

Electric Swaging Unit

DES-1A

DEC.2011 Rev.1



Dk-Lok's Auto Pre-swaging

Setup and Operating Instructions

DK-LOK
Fittings & Valves

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◆ Contents ◆

1. Health and Safety information	<i>Page. 2</i>
2. General Information	<i>Page. 3</i>
3. Feathers	<i>Page. 3</i>
4. Standard Components & Accessories	<i>Page. 4</i>
5. Front Box Lay Out	<i>Page. 4</i>
6. Technical data	<i>Page. 4</i>
7. Setup Instructions	<i>Page. 5</i>
8. Prepare Tubing	<i>Page. 5</i>
9. Operating Instructions	<i>Page. 6</i>
10. Gauging Instructions	<i>Page. 7</i>
11. Precaution	<i>Page. 7</i>
12. Trouble-Shooting	<i>Page. 8</i>
13. Storage Instruction	<i>Page. 8</i>
14. Part List	<i>Page. 9</i>

1. Health and Safety information

Safety warnings

Always comply with the following precaution and usage tips to avoid dangerous.

 **WARNING!** Wear proper personal protective gear when operating or working near the swaging unit.

Follow all safety precautions to avoid personal injury or property damage during system operation.

Dk-Lok can't be responsible for damage or injury resulting from unsafe use, lack of maintenance or incorrect product and/or system operation.

Contact your authorized **Dk-Lok** distributor when in doubt as to the safety precaution and operations.



1. Do not use this apparatus near water.



2. Clean only with dry cloth.



3. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.



4. Unplug this apparatus when unused for long periods of time.



5. Refer all servicing to qualified service personnel, servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has exposed to rain or moisture, dose not operate normally, or has been dropped.

6. Mains plug is the disconnecting device. The plug must remain readily operable.

2. General Information

DES-1A , Dk-Lok'S Auto Hydraulic Pre-swaging Machine, design for use for all Dk-Lok tub fitting range 1/2" – 2"(12mm-38mm), The unit may therefore be used for a variety of different applications.

The standard version is for 220V supply, a 110V version is also available on request.

Ferrules, nut and tube being properly pre-assembled, tube end shall rest on die shoulder, tapered face of front ferrule shall contact swaging cone, and nut shall be fixed to swaging jig.

Press the "start" switch, initiating the swaging process. The piston with the swaging cone advances.

Once the set pressure has been reached the swaging process is concluded. The piston with the swaging cone automatically returns to its initial position and the hydraulic pump unit switches off.

Now, pre-swaging is completed.

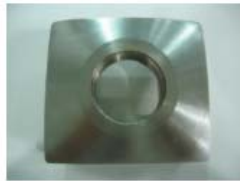
3. Features

- re-swage **Dk-Lok** ferrules onto tubing
- Fractional: 1/2" , 3/4" , 1" , 1-1/4" ,1-1/2" , 2"
- Metric: 12mm , 20mm , 28mm , 32mm , 38mm
- Standard 220V & Optional 110V
- Assure consistent makeup free from the manual pull-up torque
- Reduce installation time
- Easy to use by one operation
- Different size can be pre-swaged just by replacing Die & Jig
- Portable in sturdy plastic case

4. Standard Components & Accessories



Swaging unit



Fixture



Jig



Die



Die fixing bolt

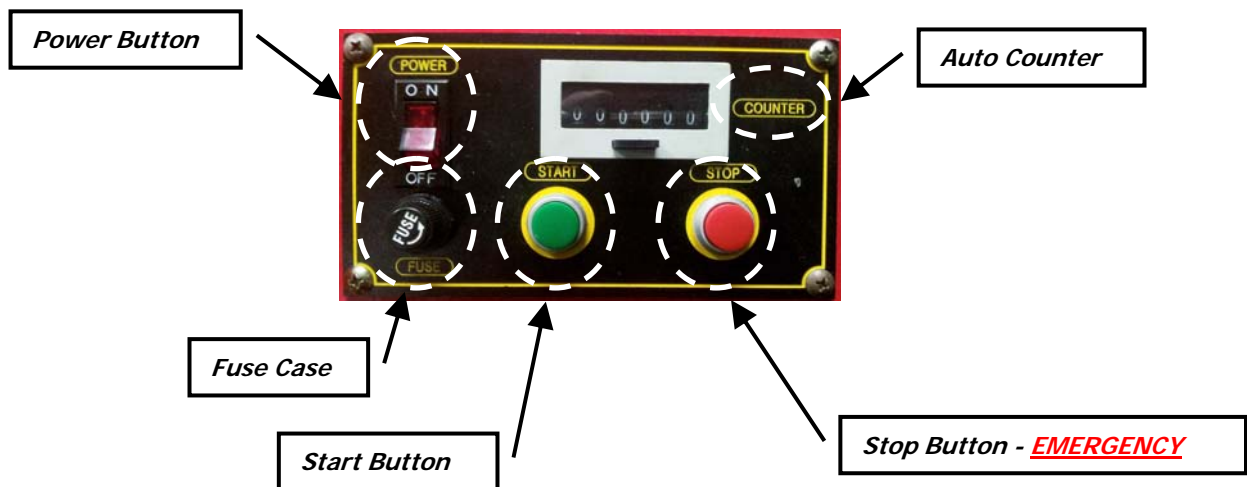


Allen key



Wrench

5. Front Box Lay Out



6. Technical data

The standard version is for 220V supply and a 110V version is also available on request.

