

YL-20 S



**Includes
STANDARD DIE SETS**

Size	Range (mm)	Length
32-10	10-14	55
32-14	14-16	55
32-16	16-19	55
32-19	19-22	55
32-22	22-26	70
32-26	26-30	70
32-30	30-34	75
32-34	34-39	75
32-39	39-45	75
32-45	45-55	90

TECHNICAL SPECIFICATIONS

Max hose size	1 ¼"
With additional die sets	1 ½"
Crimping force (kN)	1700
Max opening (mm)	die diameter + 26
Standard motor	3,6kW 400V 3-ph
Different voltage versions available	
Control	Digital control
Master dies opening/Length (mm)	124/80
Crimping range (mm)	
With standard die sets	10 – 55
With additional die sets	6 – 61
Weight (kg)	230 (without oil)
Dimensions (LxWxH mm)	600 x 480 x 1300
Quick Change-set	Standard
Foot pedal or Back stop device	Standard
Stand for machine	Standard
Die sets	Standard
10-14-16-19-22-26-30-34-39-45	

+ Container

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YL-32

**Includes
STANDARD DIE SETS**



Size	Range (mm)	Length
32-10	10-14	55
32-14	14-16	55
32-16	16-19	55
32-19	19-22	55
32-22	22-26	70
32-26	26-30	70
32-30	30-34	75
32-34	34-39	75
32-39	39-45	75
32-45	45-51	90
32-51	51-57	90
32-57	57-63	100
32-63	63-69	110
32-69	69-79	110

TECHNICAL SPECIFICATIONS

Max hose size	2" 4 SP
Crimping force (kN)	2200
Max opening (mm)	die diameter + 32
Standard motor	3,6 kW 400V 3-ph
Different voltage versions available	
Control	Digital control
Master dies opening / Length (mm)	132/80
Crimping range (mm)	
With standard die sets	10 – 79
With additional die sets	6 – 88
Weight (kg)	270 (without oil)
Dimensions (LxWxH mm)	600 x 480 x 1300
Die sets	Standard
10-14-16-19-22-26-30-34-39-45-51-57-63-69	
Quick Change-set	Standard
Foot pedal	Standard
Stand for machine	Standard

+ Container

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GENERAL INSTRUCTIONS

Installation instructions

The machine has to be installed on the machine stand with M8 bolts. The machine is delivered without oil. Fill the oil tank with hydraulic oil: viscosity ISO VG 46.
Oil volume: 40 litres.



Safety precautions

Do not use the machine without reading and understanding this manual!



**The machine has been designed for crimping hydraulic hose fittings only!
Usage for other purposes at user's own risk!
Use only original die sets and spare parts!
Do not modify safety or operation devices!**

Electrical connection and rotation direction check of the motor



NOTE! Only an authorized electrician can do following operations!

1. Check whether the *machine voltage* and the *supply voltage* are similar.
2. Connect the cable to the power supply.
3. Start the motor with green button (1).
4. Make sure that the motor rotates in accordance with the red rotation way arrow marking.
5. Stop the motor with red button (0).
6. In case the motor rotates in wrong direction, switch the electricity wires of the cable L1 to L2 and L2 to L1.

Before using the machine

Some parts of the crimping head must be properly lubricated before the first use. Open the master dies completely. Using a brush, spread grease to the **both** conical parts: one on the cone flange and another on the piston.

Close and open the master dies and spread the grease again. Repeat this a few times. Proper type of grease is always delivered with the machine, do not use any other type of lubricant.



Front side



Back side

TECHNICAL SPECIFICATIONS YL-20S

Max. fitting size	1 1/4"
Die opening	26 mm
Swaging force	1700 kN
Max. pressure	275 bar
Operating voltage	380/230 V three phase
Motor	3,6 kW
Pump	11,5 l/min
Hydraulic oil	Hydraulic oil viscosity ISO VG 46
Oil volume	40 litres
Noise level	71 dB (A)
Protection class	IP54

Dimensions

Height	1300 mm
Width	600 mm
Depth	480 mm
Weight	230 kg (without oil)

