Loosen leveling screws	4) Check the fastening of leveling screws and pads	4) Align the level of the machine	
A05	Table longitudinal motion by handwheel is too heavy	1) Lack of oil for the table slide ways	1) Take visual inspection, use hand to feel it and use compressed air to get rid of impurities from φ4 copper oil pipe	1) Inspect lub pump or oil circuit	
		2) Hydraulic cylinder malfunction	2) Disassemble hydraulic cylinder and see the damage of the pipe	2) Change hydraulic cylinder	
A06	Inaccurate downfeed Waves pattern on the work pieces	1) Lack of oil for the vertical guideways	1) Take visual inspection and use compressed air to clean φ4 copper oil pipe	1) Inspect the oil circuit or lub pump.	
		2) Loose of wheelhead	2) Use micrometer to measure out the wheelhead, use hand to push down and up to acquire the data of the loosening	2) Adjust the gap between the wheelhead and mounting plate.	

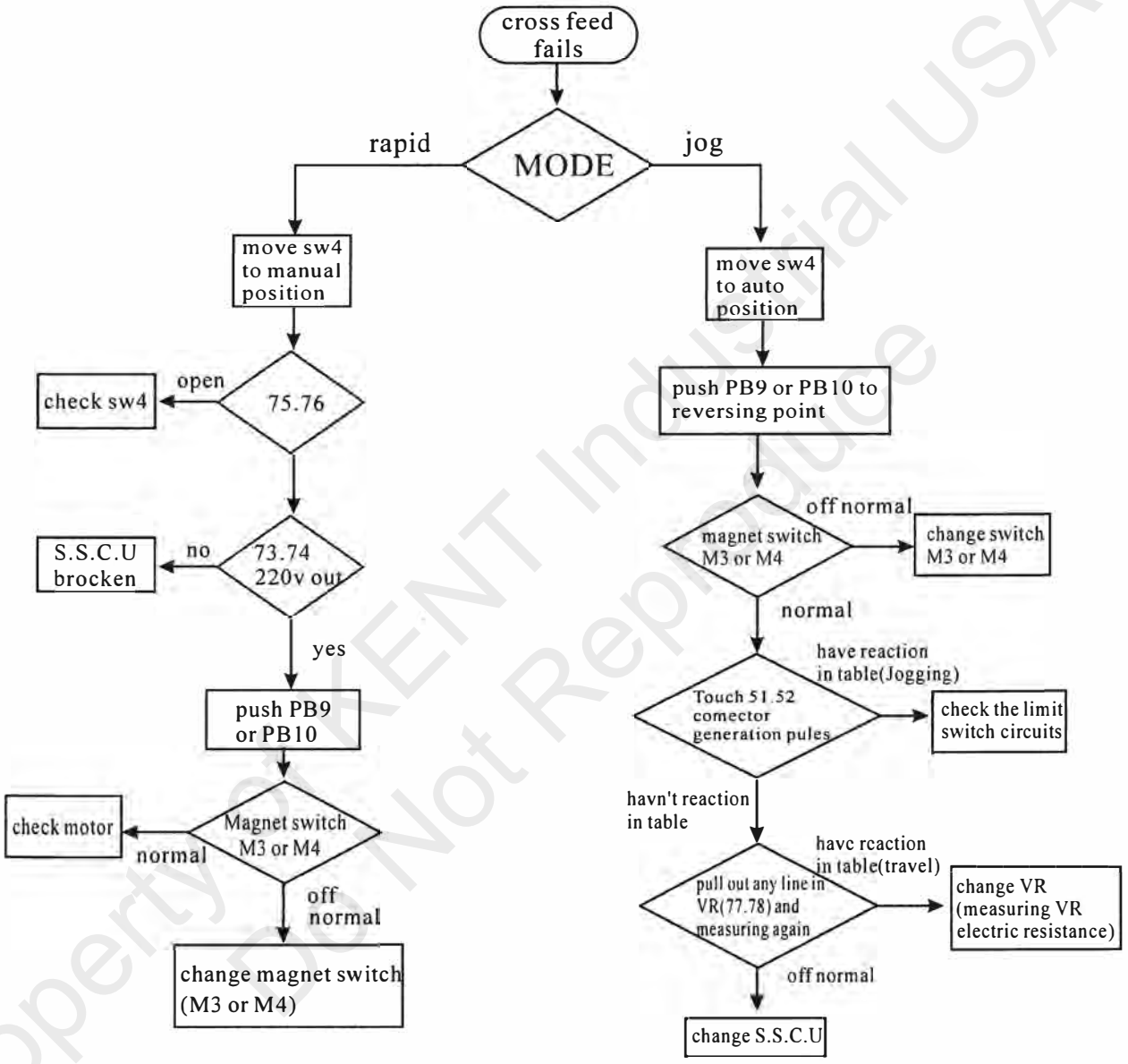
Code	Abnormality	Causes of fault	Inspection method	Trouble-shooting	Parts number
A06	Inaccurate downfeed Waves pattern on the work pieces	3) Damaged vertical leadscrew	3) Remove the upper and lower dust shields and take visual inspection	3) Replace the vertical feed leadscrew	
		4) Improper backlash between the vertical feed worm and gear	4) Turn the vertical handwheel upwards and downwards to check the backlash	4) Adjust the backlash between worm and gear	
		5) Malfunction of the downfeed mechanism	5) ①Use multimeter to test the circuits ②Check the stepping motor	5) Change the controller or stepping motor	
A07	Waves pattern on the work pieces	1) Grinding wheel not well balanced	1) Adjust the level for the balance stand and remove grinding wheel for calibration	1) Calibrate the balance	
		2) Grinding wheel fails to match with the work piece	2) Use grinding wheel suitable for the material of workpiece	2) Refer to chapter 6 of operation Manual	
		3) Loosened Wheelhead	3) Use the micrometer to measure out the gap and use hand to push the spindle shaft upward and downward.	3) Adjust the gap between the wheel head and mounting plate	
		4) Loosened leveling screws	4) Check if the leveling screws and pads are well fastened.	4) Re-align the level for the machine.	
		5) Speeds of crossfeed and longitidinal speed fail to be accurate to	5) take visual inspection on the waviness on workpiece	5) Adjust the crossfeed increment	
		6) Lack of oil for the table slideways	6) take visual inspection, touch the slideways by hand and use compressed air to clean φ4 copper pipe	6) Check the oil circuits and lub pump.	
		7) Abnormal wheel spindle	7) Measure out the circular run-out of the wheel spindle nose with micrometer.	7) Replace the wheel spindle	

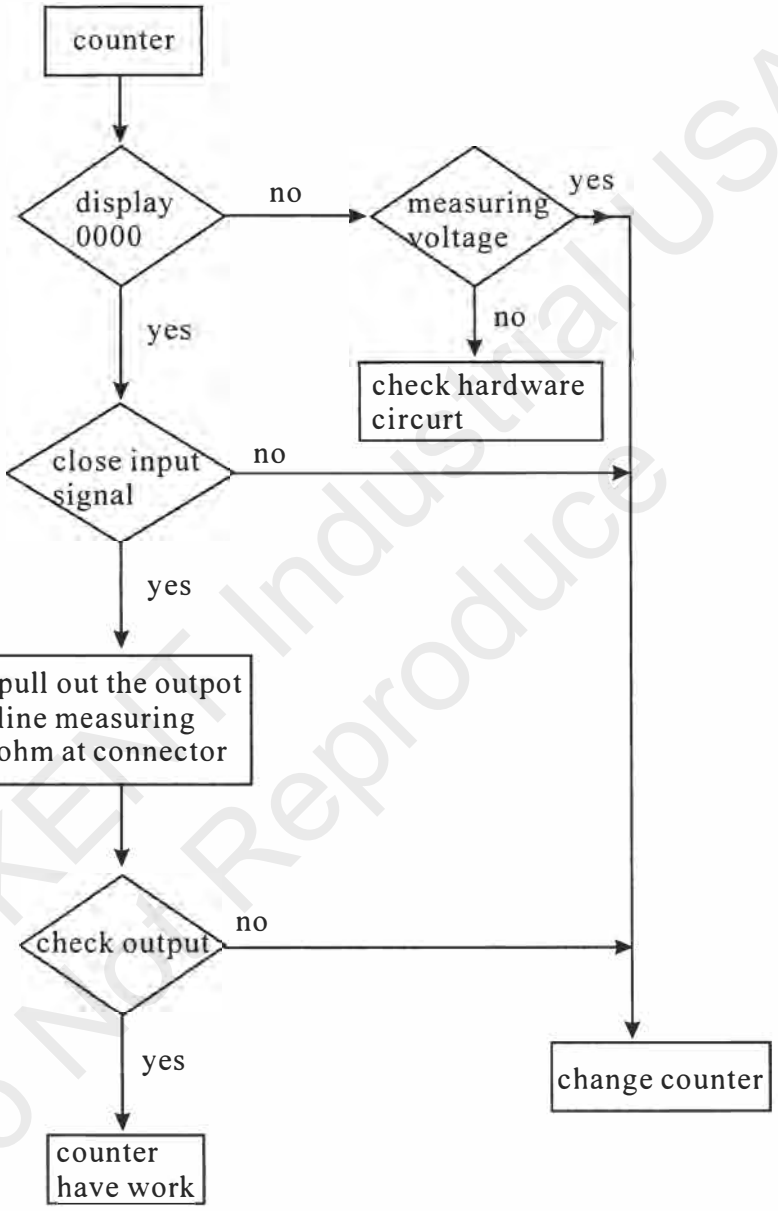
Code	Abnormality	Causes of fault	Inspection method	Trouble-shooting	Parts number
A07	Waves pattern on the work pieces	8) Damaged/loosened coupler	8) Inspect the coupler.	8) Adjust or replace the coupler	
A08	Poor precision of the work piece	1) Grinding wheel fails to match the work piece	1) Use grinding wheel suitable for the material of workpiece.	1) Refer to chapter 6 of operation manual	
		2) Poor level of the machine	2) Put the spirit level on the electric magnetic chuck to check the level of the machine	2) Re-adjust the level of the machine	
		3) Loosened wheelhead	3) Find out vertical gap by pushing the spindle upward and downward.	3) Adjust the gap between wheelhead and mounting plate of the wheel spindle	
		4) Lack of oil for the longitudinal (table) or crossfeed slideways	4) Take inspection or touch the slideways or use compressed air to clean φ4 copper pipe	4) Inspect the oil circuit and lub pump.	
		5) Poor electro-magnetic chuck surface	5) Use the micrometer to check the accuracy of electro-magnetic chuck surface.	5) Re-grinding the electro-magnetic chuck	
		6) Damaged hydraulic cylinder	6) Disassemble hydraulic cylinder and find out the damage of hydraulic cylinder	6) Replace the hydraulic cylinder	
		7) Poor foundation	7) Conduct visual inspection (with the seat of metering gauge placed onto the machine base and the needle contact with the floor surface)	7) Improve the foundation	

