



A2100 SERIES

ACRA-FEED[®] AUTOMATIC SCREW FEED SYSTEMS



INSTRUCTION MANUAL

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ABOUT A2100



Features

1. Designed for speed, stability, and convenience.
2. Improves screw driving speed and work efficiency by integrating a pneumatic/electrical screwdriver, high-tech automatic feeder, and high precision jaw.
3. Jaw is customized for particular screw and working environments, providing stable operation.
4. Standard pneumatic screwdriver; optional models are also available.

Specification

Model	L/W/H	Weight	Voltage	Air Pressure
A2100	35/25/38 cm	22 kg	110 V	4–5 kg/cm ²



Preparation

Step 1: Connect the screw delivery hose, air hose, and signal cable to the feeder unit.

- Take a balance of the driver unit for easier fastening. While taking balance, make sure that the signal cable and air hose do not contact with hook or balancer wire. Care should be taken to prevent excessive bending or twisting of hoses and cables, since this can cause damage or disconnection.
- Connect the screw delivery hose between the feeder and the driver as soon as possible. Make sure that it is not excessively bent or twisted after installation.

Delivery Hose



Air Hose



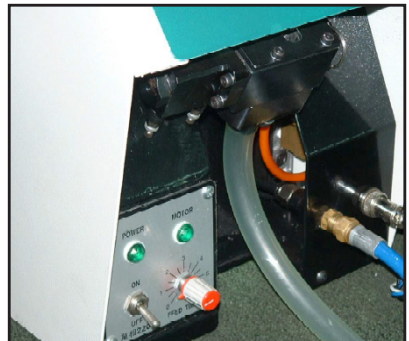
Signal Cable



Correct Delivery Hose Installment



Incorrect Delivery Hose Installment



Preparation

Step 2: Connect feeder unit to compressed air source with an air hose supplied. Air pressure for the feeder unit is 4–5 kg/cm².



Step 3: Air pressure must be controlled at the source. (Pull up first, then rotate).



Step 4: Check screw delivery timer setting on the front of the feeder unit. Standard operation setting is between 0 to 1.

Step 5: Connect power cord to a single-phase AC-110.



Start Up

Step 1: Open the hopper and cover and load hopper with a small quantity of screws.




Maximum volume



Step 2: Turn on the power switch. The power and motor pilot lamps will light, the feeding track will start reciprocating and screws will be fed into the chute. Once the chute is filled, the rotary drum automatically stops and the motor pilot lamp will go off.



Step 3: While holding the driver unit, telescope the Y-pipe manually. One cycle will send a signal to the feeder from the driver unit, and the escapement will use compressed air to release one screw from the chute to the driver's tip. First cycle has a 3–5 second delay before feeding.

 Never point the driver tip toward a person. A screw might shoot out accidentally, causing possible injury.

Start Up

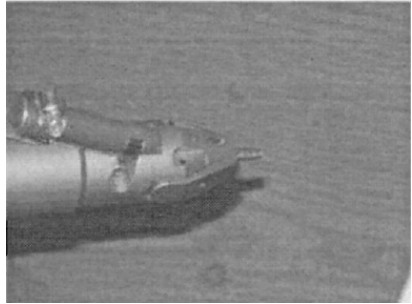
Step 4: Confirm driver bit rotation

- Driver should rotate when the bit is pressed against a flat surface while the Y-pipe is compressed.
- Check for any abnormal sounds during rotation.
- Driver rotates clockwise only.

Check screw feed



Check rotation



Step 5: Tighten torque check

- Fit the driver tip over the hole of screw to be tightened.
- Drive the screw into the hole by pressing the driver bit against the screw.
- Check that the screw is fastened to the specified torque. If not, adjust fastening torque. (See "Torque adjustment" on page 11 for adjustment).
- Make sure that the driver is vertical to the work surface and the delivery hose is free of twists and bends.
- Lift the driver only after you hear the whirring noise that indicates clutch release.

After completing installation and test operation, switch power off once before beginning normal operation.

Normal Operation

Step 1: After completing all preparatory steps, load screws into the hopper.

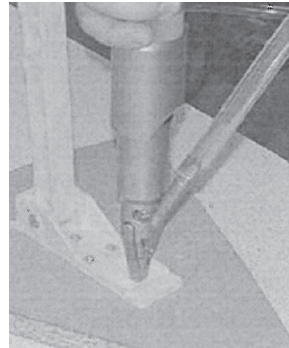


Step 2: Turn power switch on.