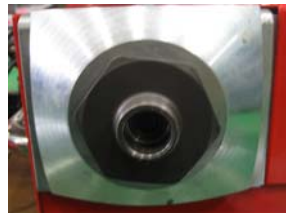
Hydraulic pump	0.35 – 2.01 kW /min
Operation pressure	0 ~ 600 bar
Connection	220V/110V/1phase 50-60 Hz/2.5A
Dimension	400 * 400 * 230mm
Weight	20kg
Fuse	

7. Setup Instructions

1. Install swaging jig of desired size firmly to the pre-installed fixture using wrench.



Fixture

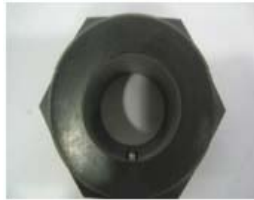


Swaging jig

2. Insert swaging die into swaging jig. Jig key should fit in swaging slot.



Swaging die



Jig key



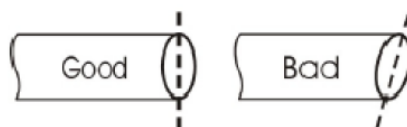
Swaging die slot

3. Position bolt in the center of swaging die and tighten it 6 mm Allen key to fix swaging die onto piston



8. Prepare Tubing

1. Check if tube O.D , wall thickness , circularity, hardness and their tolerance are within specifications for your application. Also check if surface is free from scratches and dirt.
2. Make a square cut.
3. Remove burs from inner and outer edges of tube.



9. Operating Instructions

1. Set up the swaging pressure as tabulated in **Table 1** for each tube size.



2. Assemble front ferrule, back ferrule and nut onto tube.



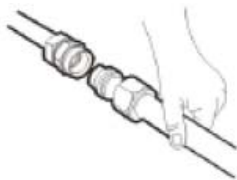
3. Insert pre-assembled nut, ferrules and tube into swaging jig and hand-tighten the nut.



4. Switch on the power
5. Keeping tube end in contact with die shoulder, press “start” button until pre-swaging completed you may push the red “stop” button in case of emergency.



6. Unscrew nut from swaging jig. Remove pre-swaging tube by gently rocking it up and down if necessary.
7. Insert the pre-swaged tube into a fitting body and make sure the ferrule set seats in the fitting . Tighten the nut on the fitting on the fitting body until finger-tightened.



8. Tighten the nut with wrench further to the turn show in **Table 2** for each tube size.
9. For continuous operation, return to step 2.
10. Turn the pressure setting handle to zero.
11. Turn off the power

10. Gauging Instructions

Position Dk-Lok no-go gap gauge in the gap between the nut and body hex.

When the gauge does not enter the gap, the fitting is sufficiently tightened.
When the gauge enters the gap, additional tightening is required.



11. Precaution

1. The pressure must be set as per the tabulation adhered on the swaging unit.
Incorrect pressure setting lead to faulty swaging.
2. Long tube length must be supported during the swaging process
3. Dirt, chip and others may interfere with swaging process.
The swaging dies should be thoroughly cleaned after each use.

Table 1

Fitting size		Thickness	Swaging Pressure(Bar)			
Fraction	Metric		Fraction		Metric	
			Unit: mm	stainless	carbon	stainless
1/2"	12mm	2	80		80	
3/4"	20mm	2	120		120	
1"	25mm	2	150		150	
1-1/4"	32mm	3	140		140	
1-1/2"	38mm	3	200		200	
2"	50mm	3	220		220	

Table 2

Fitting size		Turn
Fraction	Metric	
1/2"	12mm	1/2
3/4"	20mm	1/2
1"	25mm	1/2
1-1/4"	32mm	5/8
1-1/2"	38mm	5/8
2"	50mm	3/4

12. Trouble-Shooting

No.	Problems	Solutions
1	The Dk-Lok swaging machine will not start	Make sure to press the Start/Stop button
2	The machine is not receiving power.	Check the power cord connection. Check the power switch and the power source.
3	When the swaging is not screwed into the fixture smoothly.	It may occur because of the jig key Interfering with the jig thread. You need to screw in the jig key so that it dose not interfere.
4	When tubing is not well swaged.	You need to change the swaging pressure up and down from The Values show in Table 1. In case ferrules grip too strongly, you may set the pressure down. In case ferrule does not grip enough, you may increase the pressure. If you still have the problems unsolved, you may ask to authorized distributor or Dk-Lok head office in South Korea.

13. Storage Instruction

1. Unscrew the die fixing bolt and remove the jig and die with wrench.
2. Clean all components and swaging unit body.
3. Wind the power cord around the red holder on the back.
4. Keep all of components and accessories in the supplied sturdy plastic case.

14. "Swaging Unit" Internal Components List

No.	Name	Manufacturing company	Specification	Q'ty	Remark
1	Electro Hydraulic Pump	NITTOH ZOHKI	-	1	UP-35RH
2	Timing Relay	KUN HUNG ELECTRIC	ISO 9001	2	KTM-3M
3	General Purpose Relay	HAN KUN RELAY	CE	2	
4	Toggle switch	WOO JIN ELECTRIC	-	1	WJT6210
5	Toggle switch	WOO JIN ELECTRIC	-	1	WJT6203
6	Pressure Gauge	-	-	1	
7	Magnetic auto counter	HAN SEUNG AUTOMATIC	-	1	
8	Transformer	-	-	1	