Code	Abnormality	Causes of fault	Inspection method	Trouble-shooting	Parts number
A09	Spindle shaft inaction	1) Electro-magentic chuck not magnetized	1) Use multimeter to inspect the circuits and find out if circuit functions properly	1) Switch on the electro-magnetic chuck	
		2) Malfunction of spindle start push-button	2) Take visual inspection & use multimeter to check the contact points	2) Replace the push-button	9912-62202451
		3) Fault of magnetic contactor	3) Use multimeter to test the coil	3) Replace the magnetic contactor	7990-00011241 7990-00011244
		4) Loosened control wire	4) Use multimeter to test the circuit	4) Inspect or the control circuit	
		5) Damaged coupler of the spindle shaft	5) Inspect spindle motor	5) Replace the coupler	0303-41351200 7990-00011244
		6) Malfunction of spindle motor	6) Use multimeter to test motor	6) Replace spindle motor	7990-00011241
A10	Oil leakage	1) Clogged waste oil reclamation system	1) Insert steel bar to the nozzle to get rid of impurities	1) Clean up waste oil reclamation system	
		2) Damaged seal of hydraulic cylinder	2) Visual inspection	2) Replace the seal	
		3) Improper adjustment to lub discharging amount	3) Take visual inspection on distribution of lub.	3) Readjust lub discharging amount.	
		4) Leakage of hydraulic valve	4) Take visual inspection	4) Adjust or replace hydraulic valve	
		5) Leakage of hydraulic system	5) Visual inspection	5) Inspect and replace hydraulic hoses	

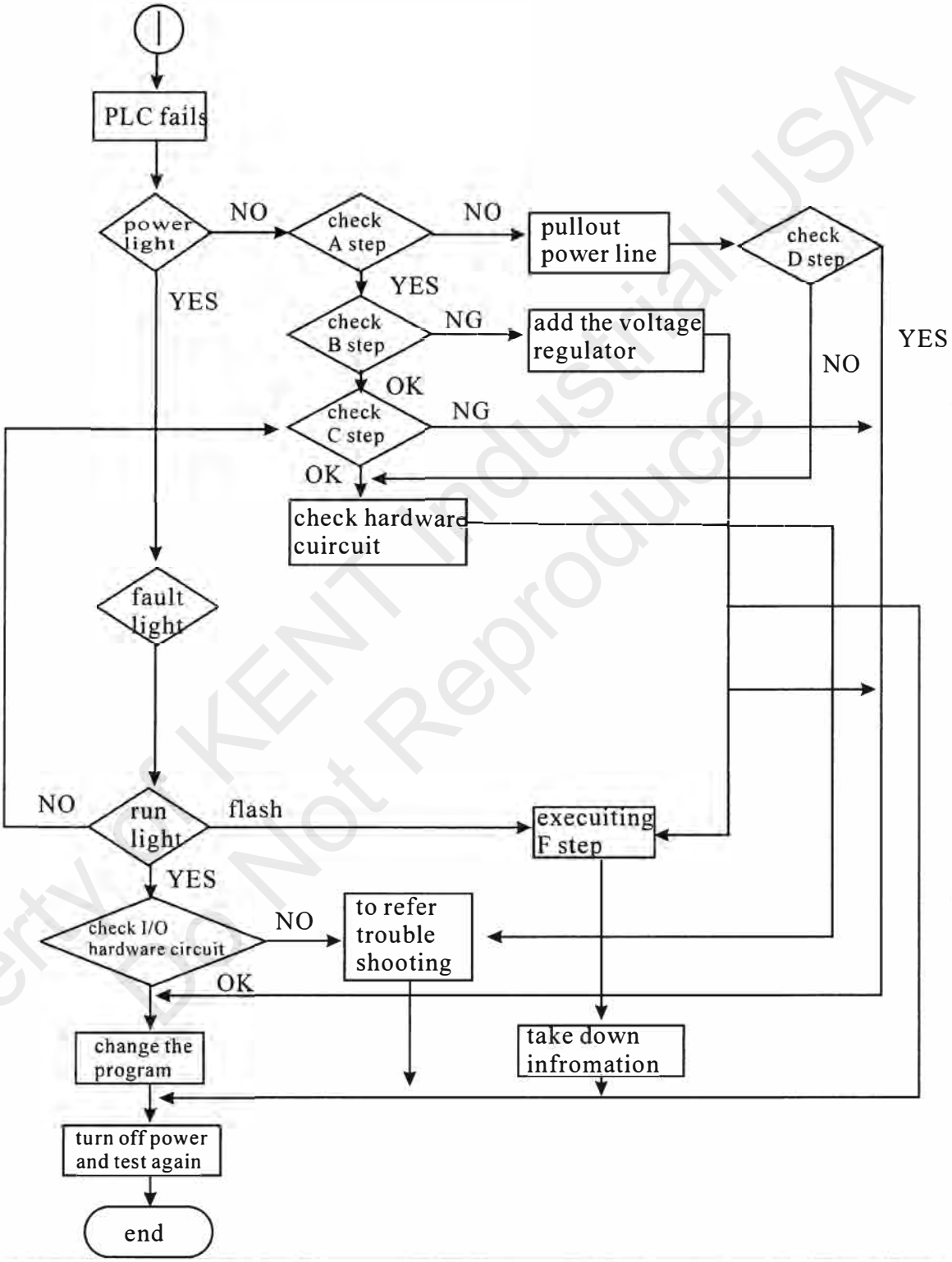
Code	Abnormality	Causes of fault	Inspection method	Trouble-shooting	Parts number
A10	Oil leakage	6) Leakage of lub system	6) Visual inspection	6) inspect and replace lub pipe or the lub unit.	
A11	Water leakage	1) Blocked drainage	1) visual inspection	1) clean up drainage system	
		2) Leakage from gap of splashing guard	2) visual inspection	2) inspect and repair splashing guard	
		3) Loosened water flushing/drain connectors	3) Take visual inspection & use tool to tighten the loose connectors	3) replace or tighten them as necessary	
		4) Leakage of coolant unit	4) take visual inspection or use hand to touch	4) replace the coolant tank when necessary.	
A12	lubrication device failed	(1) the indicator lights failed , but table still work .	(1) inspection indicator .	(1) replace a light bulb.	
		(2) the hydraulic system fault	(2-1) inspection the control lever whether is in "off" position (2-2)check the sensing plate whether contact with proximity	(2-1) put the control lever in "off" position. (2-2) repair the sensing plate again and keep the gap between 0.6~1.2 mm .	
		(3) the hydraulic system still fault. when the control lever is in "off" position.	(3-1) inspection the proximity switch (3-2) check pressure gauge indicator whether excess 1kg/m (3-3) inspection lubrication oil level	(3-1) replace the proximity switch. (3-2) replace the pressure gauge. (3-3) to pour into lubrication oil.	
		(4) the lubrication pump fault.	(4) inspection lubrication pump.	(4) replace lubrication pump	

1.2 Fails to crass feed down feed and PLC automatically, please check untertable step by step





OMRON H7CN counter
vottage:DC 24V, PIN 2 is negative, PIN is positive
signal:PIN1 and PIN4 (figure one time when it short)
Out Put signal:PIN6 and PIN8 (NO)



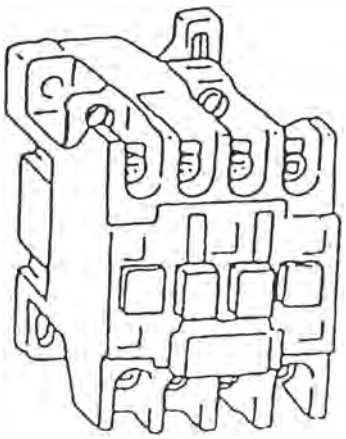
1.3 Inspection and Maintenance

1.3.1 Visual check of magnet switch actions

< Checking procedure >

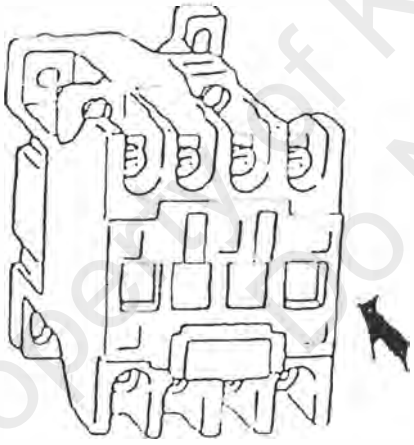
(1) Visual check

< Magnet switch not activated >



When the magnet witch is not activated, the movable contact spring support and the switch body are at the same height.

< Magnet switch activated >



When the magnet switch is activated, the movable spring support is extracted approximately 4mm from the switch body.

Note：

There may be cases when the contact sticks and the spring support remains extracted even though the magnet switch is not activated.

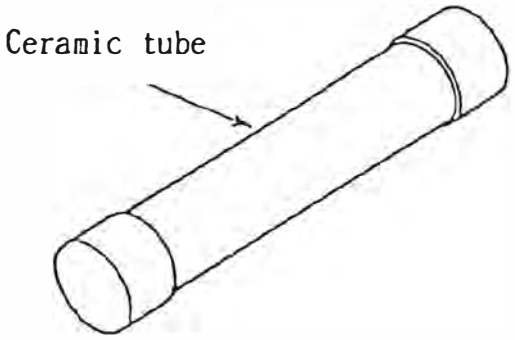
Dust or other foreign matter entering between the contacts or in the moving parts may cause poor contact.

Magnet switch state (spring support extraction or projection condition) will vary according to the type of magnet switch.

However, whether or not a particular magnet switch has been activated can be easily determined by comparing it with other magnet switches.

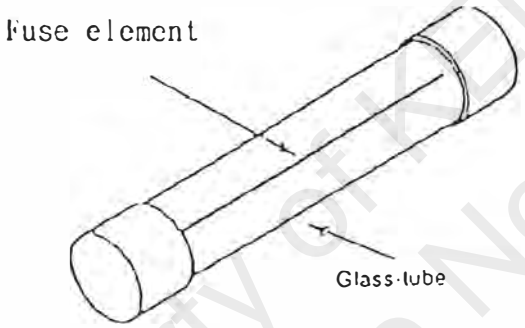
1.3.2 Fuse testing and inspection

<Ceramic tube>



Cartridge fuse contains its fuse element in a transparent glass-tube or ceramic tube.

If the fuse element is not visible, check whether or not the fuse is blown with a multimeter.



Glass-tube fuse; when the fuse element is blown, it is easily visible

1.3.3 Testing and inspection of proximity switches

Electric meter at DC 50V

NPN Type：Red pin connector P (Black connector outlet)

PNP Type：Black pin connector N (Red connector outlet)

Use a metal object comes into contact to the Proximity switch. For normal Proximity switch, there is a rated output voltage.

2.1 Safety rules for electric facilities

2.1.1 The electrical panel/cabinet of this machine is designed for operational safety. Don't make changes to the structure of the electrical panel/cabinet or wiring without permission from this company.

2.1.2 The operator shall be familiarized with the locations of the emergency stop switch and the main power switch of this machine (See Ch. 2-4). In case of emergency, shut off the machine and cut off power source immediately.

2.1.3 PE earthing wire for this machine shall be installed in compliance with the codes/standards of the government of the country where this machine is used, or the wire be grounded according to the following procedures as showing 2.1.3.1 to 2.1.3.8.

2.1.3.1 The earthing system shall be limited to such artificial earthing polar as the embedded pipe, rod or plate; the terminal point of leading wire for earthing system shall be welded or the specially designed clamp be used.

2.1.3.2 The leading wire for earthing shall be connected with the artificial earthing terminal by welding or other means. The earthing wire shall not be installed with switch or any protective devices.

2.1.3.3 When copper plate is used for earthing, its thickness shall exceed 0.7mm, the area for copper plate to contact with the ground shall not be less than 900 square cm and depth of the embodiment of copper plate shall be no less than 1.5 meters.