Step 3: Hold the driver unit and press the Y-pipe manually to confirm that the first screw is seen at the tip of the driver.

Operation demonstration



Step 4: Align the screw at the driver tip vertically with the screw hole of the work piece.

Step 5: When the driver bit is pressed against the screw, the screw will be tightened.

Step 6: Repeat steps 4 and 5 to tighten subsequent screws.

After Operation

1. Lubricate: Loosen the needle valve of the oiler while idling the driver. After confirming oil flow of 3 to 5 drops through the window, retighten the needle valve. Then, idle the driver unit alone for one or two minutes to allow oil to circulate.
2. Clean the chute:
 - With a brush, remove dust and metal fragments from sliding surface of chute.
 - Remove any grease with a cloth soaked in alcohol.Do not scratch or bruise the chute-sliding surface during cleaning.
3. Turn the power switch off after completing operations.

Maintenance

1. Clean hopper interior: Clean the hopper interior once a week. Remove any remaining screws and dust. If the interior is extremely dirty, wipe thoroughly with a clean cloth.
2. Check oil level: Check that oil level is between the top and bottom marks. Add oil if oil is running low.



3. Drain water from filter: Water accumulated in the filter should be drained by loosening the drain cock.



Air Pressure Adjustment

Air pressure supply to feeder unit must be within 4–5 kg/cm².



Screw Delivery Time Adjustment

Screw delivery time is the time for the screw to pass through the screw delivery hose to the driver jaw.

The screw delivery time will vary depending upon the type of screw and length of screw delivery hose.

Adjust screw delivery time by setting the timer on front of the feeder. 0 on the dial indicates the shortest time (approx. 0.1 sec.) and 10 indicates the maximum time (approx. 2 sec.) Standard operation setting is 1 to 2.

If the time is too short, the screw may not be delivered.

Determine the most appropriate level by trial-and-error. Confirm that screws are delivered to the driver jaw.



Screw Delivery Air Volume Adjustment

If satisfactory screw delivery cannot be obtained by time adjustments, the screw delivery air volume must be reset by turning the switch rod adjustment screw on right of the feeder escapement.



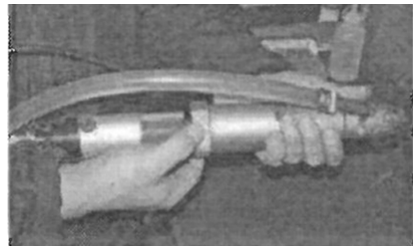
The volume of air supplied to the screw delivery hose increases when the lock nut is loosened and the switch rod adjustment screw is turned *counter-clockwise*. This operation also increases screw delivery speed.

Turn screw *clockwise* to decrease air volume and slow delivery.

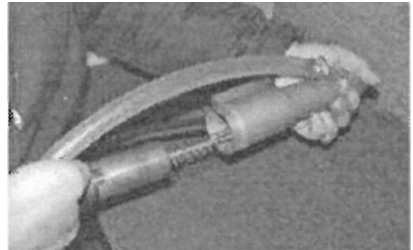
After adjustment, tighten the nut securely.

Torque Adjustment

Release the nut.



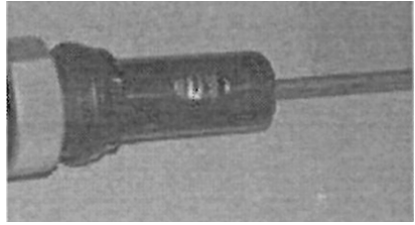
Disassemble the front part.



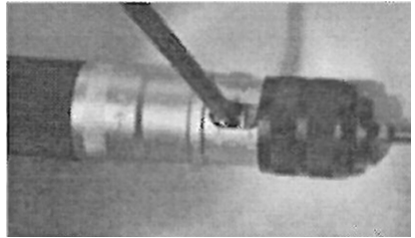


ADJUSTMENT AND REPLACEMENT

Turn the bit to expose a hose in which you'll insert a #1 Phillips screwdriver.



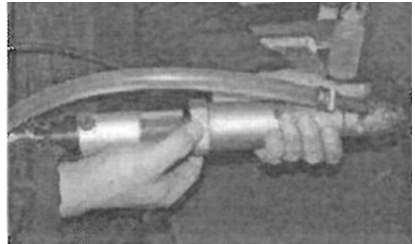
Rotate the hand screwdriver clockwise to increase torque and counter-clockwise to decrease torque.