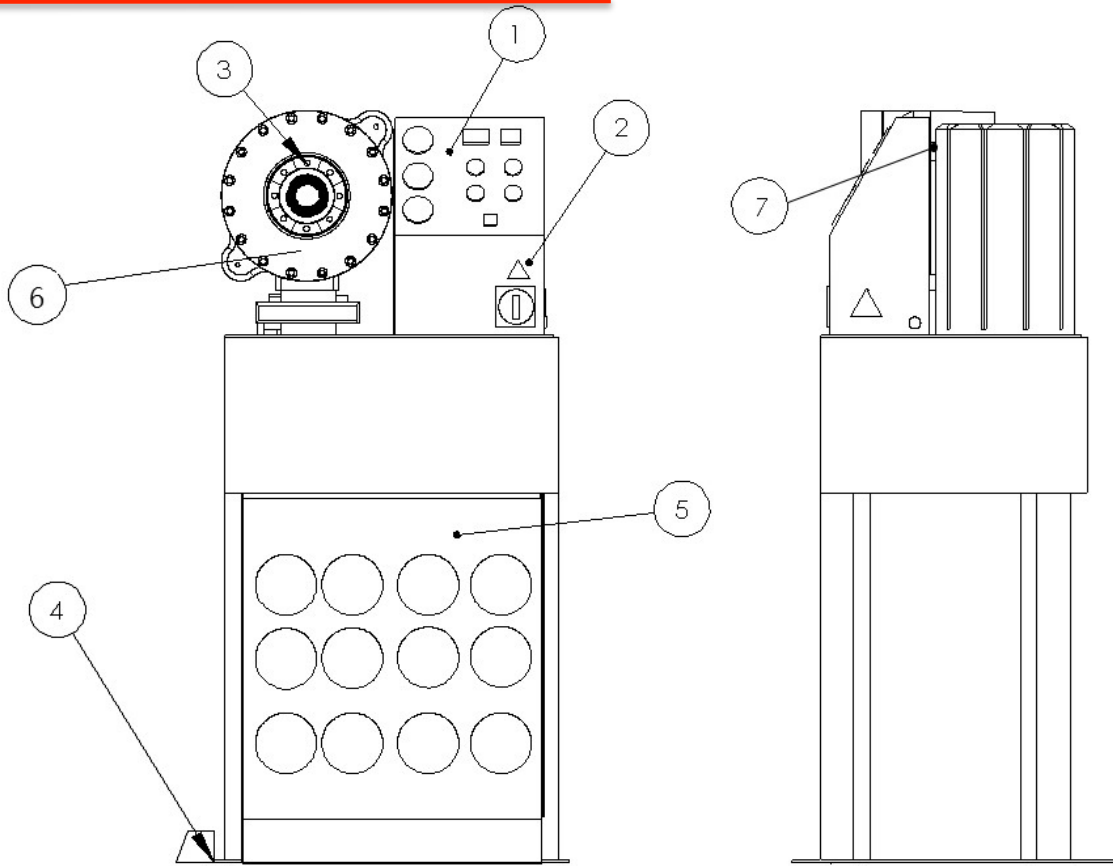
TECHNICAL SPECIFICATIONS YL-32

Max. fitting size	2"
Die opening	32 mm
Swaging force	2200 kN
Max. pressure	275 bar
Operating voltage	380/230 V three phase
Motor	3,6 kW
Pump	11,5 l/min
Hydraulic oil	Hydraulic oil viscosity ISO VG 46
Oil volume	40 litres
Noise level	71 dB (A)
Protection class	IP54

Dimensions

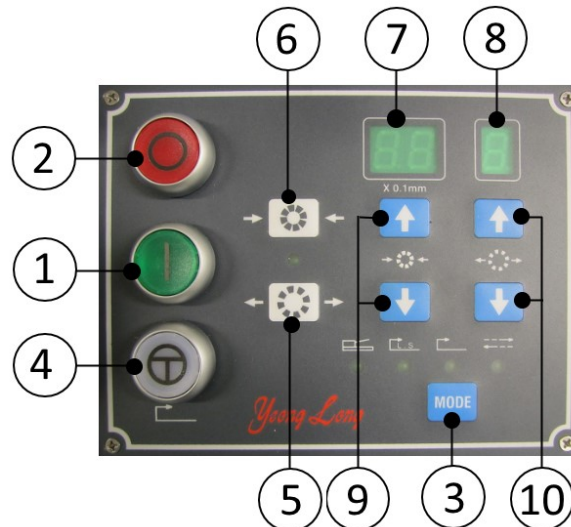
Height	1400 mm
Width	680 mm
Depth	570 mm
Weight	296 kg (without oil)

LOCATION OF OPERATION DEVICES



- (1) Control panel.
- (2) Electric box + main switch.
- (3) Die set.
- (4) Foot pedal.
- (5) Storage rack for die sets.
- (6) Crimping head.
- (7) Foot pedal / back stop device connector.