2.1.3.4 If iron or steel pipe is used for earthing, the inner diameter shall be over 19mm; if copper rod is used for earthing, its diameter shall not be less than 15 mm, the length no less than 0.9 meter and the depth of embodiment of the rod should be over 1 meter and be embedded vertically. If the embodiment encounters rock, the rod can be embedded laterally with a depth over 1.5 meters.

2.1.3.5 If the earthing resistance of a pipe or plate for earthing cannot meet the standard, use two or more pipes or plates for this purpose. To reduce earthing resistance in an effective manner, the spacing between pipes or plates shall be over 1.8 meters, and the pipes or plates shall be connected using connecting wire with a diameter larger than earthing wire so as to constitute the uninterrupted conductor.

2.1.3.6 The earthing pipe, rod and steel plate should be zinc coated or copper plated and should not be coated with paint or other insulation material.

2.1.3.7 Where the earthing device is vulnerable to damage by the environment proper protection should be provided.

2.1.3.8 Earthing resistance：It shall be less than 100Ω when the voltage is at or below 150V.
It shall be less than 50Ω when the ground voltage is between 150/300V.
It shall be less than 10Ω when ground voltage is over 301V.

2.1.4 The unit attached with the mark  is the electric facility. Don't open its door so as to avoid electrical shock. The door may be opened by electricians for inspection or maintenance.

2.1.5 In the performance of maintenance of electric facilities of the unit, never cut off the connections of the protective devices.

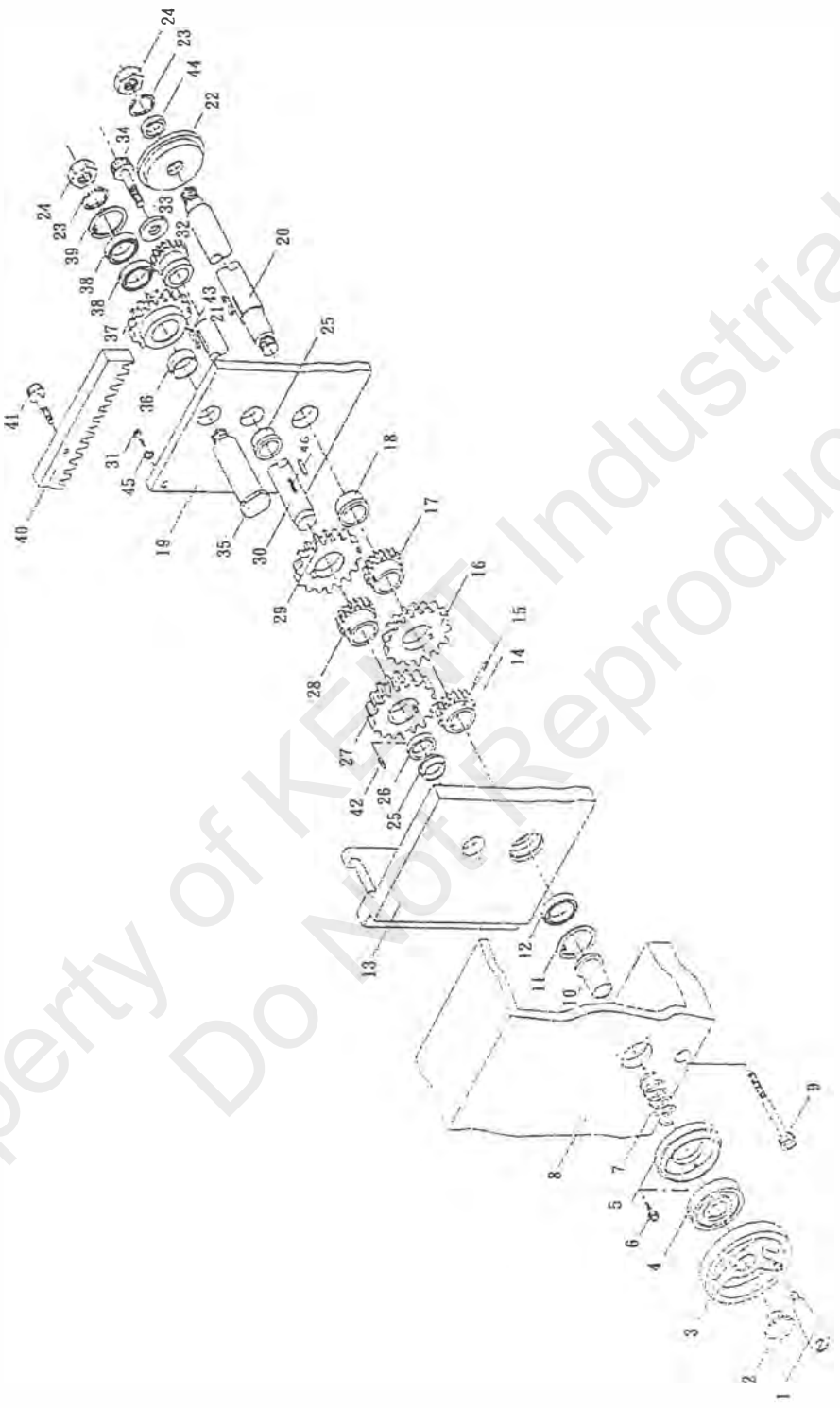
2.1.6 During the time of maintenance, the electrician shall wear insulating gloves and rubber shoes so as to avoid electric shock; the electrician shall not wear such conductive items as metal ornaments.

2.1.7 Prior to proceeding with the maintenance, the electrician shall follow instructions indicated on the warning plate, and use multimeter to assure that power is off.

2.1.8 Prior to performing maintenance, the electrician shall shut off power source, and erect warning sign so that other people will not inadvertently start up this machine which would result in hazards.

2.1.9 When motor is started, there may be sparkles at the contact point of the electric power cabinet. Hence the machine shall be installed at the environment free of explosive powder, explosive gas or inflammable items.

3.1 Longitudinal handwheel assembly

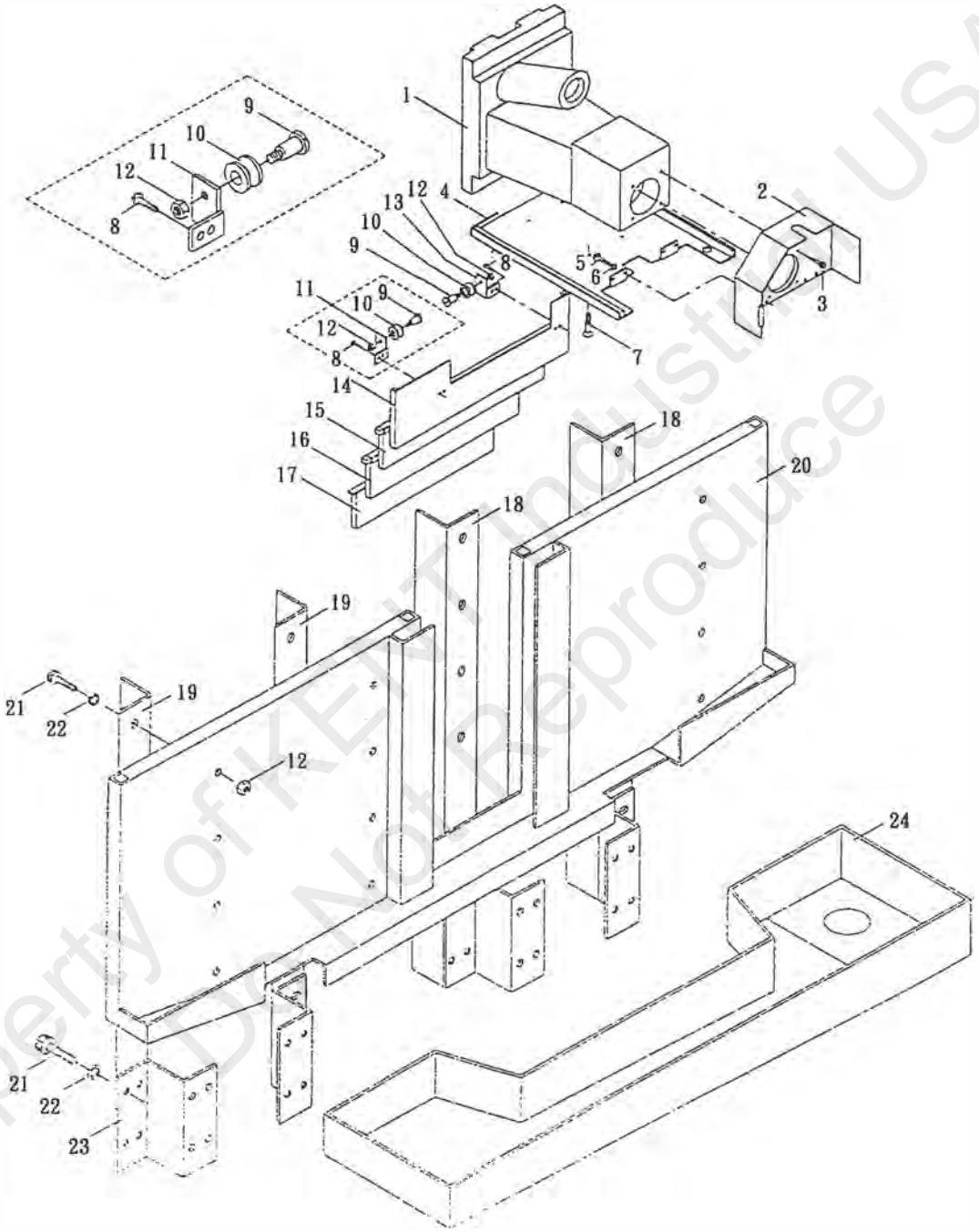


3.1.1 Longitudinal handwheel parts list

No	Parts number	Parts name	Quantity
1	0303-91031300	Handwheel grip	1
2		Nut	1
3	0303-91031100	Hand Wheel	1
4	0303-41200200	Dial Shield Ring	1
5	0303-41200200	Dial Holder	1
6	1910-04006000	Socket Head-cap screw W1/4"× 3/4"L	3
7	0303-41200300	Compression Spring	1
8	0303-50101100	Base Plate	1
9	1910-06040000	Socket Head-cap Screw	6
10	0303-41200400	Sleeve	1
11	1131-04700000	Snap Ring R47	1
12	3031-62044000	Bearing 6204ZZ	1
13	0303-41210100	Gear Housing	1
14	0303-41210200	Gear	1
15	1073-06030100	Spring Ping	1
16	0303-41210300	Gear	1
17	0303-41210400	Gear	1
18	0303-41210500	Bush	1
19	0303-41210600	Gear Housing Plate	1
20	0303-41210700	Shaft	1
21	1092-05050350	Key 5×5×35	1
22	0303-41210800	Spacer	1
23	1951-08000000	Spring Washer	2
24	1930-08000000	Hexagonal Nut	2
25	0303-41211100	Bush	2
26	0303-41211200	Spacer	1
27	0303-41211300	Gear	1
28	0303-41211400	Gear	1
29	0303-41211500	Gear	1
30	0303-41211600	Shaft	1
31	1910-05008000	Socket Head-cap screw	6
32	0303-41211700	Gear	1
33	0303-41121800	Washer	1
34	1910-04006000	Socket Head-cap screw	1
35	0303-41212100	Shaft	1
36	0303-41212200	Washer	1
37	0303-41212300	Gear	1
38	3031-62034000	Bearing 6203ZZ	2
39	1131-04000000	Snaping Ring R40	1
40	0303-41201100	Rack	1