Remember: The numbers 1, 2, 3 on the housing do not indicate actual torque. They simply indicate whether the tool is toward the high, low, or middle of its torque range.

Bit Replacement

Release the nut.



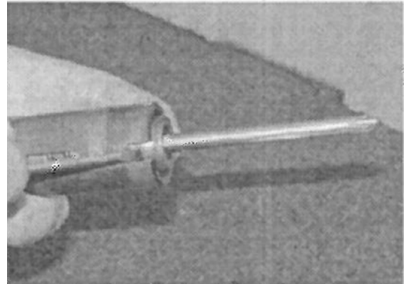
Disassemble the front part.



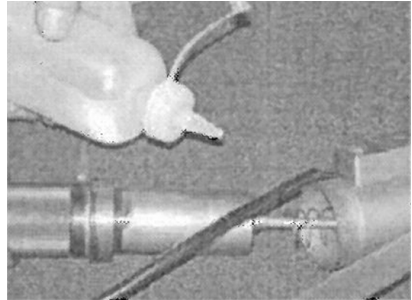
ADJUSTMENT AND REPLACEMENT



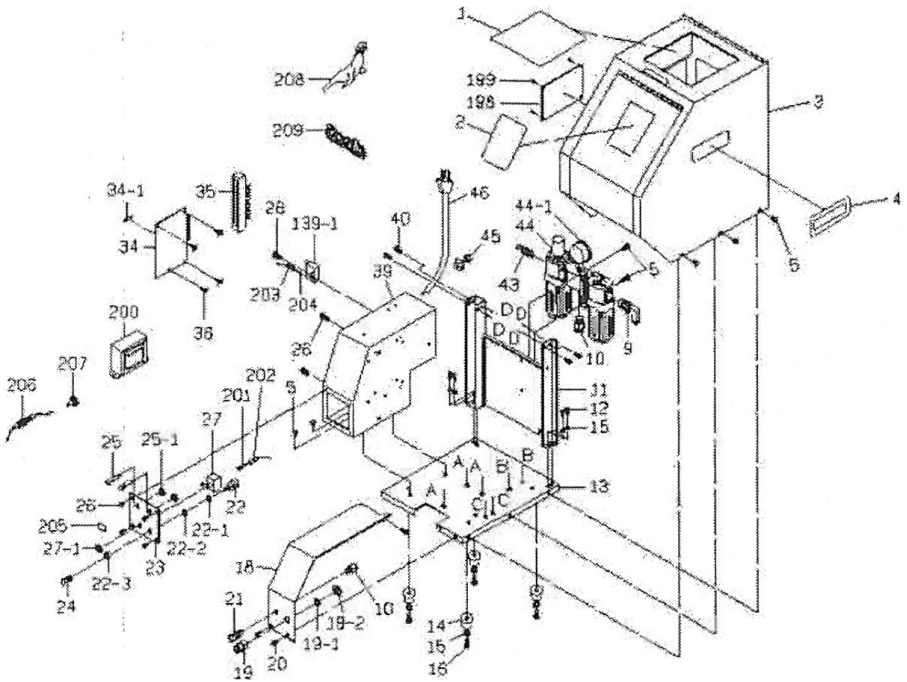
Use a negative driver and push the ring forward. Keep pushing the ring forward and pull the bit out. While still pushing the ring forward, insert the new bit



Lubricate and reassemble.