CONTROL PANEL



- (1) **START**
The electric motor will start, the machine runs idle and is ready to use.
- (2) **STOP**
It stops the motor and all the machine functions.
- (3) **MODE SELECTOR**
With the mode selector (3) you choose whether you use manual, semi-automatic or foot pedal / automatic mode.
- (4) **SEMI-AUTOMATIC**
With this button (4) you start semi-automatic crimping.
- (5) **RETRACTION BUTTON**
The dies will open when this button is pressed. The dies open until the button is released or the set retraction diameter has been reached. When using this button, manual mode must be selected.
- (6) **SWAGING BUTTON**
The dies will close when this button is pressed. The dies move until the button is released or the set swaging diameter has been reached. When using this button, manual mode must be selected.
- (7) **SWAGING DISPLAY VALUE**
See Swaging control button (9).
- (8) **OPENING DISPLAY VALUE**
See Opening control button (10).
NOTE! If the opening value is set to 0-position, the dies do not open!
- (9) **SWAGING CONTROL BUTTON**
With this button you set the desired swaging diameter.
- (10) **OPENING CONTROL BUTTON**
With this button you set the opening stage.
NOTE! If the opening value is set to 0-position, the dies do not open!

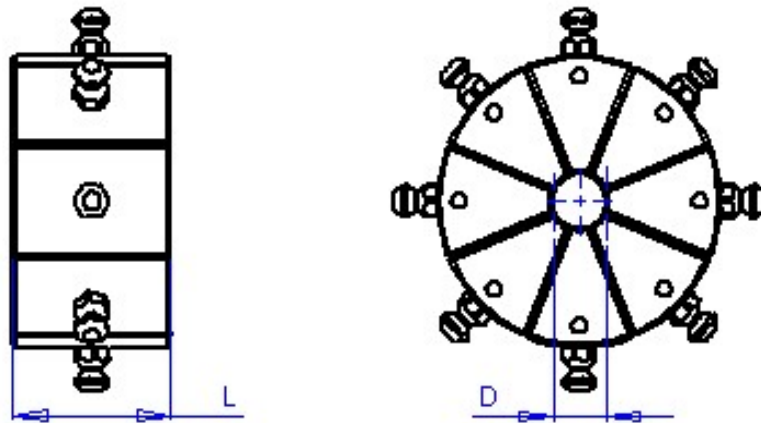
SELECTING THE CORRECT DIE SET

For swaging, choose the closest die set, which is smaller than the desired diameter.

Example: desired swaging diameter 25,6 mm. Use the die set size 32-22, using the button (9) set the value 36 to the display (7). **(22+3,6=25,6 mm).**

Recommended standard die sets according to the desired swaging diameters:

D	L	Swaging range
32-10	55	10----12
32-12	55	12----14
32-14	55	14----16
32-16	55	16----19
32-19	55	19----22
32-22	70	22----26
32-26	70	26----30
32-30	75	30----34
32-34	75	34----39
32-39	75	39----45
32-45	90	45----51
32-51	90	51----57 (YL-20S: Optional)
32-57	100	57----63 (YL-20S: Optional)
32-63	110	63----69 (YL-20S: Optional)
32-69	110	69----74 (YL-20S: Optional)
32-74	110	74----78 (YL-20S: Optional)
32-78	110	78----87 (YL-20S: Optional)



INSTALLING THE DIE SET WITH A QUICK CHANGE TOOL

Die sets are stored in the storage rack and installed in the master dies with a Quick Change tool one set at a time.

Changing the die set size 10 and smaller with the Quick Change tool is not recommendable. The die set may get broken due to the tool rod's diameter.

The die set size 74 and larger has not Quick Change possibility. These dies are too thin for Quick Change tool holes.