No	Parts number	Parts name	Quantity
41	1910-05016000	Socket head-cap screw	8
42	1914-04004000	Set screw	4
43	1092-05050500	Key 5x5x50	1
44	0303-41210900	Washer	1
45	1951-05000000	Spring Washer	6
46	1092-05050200	Key 5x5x20	1

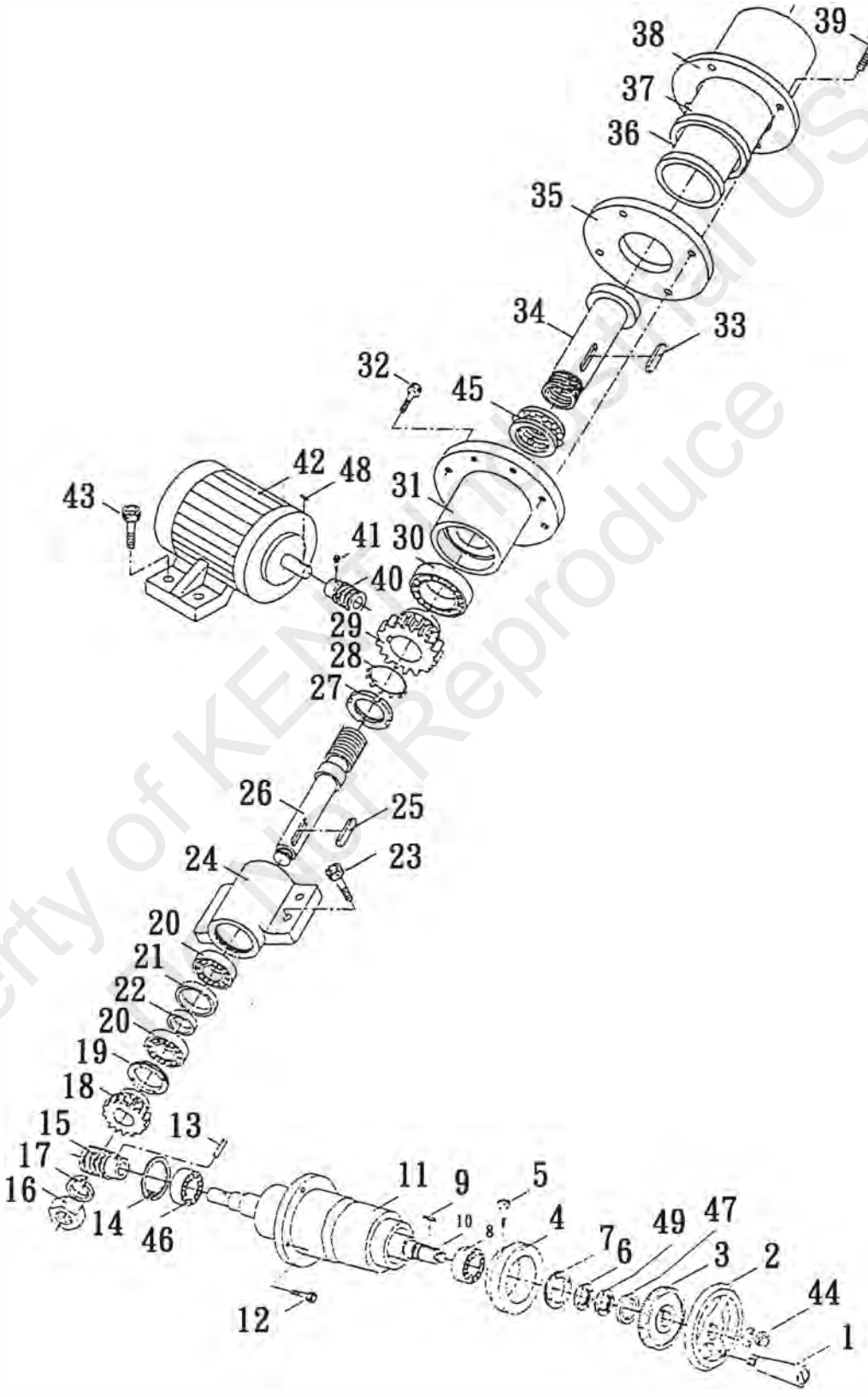
3.2 Large rear splash guard assembly



3.2.1 List of parts for the large rear splash guard assembly

No	Parts number	Parts name	Quantity
1	0303-50302100	Wheelhead	1
2	0303-50306600	Wheel Cover (Inner)	1
3	1910-06006000	Socket head-cap screw	4
4	0303-50105500	Dust Shield (Top)	1
5	1912-03005000	Round Head-Cap Screw	4
6	1951-03000000	Spring Washer	6
7	1913-03003000	Screw	4
8	1912-03003000	Round Head-cap screw	4
9	0303-50105700	Roll Shaft	2
10	0303-50105600	Roll	2
11	0303-50105800	Roll Holder (Left)	1
12	1930-04000000	Hexagonal Nut	18
13			
14	0303-50106800	Dust Shield (Rear,upper)	1
15	0303-50106900	Dust, Shield (Rear, upper)	2
16	0303-50107000	Splash Guide	2
17			
18	0303-50105200	Support	2
19	0303-50105300	Support	2
20	0303-50105100	Big Splash Guard	1
21	1910-04005000	Socket Head-cap screw	48
22	1951-04000000	Spring Washer	48
23	0303-50105400	Support Plate	4
24	0303-50203300	Coolant Slot	1
25	0303-50107100	Plate	1

3.3 Vertical feed assembly

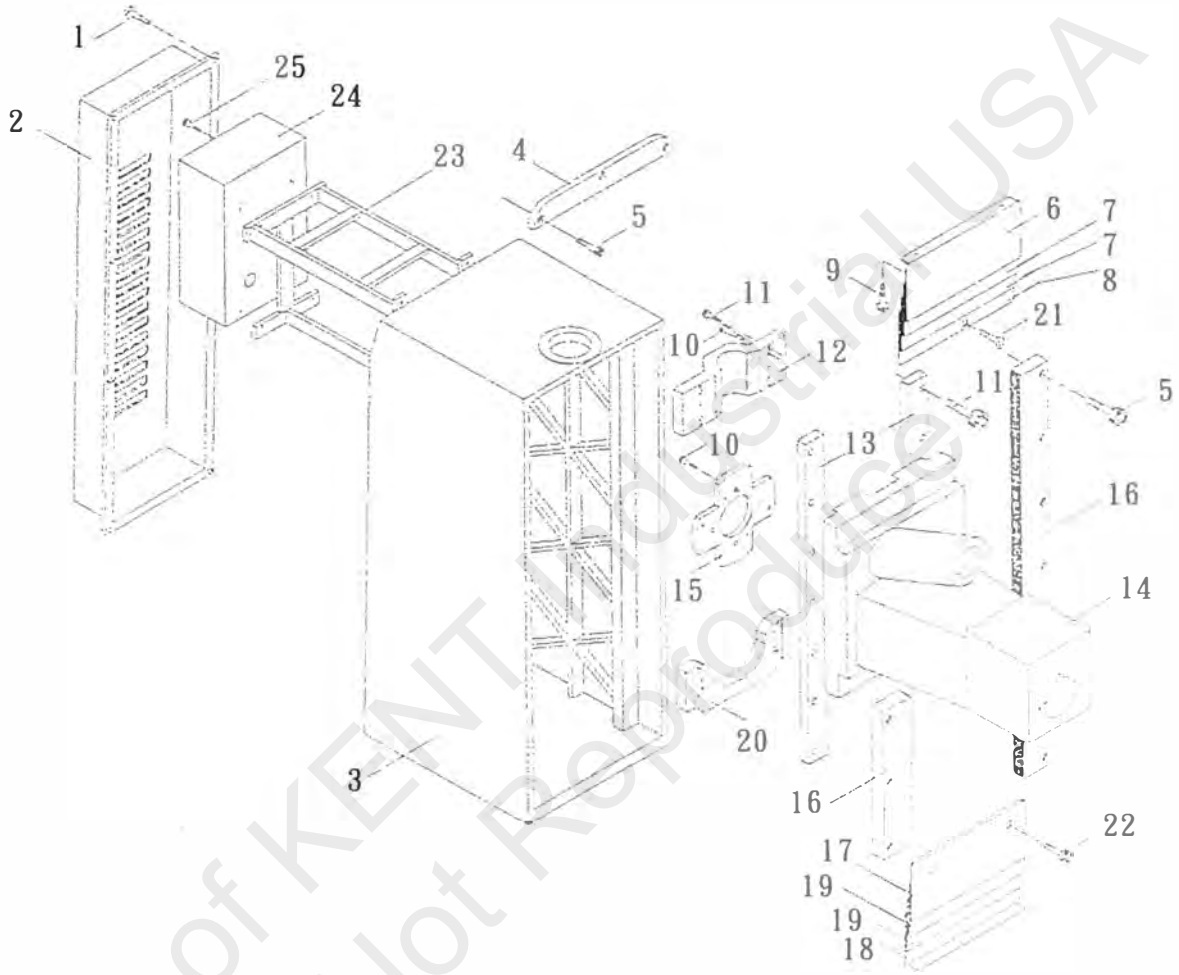


3.3.1 Vertical feed assembly parts list

No	Parts number	Parts name	Quantity
1	0303-91031300	Handwheel grip	1
2	0303-91001100	Handwheel	1
3	0303-41300100	Graduation dial (m/m)	1
	0303-41308100	Graduation dial (inch)	1
4	0303-41300200	Indicator ring	
5	0303-30380600	Lock screw	1
6	0303-41310100	Nut	2
7	0303-41310200	Bearing container	1
8	3911-52044000	Bearing	1
9	1092-05050300	Double round-had parallel key	1
10	0303-50310400	Vertical transmission shaft (AH)	1
11	0303-50310300	Fixed bush for vertical transmission shaft(AH)	1
	0303-50313300	Fixed bush for vertical transmission shaft (AHD)	1
12	1010-10040000	Socket head-cap screw M10x40L	4
13	1073-05030000	Spring pin	1
14	1131-04700000	C retaining ring	1
15	0303-41310500	Manual worm	1
16	1930-12000000	Hex nut	1
17	1951-12000000	Spring washer	1
18	0303-41330300	Worm gear	1
19	0303-41330400	Bearing cover	1
20	3033-62054000	Bearing	2
21	0303-41330500	Inner spacer	1
22	0303-41330600	Outer spacer	1
23	1010-02040000	Socket head-cap screw M12x40L	4
24	0303-41330700	Bearing housing	1
25	1092-07070350	Double round-head parallel 7x7x35L	1
26	0303-41330100	Vertical leadscrew (m/m)	1
27	3090-04000000	Check nut	1
28	3100-04000000	Ratchet washer	1
29	0303-50330900	Electrically driven worm gear	1
30	3031-62103000	Bearing	1
31	0303-50331000	Leadscrew nut	1
32	1010-08025000	Socket head-cap screw M8x25L	4
33	1092-07070250	Double round-head parallel 7x7x25L	1
34	0303-41330200	Driving nut sleeve	1
35	0303-41304100	Washer for leadscrew sleeve	1
36	0303-41304200	Leadscrew sleeve	1
37	0303-41304300	Leadscrew sleeve	1
38	3031-41304400	Leadscrew socket	1
39	1010-08085000	Socket head-cap screw M8x25L	1
40	0303-50301500	Electrically worm	1