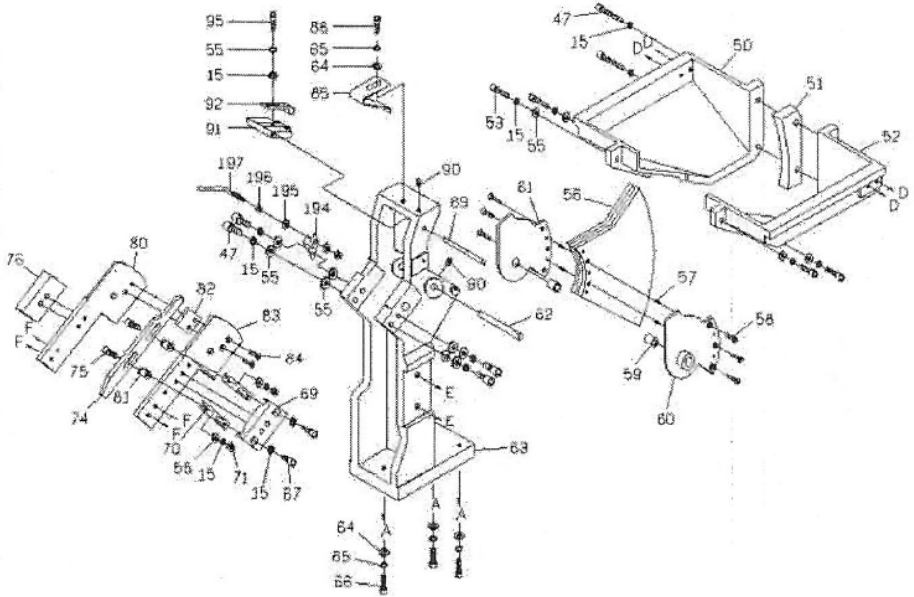


TOOL BREAKDOWN AND PARTS LIST



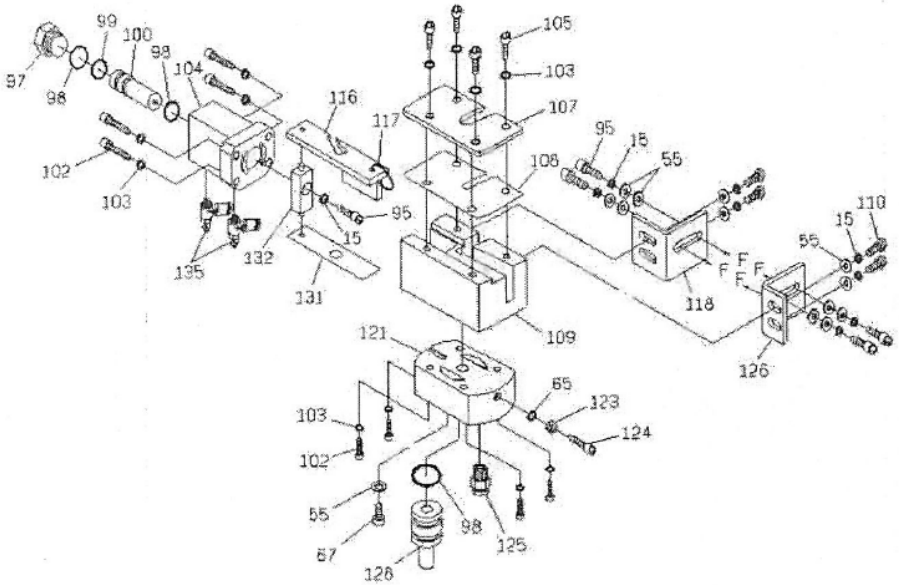
Index	Part No.	Description	Qty	Index	Part No.	Description	Qty
1	CM-001	Clear Plate	1	22	SH07	Varistor	1
2	CM-002	Clear Plate	1	23	CM-023	SW Panel	1
3	CM-003	Cover	1	24	SH08	Midget Knob	1
4	CM-004	Handle	2	25	LP05	Pilot Lamp	2
5	SWW3001	Screw	12	27	CM-027	Snap Switch	1
9	JOPQ008	Union	1	34	CM-034	Complete PCB	1
10	JOPQ009	Union	4	35	ST21	Connector Wiring	1
11	CM-011	Back Panel	1	36	OE023	Rocking Circuit Board supp	1
12	SWP3003	Screw	4	39	CM-039	Electric Box	1
13	CM-013	Chassis	1	43	JOPM003	Union	1
14	OH017	Rubber Foot	4	44	AC02	Air Unit	1
18	CM-018	Right Panel	1	45	OE004	Cord Pushing	1
19	ST02	Receptacle	1	46	CM-046	Power Cord	1
21	JOP004	Union	1				