- (1) Before installing dies, make sure that master dies are clean.
- (2) STOP THE MOTOR PRIOR TO CLEANING DIES.
- (3) Start the motor and select *manual* mode.
- (4) Set the swaging diameter dial to 0.0.
- (5) Open the master dies.
- (6) Insert the pins of the tool into the die set in the locker, turn the tool clockwise and pull the whole set out (Figure 1).
- (7) Hold the handle of the Quick Change tool as shown in Figure 1 and make sure your hand will not get between the dies.
- (8) Mount the die set between master dies (Figure 2) so that the tool rod is fitted deep enough in the centering hole and start closing the dies in *manual* mode.

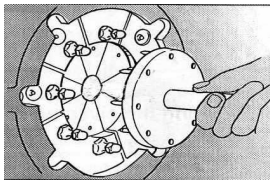


Figure 1.

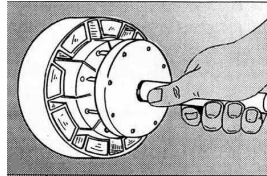


Figure 2.



TO AVOID DAMAGING MASTER DIES. MAKE SURE THAT ALL DIE SET PINS HIT IN THEIR HOLES PROPERLY!

- (9) Close the master dies completely until the pins are locked in their places.
- (10) Remove the tool. The dies are now ready for use.
- (11) Die set is removed from the press in reverse order: close the dies, insert the tool into the die set, open the master dies and place the set back in the locker.

CHANGING OF A SINGLE DIE

Dies can also be changed *one by one* with a change tool which is delivered together with the machine.

(1) Select *manual mode*.

(2) Open the master dies and STOP THE MOTOR.

CAUTION! ALWAYS TURN OFF THE POWER PRIOR TO INSTALLATION OR CHANGE OF DIES WITH THE CHANGE TOOL.

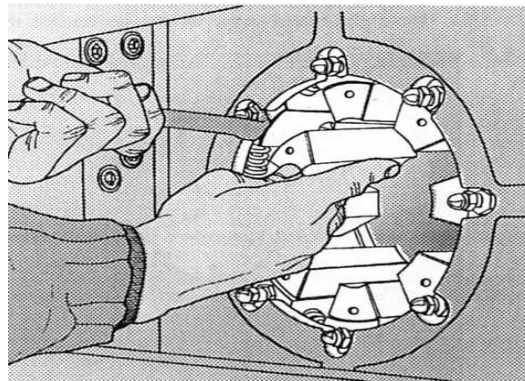
(3) Prior to installing dies, clean the contact surfaces of both the die and master dies properly to avoid damaging the surfaces.

(4) Pull the pin in the master die with the change tool.

(5) Insert the die with the retaining pin into the master die, die number always towards you.

(6) Release the pull pin.

(7) After installing all the dies, make sure they are straight and properly seated in the master dies.



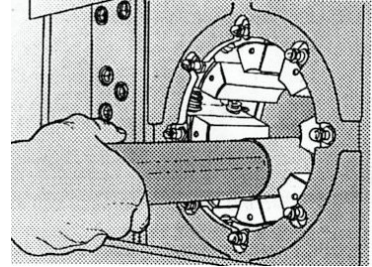
DIFFERENT MODES

a) MANUAL MODE



Manual mode is used during die set change, set-up and test run and when swaging special fittings.

- (1) Select MANUAL MODE.
- (2) Press the motor start button.
- (3) Adjust the retraction diameter when required.
- (4) Adjust the recommended swaging diameter.
- (5) Press the swaging button (6) until the dies stop.
- (6) Open the dies with retraction button (5) and remove the fitting.
- (7) Check the swaging diameter.
- (8) If necessary, perform fine adjustment with the swaging diameter dial.

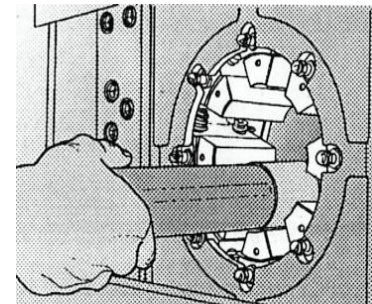


b) SEMI-AUTOMATIC MODE



Semi-automatic mode is used when performing small serial production.

- (1) Adjust the swaging and retraction diameters.
- (2) Select SEMI-AUTOMATIC MODE.
- (3) Insert the hose assembly between the dies.
- (4) Press the semi-automatic swaging button (4), and dies perform a swaging-retraction cycle. After reaching the swaging diameter, dies return to the retraction position irrespective of whether the button is pressed or not. The cycle can be interrupted by releasing the button. If needed, dies can be opened by using the retraction button (5). Swaging goes on when the button (4) is repressed.