No	Parts number	Parts name	Quantity
41	1010-06012000	Socket head-cap screw M6x12L	1
42	7130-02223110	Motor 1/2HPx4P	1
43	1010-08025000	Socket head-cap screw M8x25L	4
44		Nut M12xP1.5	1
45	3930-51108000	Bearing	1
46	3921-22040000	Bearing	1
47	3090-04000000	Nut	1
48	1092-04040200	Double round-head parallel 4x4x20L	1
49	3100-04000000	Spacer	1

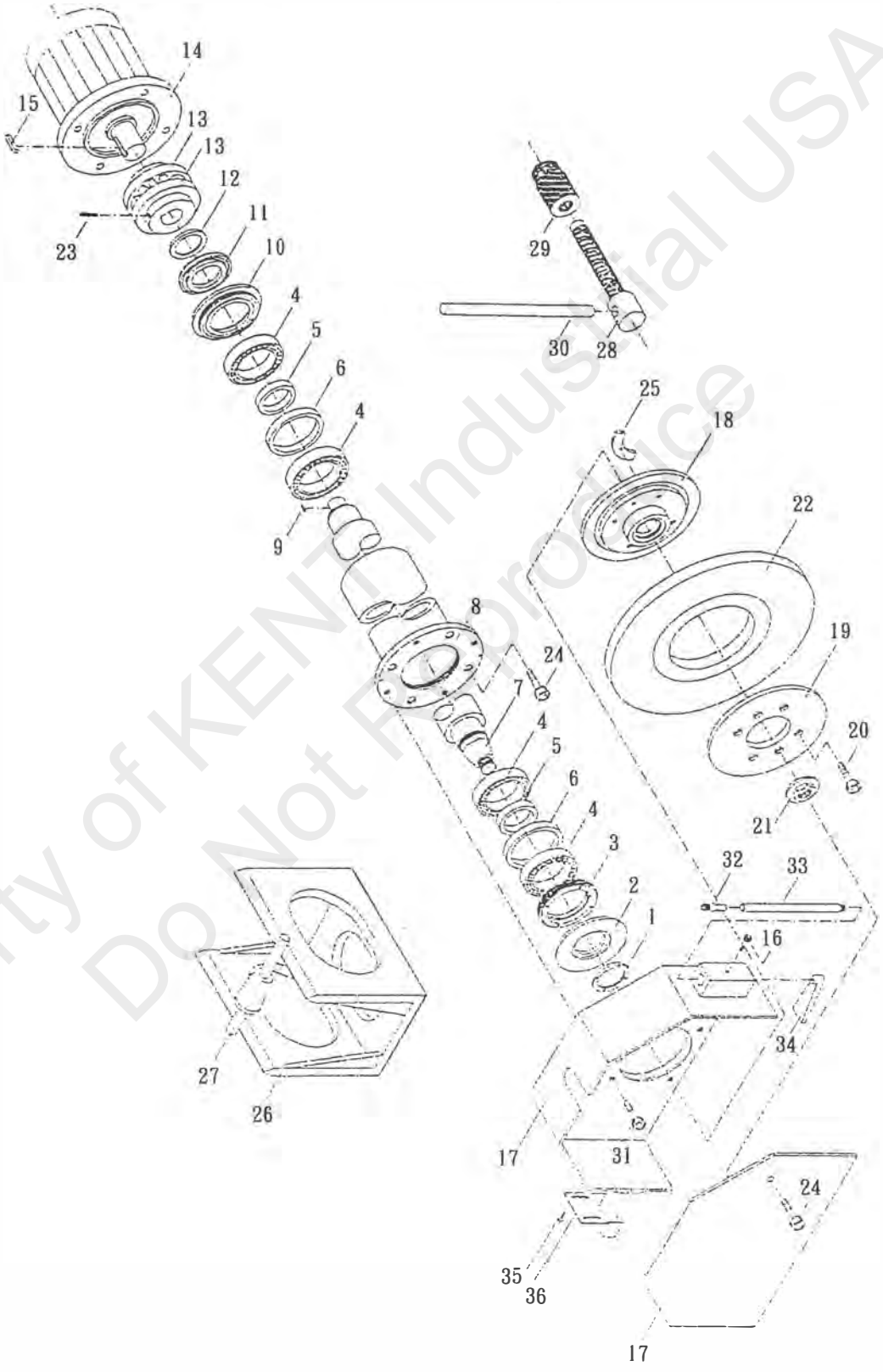
3.4 Column and the associated components



3.4.1 Parts for the column

No	Parts number	Parts name	Quantity
1	1915-04003000	Round Head Screw	8
2	0303-41103100	Column Rear Cover	1
3	0303-50100300	Column	1
4	0303-41303100	Column Front Cover	1
5	1910-04006000	Socket Head-Cap Screw	17
6	0303-41303300	Dust Shield	1
7	0303-41303500	Dust Shield	2
8	0303-41303400	Dust Shield	1
9	1915-03003000	Round Head Screw	2
10	1910-08010000	Socket Head-Cap Screw	4
11	1910-06014000	Socket Head-Cap Screw	4
12	0303-41302300	Mounting Plate	1
13	0303-41301100	Vertical Slide Way	2
14	0303-50302100	Wheelhead	1
15	0303-50302200	Spindle Motor Mounting Plate	1
16	0303-41303200	Shield Guide	2
17	0303-41303600	Dust Shield	1
18	0303-41303700	Dust Shield	1
19	0303-41303500	Dust Shield	2
20	0303-41302400	Mounting Plate	1
21	1913-03003000	Screw	1
22	1915-03004000	Round Head Screw	2
23	0303-41302800	Weight Fastening Rack	1
24	0303-50302700	Counter-Balance Weight	1
25	1910-10032000	Hex Screw	4

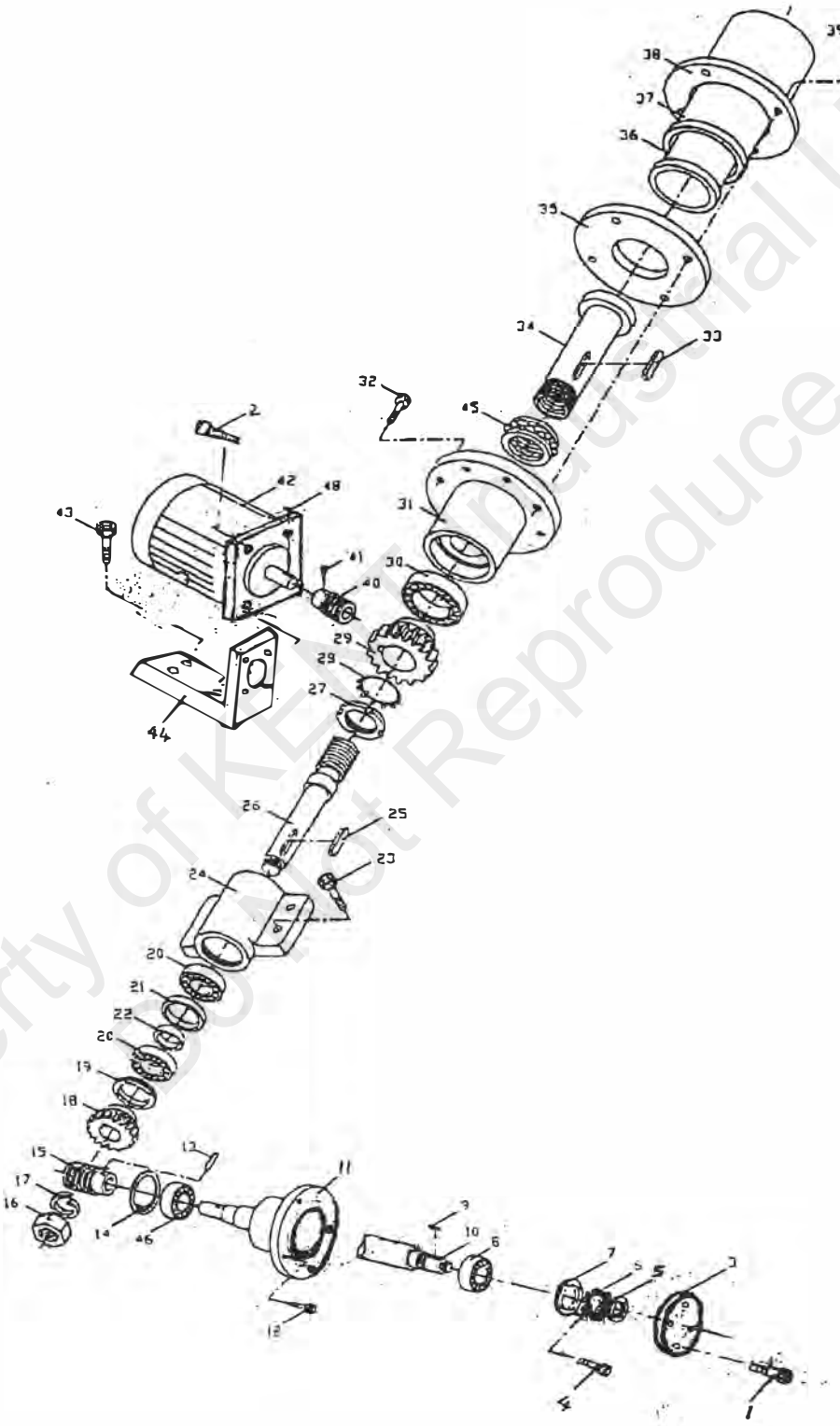
3.5 Wheel spindle assembly



3.5.1 Parts for the wheel spindle assembly

No	Parts number	Parts name	Quantity
1	0303-41350300	Locking nut (front)	1
2	0303-41350400	Dust shield (front, outer)	1
3	0303-41350500	Dust shield (front, inner)	1
4	3033-72091540	Angular contact ball bearing 7209 CP4	4
5	0303-41350600	Spacer (inner)	2
6	0303-41350700	Spacer (outer)	2
7	0303-50350200	Spindle shaft	1
8	0303-50350100	Spindle housing	1
9	1092-07070350	Double round-head parallel 7×7×35L	1
10	0303-41350800	Dust shield (rear, inner)	1
11	0303-41350900	Dust shield (rear, cover)	1
12	0303-41351000	Locking nut (rear)	1
13	0303-50351200	Coupling	2
14	7131-07223110	Spindle motor 7HP×4P	1
15	1092-07070350	Double round-head parallel 7×7×35L	1
16	1010-08001600	Hexagon socket screw M8x16L	1
17	0303-50306600	Wheel cover	1
18	0303-95350300	Wheel flange	1
19	0303-91350400	Wheel flange	1
20	1010-08045000	Hexagon socket screw M8x45L	6
21	0303-91340200	Fixing nut	1
22	8660-07009111	Grinding wheel 355x38x127	1
23	1016-10020000	Set screw M10x20L	2
24	0303-41305100	Socket head-ca[screw	1
25	0303-91331600	Balancing weight	3
26	0303-91130100	Balancing base	1
27	0303-91141100	Balancing arbor	1
28	0303-91330700	Flange extractor	1
29	0303-91330800	Extracting nut	1
30	0303-91330900	Extracting handle	1
31	1010-08025000	Hexagon socket screw M8x25L	4
32	0303-92131600	Flushing pipe	1
33	0303-92131700	Flushing pipe	1
34	0303-92131400	Nozzle	1
35	1010-10020000	Hexagon socket screw M10x20L	1
36	0303-50306700	Side splash guard	1