TOOL BREAKDOWN AND PARTS LIST



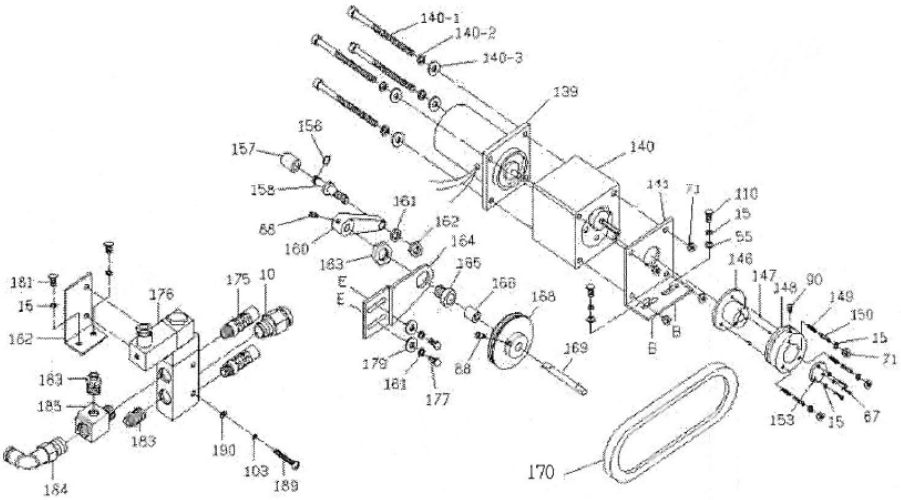
Index	Part No.	Description	Qty	Index	Part No.	Description	Qty
50	CM-050	Hopper	1	74	30F-074	Head Regulating Plate	1
51	CM-051	Hopper Block	1	76	CM-076	Chute fix block	1
52	CM-052	Hopper	1	80	30F-080	Chute	1
56	30F-056	Pushing Board	1	81	CM-081	Head Regulating Thimble	2
59	BG004	Bearing	2	82	30F-082	Chute Block	1
60	CM-060	Pushing Board Bearing Base	1	83	30F-083	Chute	1
61	CM-061	Pushing Board Bearing Base	1	85	CM-085	Spring	1
62	CM-062	Bar	1	89	CM-089	Bar	1
63	CM-063	Stand	1	91	CM-091	Gate	1
69	CM-069	Chute Fix Block	1	92	CM-092	Cleaning Board	1
70	CM-070	Head Regulating Stand	2				