3.6 Vertical Feed Assembly (KGS-2040 AH AHD SD1 SD2)

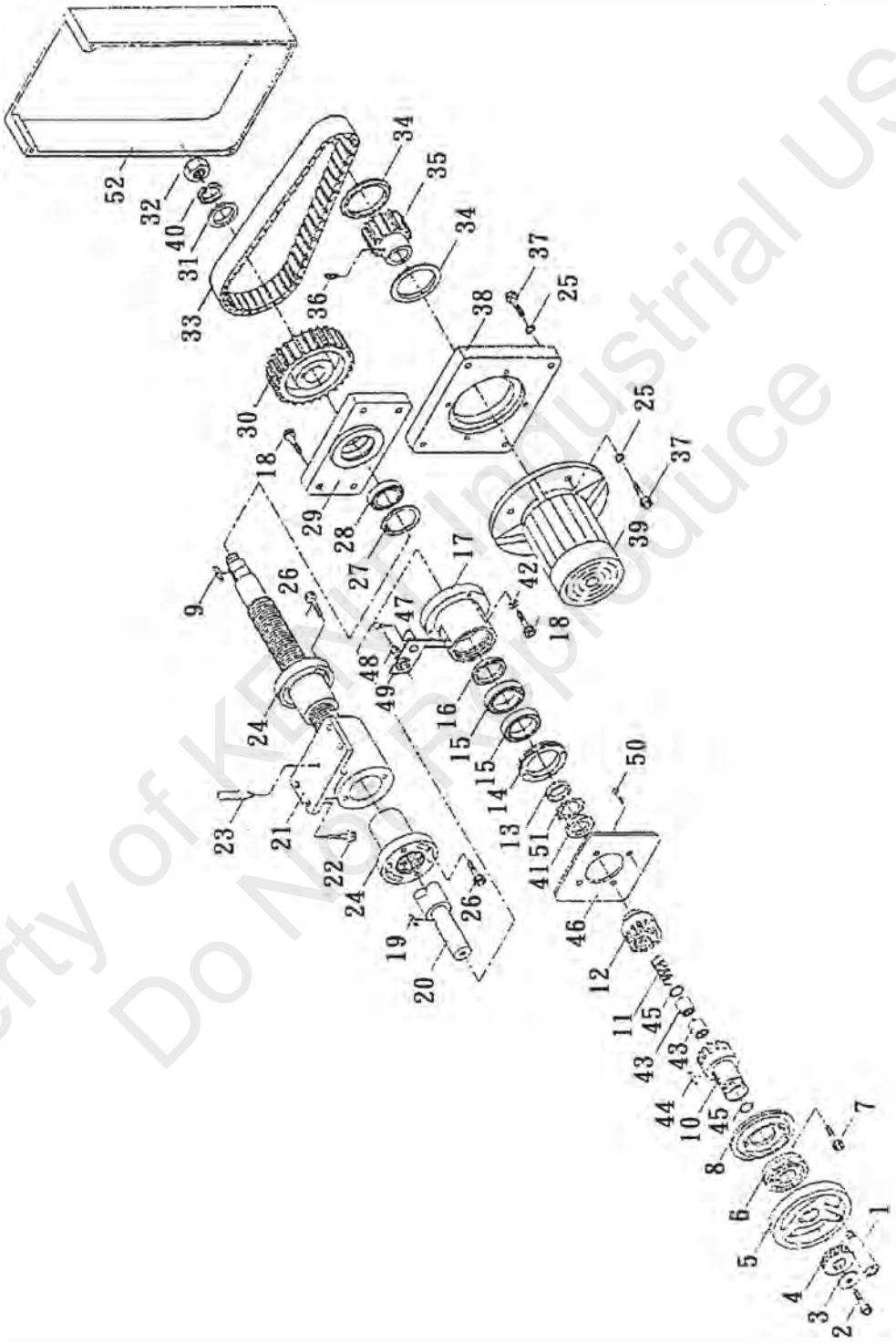


3.6.1 Downfeed assembly parts list

No	Parts number	Parts name	Quantity
1	1910-04010000	Socket Head-Cap Screw	4
2	1910-05008000	Socket Head-Cap screw	4
3	03A3-86027000	Cover	1
4	1910-04005000	Socket Head-Cap screw	3
5	3090-04000000	Lock Nut	1
6	3100-04000000	Lock Washer	1
7	03A3-85032200	Bearing Container	1
8	3911-52044000	Bearing	1
9	1092-05050300	Double Round-Head Parallel Key	1
10	03A3-86027500	Vertical Transmission Shaft	1
11	03A3-86027600	Fixed Bush For Shaft	1
12	1910-06014000	Socket Head-Cap Screw	4
13	1073-05030000	Spring Pin	1
14	1131-04700000	C Retaining Ring	1
15	0303-41310500	Worm	1
16	1930-12000000	Hexagon Nut	1
17	1951-12000000	Spring Washer	1
18	0303-41330300	Worm Gear	1
19	0303-41330400	Bearing Container	1
20	3033-72054000	Bearing	2
21	0303-41330500	Inner Spacer	1
22	0303-41330600	Outer Spacer	1
23	1914-04008000	Socket Head-Cap Screw	4
24	0303-41330700	Bearing Housing	1
25	1092-07003500	Double Round-Head Parallel	1
26	0343-00900200	Ballscrew (Metric)	1
27	3090-10000000	Check Nut	1
28	3100-10000000	Ratchet Washer	1
29	0343-00701000	Electrically Driven Worm Gear (New Type)	1
	0343-00700400	Electrically Driven Worm Gear (Old Type)	1
30	3031-62103000	Bearing	1
31	0343-00900100	Nut Bracket (KGS-2040 AH AHD)	1
	0343-01000200	Nut Bracket (KGS-515.620)	1
32	1910-05008000	Socket Head-Cap Screw	4
33	1092-07070250	Double Round-Head Parallel Key	1
34	0343-00900300	Driving Nut Sleeve	1
35	0303-41304100	Washer	1
36	0303-41304200	Ball Screw Cover	1
37	0303-41304300	Ball Screw Cover	1
38	3031-41304400	Ball Screw Cover	1
39	1910-05006000	Socket Head-Cap Screw	1
40	0343-00701100	Electrically Driven Worm	1

No	Parts number	Parts name	Quantity
41	1910-04004000	Socket Head-Cap Screw	1
42	03C3-95000660	AC Servo Motor	1
43	1910-06012000	Socket Head-Cap Screw	4
44	03A3-85031400	Servo Motor Mounting Plate	1
45	3930-51111000	Bearing	1
46	3921-22040000	Bearing	1
47	1910-05008000	Socket Head-Cap Screw	4
48	1092-05050250	Key	1

3.7 Crossfeed assembly

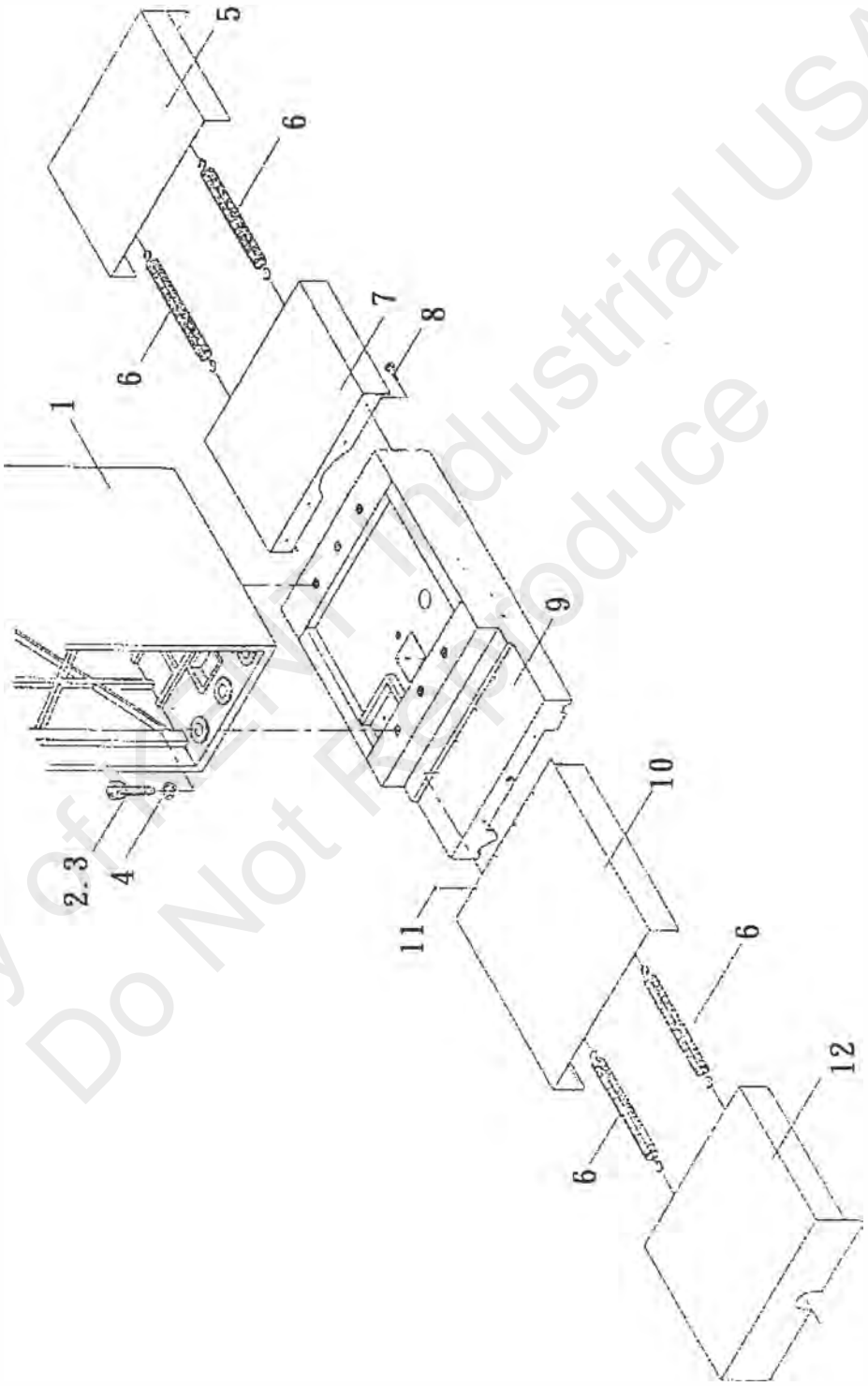


3.7.1 List of parts for the cross feed assembly

No	Parts number	Parts name	Quantity
1	0303-91031300	Handwheel Grip	1
2	1910-06004000	Socket Head-Cap Screw	1
3	1950-06000000	Washer	1
4	0303-41400900	Nut	1
5	0303-91141100	Hand Wheel	1
6	0303-41400100	Craduation Dial	1
7	1910-04003000	Socket Head-Cap Screw	3
8	0303-41400200	Dial Holder	1
9	1092-05050200	Key 5x5x20	2
10	0303-41400300	Clutch	1
11	0303-41400500	Spring	1
12	0303-41400400	Clutch	1
13	0303-41401800	Locking Nut	1
14	0303-41400700	Bearing Retainer	1
15	3033-72064000	Bearing 7206B	2
16	0303-41400800	Washer	1
17	0303-41401000	Bearing Housing	1
18	1910-06008000	Socket Head-Cap Screw	7
19	1092-05050150	Key 5x5x15	2
20	0303-50430100	Cross Feed Lead Screw	1
21	0303-50431100	Cross Feed Nut Base	1
22	1910-06010000	Socket Head-Cap Screw	4
23	0303-41402300	Lubrication Pipe	1
24	0303-50430200	Leadscrew Nut (Front)	1
	0303-50430300	Leadscrew Nut (Rear)	1
25	1951-05000000	Spring Washer	3
26	1951-05006000	Socket Head-Cap Screw	4
27	1131-05200000	Snap Ring R52	1
28	3920-11205000	Bearing 1205	1
29	0303-41401100	Bearing Housing	1
30	0303-41401200	Timing Belt Pulley	1
31	1950-08000000	Washer	1
32	1930-08000000	Hexagonal Nut	1
33	2015-32110000	Timing Belt 322L 100	1
34	0303-41401300	Washer	2
35	0303-41401400	Time Belt Pulley	1
36	1914-04002000	Set Screw	1
37	1910-05008000	Socket Head-Cap Screw	8
38	0303-41401500	Cross Feed Motor Mounting Plate	1
39	7131-02300115	Cross Feed Motor 1/4 HP × 6P	1
40	1951-08000000	Spring Waher	1

No	Parts number	Parts name	Quantity
41	3090-06000000	Locking Nut AN06	1
42	1951-06000000	Spring Washer	1
43	8031-17025160	Needle Bearing NK 17/16A	2
44	1092-07070200	Key 7x7x20	1
45	1131-02500000	Snap Ring R25	2
46	0303-92507800	Sensing Plate	1
47	1015-04006000	Roundhead Screw	2
48	9930-00000052	Proximity Switch 012x35 NPN	2
49	0303-92503400	Switch Holder	1
50	1913-03003000	Screw	4
51	3100-06000000	Rolling Washer AW06	1
52	0303-41401600	Cover For Belt Wheel	1

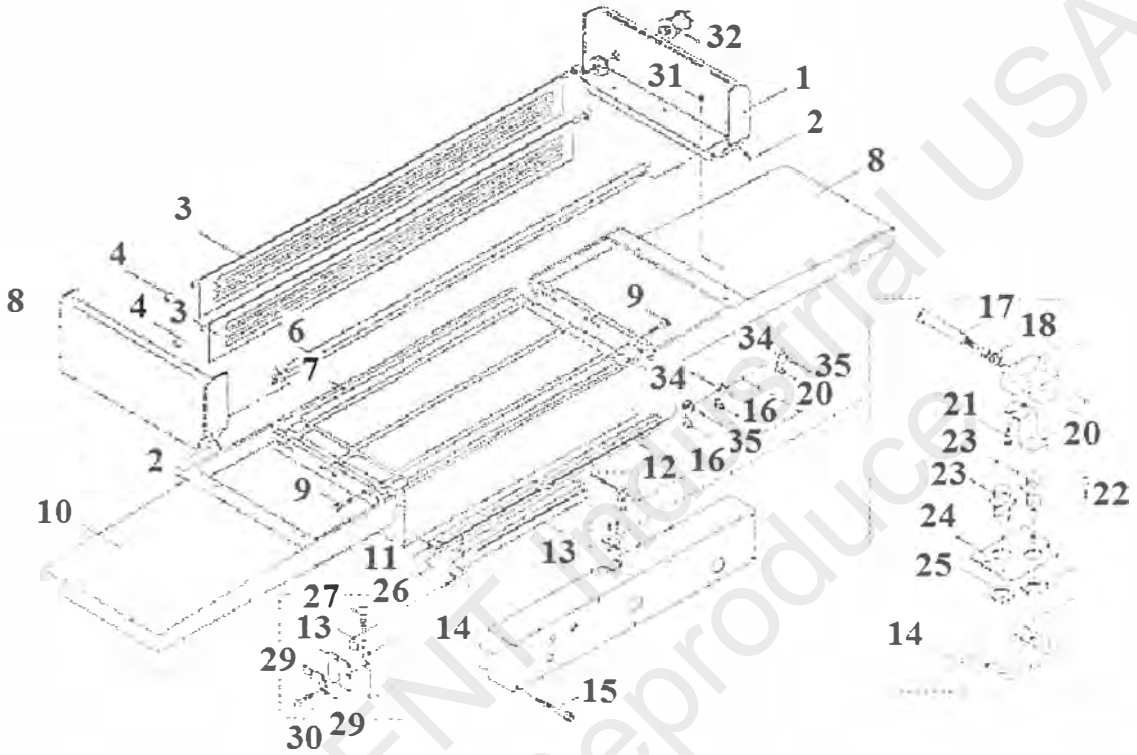
3.8 Parts for the saddle assembly



3.8.1 List of parts for the saddle assembly

No	Parts number	Parts name	Quantity
1	0303-50100300	Column	1
2	1910-16020000	Socket Head-Cap Screw	3
3	1910-16024000	Socket Head-Cap Screw	3
4	1951-16000000	Spring Washer	6
5	0303-50403400	Dust-Shied (Rear)	1
6	0303-41403100	Tension Spring	4
7	0303-50403200	Dust Shield (Rear)	1
8	1913-03003000	Screw	4
9	0303-50100400	Saddle	1
10	0303-50403600	Dust Shield (Front)	1
11	0303-50403700	Dust Shield (Front)	1
12	0303-50403800	Dust Shield (Front)	1

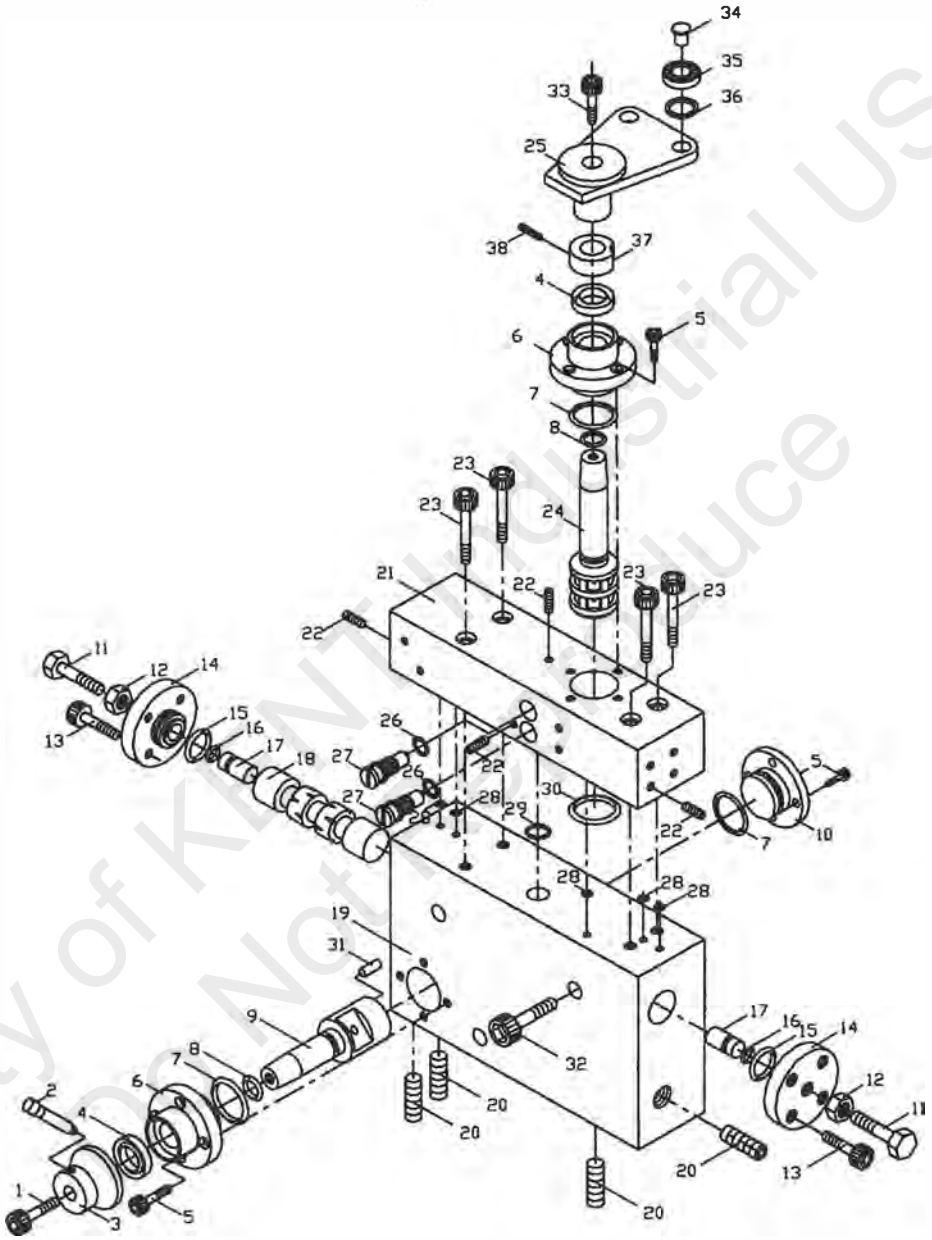
3.9 Proximity switches (left/right)



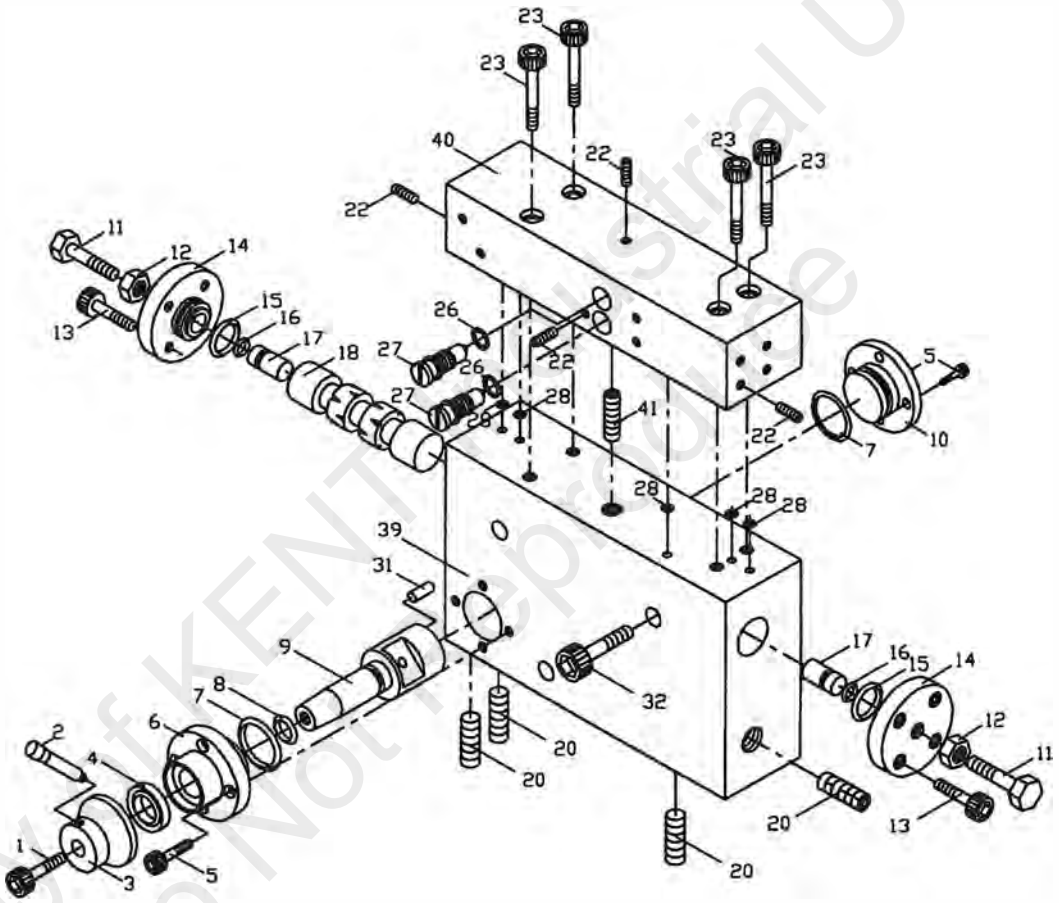
3.9.1 List of parts for the (left/right) proximity switches