TOOL BREAKDOWN AND PARTS LIST

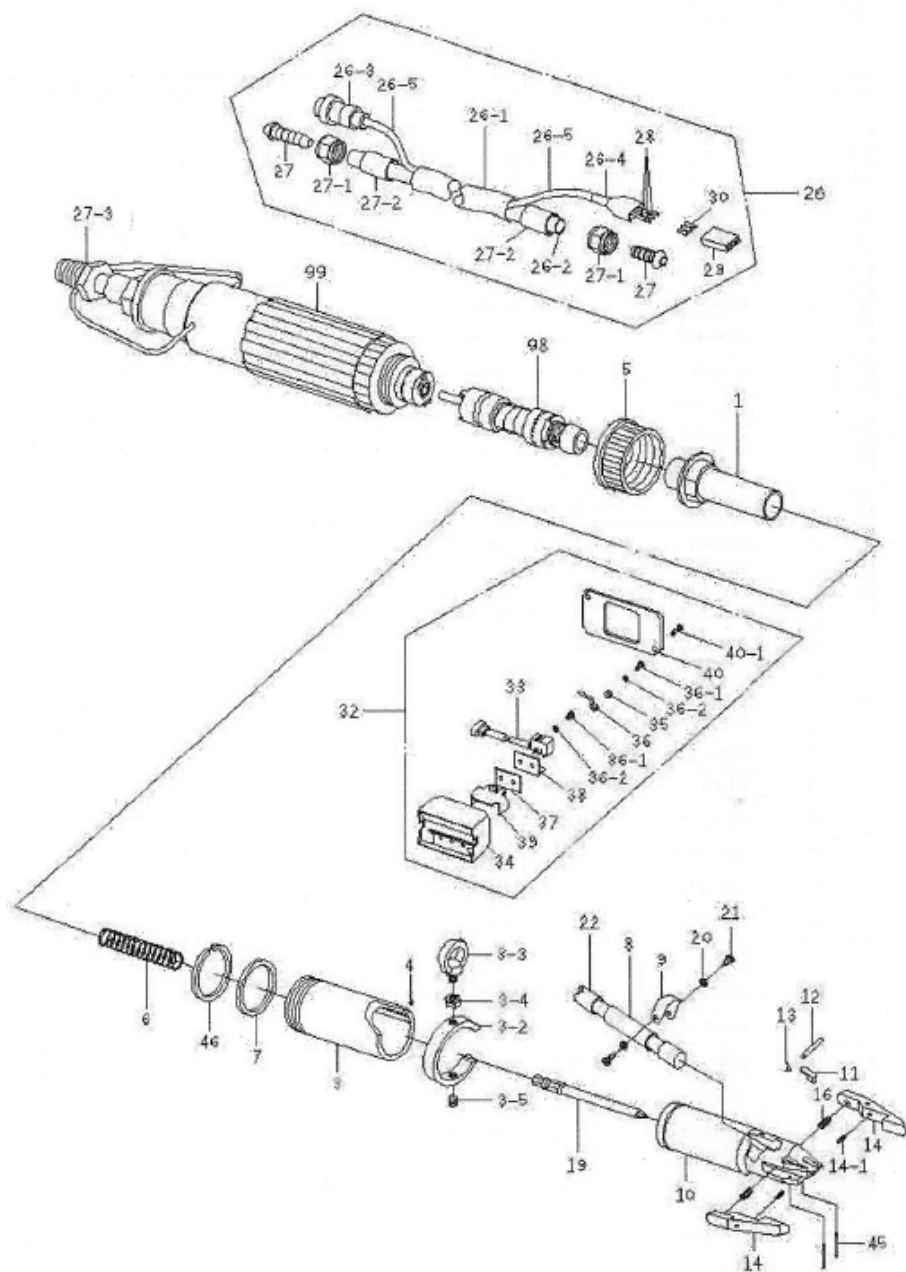


Index	Part No.	Description	Qty	Index	Part No.	Description	Qty
97	CM-097	Screw	1	117	OH021	Ring	1
98	OVCP14	O-ring	3	118	CM-118	ES Connector	1
99	OVCP12	O-ring	1	124	CM-124	Screw	1
100	CM-100	Pistol	1	125	JOPQ007	Union	1
104	CM-104	Cylinder	1	126	CM-126	ES Connector	1
105	SWR2010	Screw	4	128	30F-128	Pipe Connector	1
107	30F-107	ES Cover	1	131	30F-131	Control	1
108	30F-108	Control Plate	1	132	CM-132	Pistol Block	1
109	30F-109	ES Block	1	135	JOPS004	Speed Control	2
116	30F-116	Shutter	1				

TOOL BREAKDOWN AND PARTS LIST



Index	Part No.	Description	Qty	Index	Part No.	Description	Qty
139	OE007	Motor	1	163	CM-163	Nut	1
140	CM-140	Gear Head	1	164	CM-164	Belt Roller Base	1
141	CM-141	Motor Plate	1	165	CM-165	Screw	1
146	CM-146	Clutch Base	1	166	BG006	Bearing	1
147	BLS050	Steel Ball	3	168	CM-168	Belt Roller	1
148	CM-148	Roller	1	169	CM-169	Bar	1
149	CM-149	Spring	3	170	OH022	Belt	1
153	CM-153	Clutch Cover	1	176	SV01	Electromagnetic Valve	1
156	RRE080	Snap Ring	1	182	CM-182	Electromagnetic Valve Base	1
157	BG005	Bearing	1	183	JOP005	Union	2
158	CM-158	Spindle	1	184	JOPQ010	Union	1
160	CM-160	Roller Arm	1	185	JOP006	Union	1



TOOL BREAKDOWN AND PARTS LIST



Index	Part No.	Description	Q'ty
1	40S-001	Adapter	1
3	40S-003	Pipe Cover	1
3-1	40S-003-2	Rings Set (#3-2-#3-5)	1
4	40S-004	Key	1
5	40S-005	Adjustment Nut	1
6	40S-006	Pipe Spring	1
7	40S-007	Cushion Ring	1
8	40S-008	Hose Joint	1
9	40S-009	Band	1
10	40S-010	Y pipe	1
11	40S-011	Rocker	1
12	PN003	Spring Pin	1
13	40S-013	Rocker Spring	1
14	40S-014	Jaw	1
16	40S-016	Jaw Spring	2
19	BIT	Bit	1
21	SWP3002	Screw (#20 and #21)	2
22	40S-022	Delivery Hose	1
26	40S-026AS	Air Hose Set (#26-1-#30)	
29	ST10	Terminal	1
30	ST13	Pin Terminal	3
32	40S-032	Delivery Switch Set (#33-#40-1)	1
33	40S-033	Micro Switch Set	1
34	40S-034	MS Cover	1
35	40S-035	Cam Shaft	1
36	40S-036	Micro Switch Cam	1
37	40S-037	Micro Switch Base	1
38	40S-038	Insulation Plate	1
39	40S-039	Micro Switch Plate	1
40	40S-040	Micro Switch Cover Lid	1
40-1	SWF3007	Screw	2
45	PN002	Spring Pin	2
46	40S-046	Circlip	1
99	40S-099	Pneumatic/Electric Screwdriver	1



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