No	Parts number	Parts name	Quantity
1	0303-50106600	Splash Guard	1
2	1910-06003000	Socket Head-Cap Screw	4
3	0303-41203600	Splash Guard (Rear)	2
4		Rubber Sleeve Dia. 13x6x25L	4
5	0303-50106500	Splash Guard (Left)	1
6	0303-50106700	Splash Guard (Front)	1
7	0303-50100200	Working Table	1
8	0303-50102100	Table Wing (Right)	1
9	1910-06012000	Socket Head-Cap Screw	12
10	0303-50102200	Table Wing (Left)	1
11	0303-50600300	Stroke Adjustment Slot	1
12	0383-63206800	Stroke Adjustment Slot	1
13	0303-50600800	Slot Cover	1
14	0303-50101100	Base Plate	1
15	1910-06004000	Socket Head-Cap Screw	7
16	0303-50600700	Sensing Plate (Left)	2
17	0303-50600500	Draw Bar	2
18	8578-00011800	Compression Spring D11800	2
19	0303-50600400	Dog	2
20	0303-50600600	Sensing Plate (Right)	2
21	1910-03003000	Socket Head-Cap Screw	8
22	1912-03003000	Round Head Screw	4
23	9930-00000052	Proximity Sw M12x35NPN,DC24V	2
24	0303-50601100	Switch Holder	1
25	1031-12005010	Hexagon Cut	2
26	1910-04010000	Socket Head-Cap Screw	8
27	1912-03003000	Round Head-Cap screw	8
28	0303-50601200	End Cover	2
29	0303-50601300	Fixing Plate	2
30	1912-03003000	Socket Head-Cap Screw	6
31	1910-06003000	Socket Head-Cap Screw	6
32	9926-06000020	Cable Clip Dia 20	1
33	8900-00000269	Ball Knob PL30-M6	2
34	0303-11203000	Limit Dog	2
35	1010-08040000	Socket Head-Cap Screw	2

3.10 Mechanical-types hydraulic valves assembly



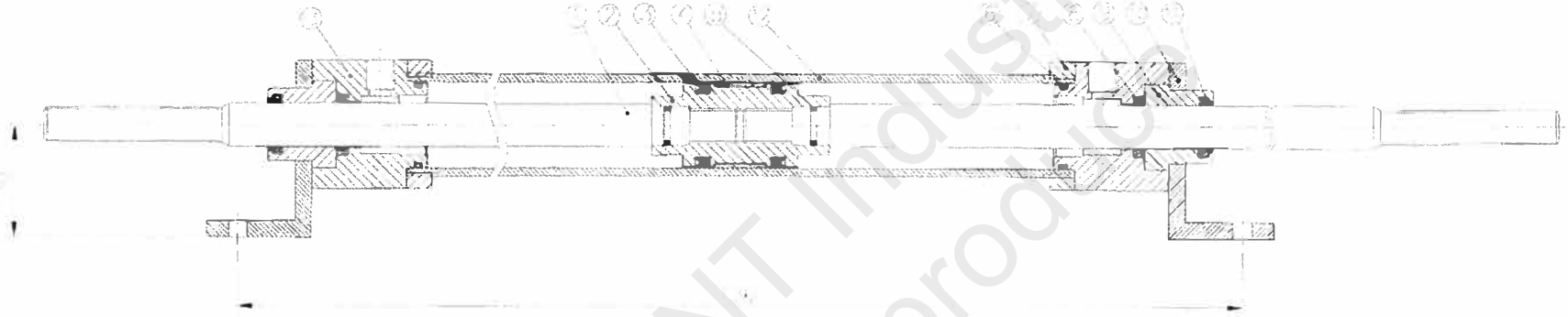
3.10.1 Proximity-type hydraulic valves assembly



3.10.2 Mechanical/proximity type of hydraulic valves parts list

No	Parts number	Parts name	Quantity
1	1910-04005000	Hexagon socket screw W1/4×5/8L	1
2	0303-25603500	Handwheel grip	1
3	0303-25603400	Flow control knob	1
4	4906-01502405	Dust shield ring SC1x24x5	2
5	1910-003004000	Hexagon socket screw W3/16×3/4L	8
6	0303-30630200	Ring retainer	2
7	4900-02200000	O-ring P12	2
8	4900-01100000	O-ring P11	2
9	0303-51630600	Flow control shaft	1
10	0303-51630400	Side cover	1
11	1911-05008000	Hexagon head screw W5/16×1L	2
12	1930-05000000	Hex nut W5/16	2
13	1910-03006000	Hexagon socket screw W3/16×3/4L	8
14	0303-30630700	Side cover	2
15	4900-01600000	O-ring P16	2
16	4900-00700000	O-ring P7	2
17	0303-30631100	Adjusting shaft	2
18	0303-51630900	Pivot piston	1
19	0303-51630100	Valve body	1
20	8410-00000000	Set screw W3/8 PT	4
21	0303-51630300	Direction valve body	1
22	1914-03003000	Set screw W3/16 x 3/8L	13
23	1910-04012000	Hexagon socket screw W1/4×11/2L	4
24	0303-51630500	Direction control shaft	1
25	0303-41603100	Direction control arm	1
26	4900-00900000	O-ring P9	2
27	0303-25630900	Adjusting screw	2
28	4900-00500000	O-ring P5	5
29	4900-01200000	O-ring P12	1
30	4900-02800000	O-ring P28	1
31	1070-04008000	Pin Dia. φ4x8L	1
32	1010-08095000	Hexagon socket screw M8×95L	3
33	1910-04006000	Hexagon socket screw W1/4×3/4L	1
34	0303-41603300	Rivet	2
35	3940-69004000	Bearing 6900ZZ	2
36	0303-41603200	Bearing spacer	2
37	0303-41603400	Control loop	1
38	1914-04002000	Set screw W1/4x21/2L	1
39	0303-50630100	Valve body (AHD)	1
40	0303-50630300	Direction valve body (AHD)	1
41	8410-02000000	Set screw W1/4PT	1

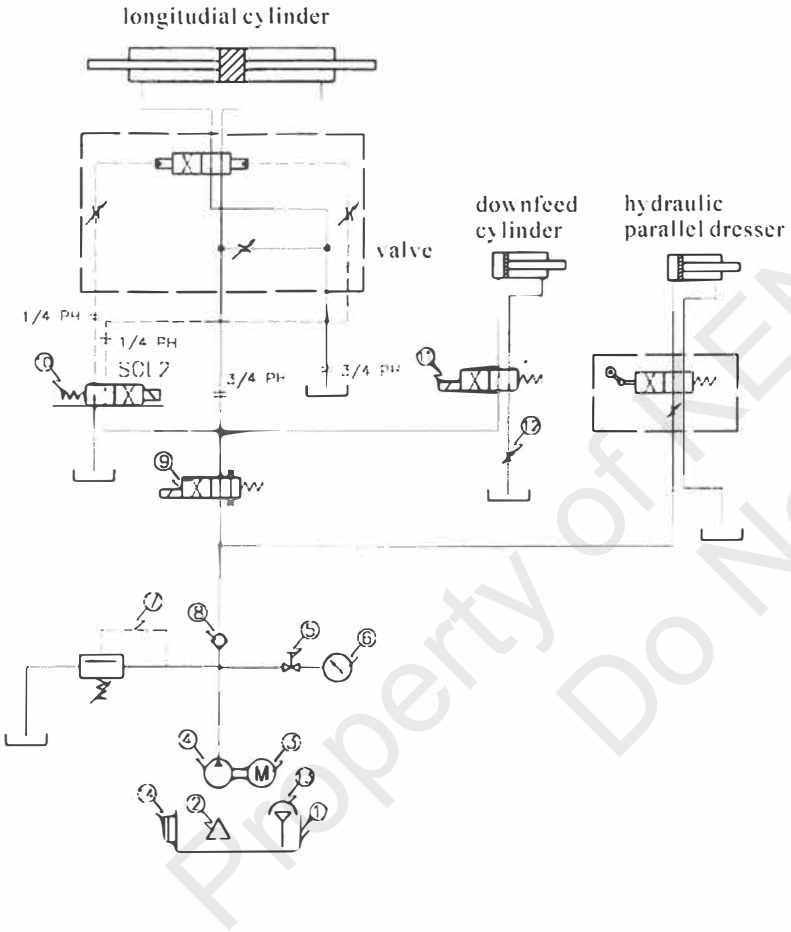
3.11 KGS-2040 AH AHD Hydraulic cylinder assembly



Item	Parts Name	Parts Number	Quantity	Note
1	Piston Rod	03-416420-00	2	
2	Piston	03-846411-00	1	
3	Oil Seal	30x40x6	2	
4	Piston Ring	36x25	1	
5	O-ring	P14	2	
6	O-ring	P35	2	
7	Divide Ring	03-416407-00	2	Size Fixed
8	U-packing	20x28x5	2	
9	Oil Ring Seat	03-256433-00	2	
10	Cylinder Bracket	03-416403-00	2	Size Fixed
11	Dust Ring	LBH-20	2	
12	Cylinder	03-416401-01	1	Size Fixed
13	End Cover	03-416406-02	2	

3.12 KGS-510AHD Hydraulic cylinder assembly

KGS-410/510 AHD AHD+Hydraulic parallel dresser circuit diagrams



Item	Name	Type	Quantity	Note
1	Oil Tank	670x550x455	1	170L
2	Filter	SFF-08	1	Jun-well
3	Motor	3HPx6P	1	喜群
4	Pump	50T-26R	1	KCL
5	Cock	1/4"	1	
6	Pressure Gauge	70kg/cm^2	1	雙葉
7	Relief Valve	RV-03G	1	Sunny
8	Check Valve	3/4"	1	
9	Solenoid Valve	SWH-G03-B2-10	1	TAIHA
10	Solenoid Valve	HD3-3W-BCA-025A-WYA2	1	Toyooki
11	Oil Level Gauge	SWH-G02-B2-10	1	TAIHA
12	Adjusting Screw	3/8" -24	1	
13	Oil Supply Cap	FB-12	1	Juw-well
14	Oil Level Gauge	LG-05A	1	