Foot pedal works with all modes

c) FOOT PEDAL / BACK STOP DEVICE MODE



Foot pedal is used for example when you need your both hands for holding the hose.

Back stop device is best suited for serial production of straight fittings. Pressing the fitting against the stop device, the swaging movement starts.

If the foot pedal is connected:

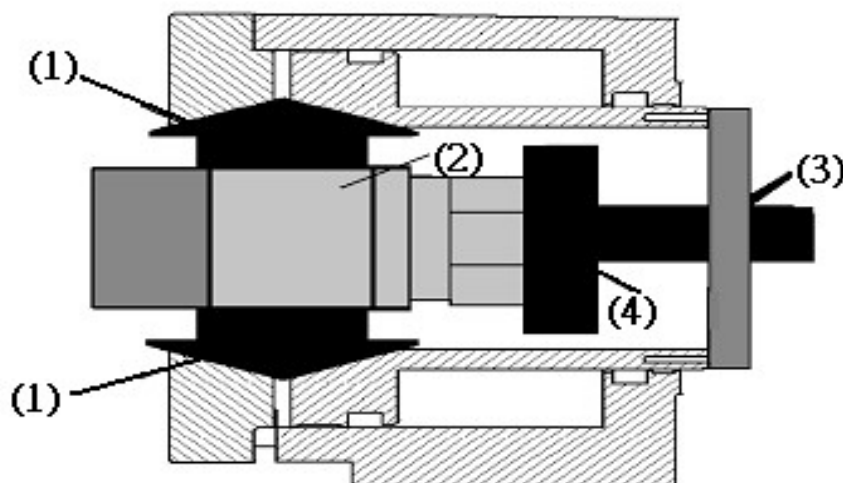
Dies will move as long as the pedal is pressed or till the set swaging diameter has been reached. The swaging movement can be interrupted by lifting the foot from the pedal. If needed, dies can be opened by using the retraction button.

If the back stop device is connected:

- (a) Select MANUAL MODE.
- (b) Insert the fitting (2) between the dies (1) to the correct position as shown in the figure.
- (c) Swage the dies lightly until they hold the fitting properly.
- (d) Loosen the locking lever (3) and push the stop device (4) against the fitting so that the spring-loaded stop device is compressed, making the limit switch inside it actuate. Tighten the locking lever.
- (e) Open the dies until the fitting loosens.
- (f) Set the required swaging diameter.
- (g) Select FOOT PEDAL / AUTOMATIC MODE.
- (h) When the back stop device is pressed, the machine performs a swage and returns to the set of retraction.
- (i) The movement stops if the fitting is not adequately pressed against the stop device. If needed, dies can then be opened by using the retraction button.
- (j) After dies have gripped the fitting, the swaging movement can be stopped only by the red STOP button.
- (k) Make sure that there are no foreign objects between the dies.
- (l) Make a test swage by pressing the fitting against the stop device.
- (m) Check the swaging diameter and correct the position of the stop device if necessary.



CAUTION! To protect your hands from getting swaged, don't ever touch the back stop device when the machine is running!



CLEANING AND MAINTENANCE

Regularly, clean the master dies and die sets when they look dirty. An old tooth brush can be helpful. The cylinder should be cleaned out from all metal dust by using a small magnet.

After 8 hours of use, the master dies have to be properly cleaned and greased with special high quality grease (molybdenum grease: Tribol Molub Alloy OG Heavy or equivalent). Ask your distributor for more information and availability of the grease.

GREASING

Open the master dies completely. Using brush, spread grease to the **both** conical parts of the cone flange and the piston.

Close and open the master dies and spread the grease again. Repeat this a few times.



Front side



Back side

OIL CHANGE

The hydraulic oil should be changed after the first 500 hours, afterwards every 1000 hours. Fill the tank to centre line of the oil level gauge.

- (1) Empty the oil through draining plug in the bottom of the oil tank.
- (2) Handle the waste oil according to regulations.
- (3) Fill the tank to center line of the oil level gauge.
- (4) Oil volume: 40 litres.
- (5) Recommended oil : Hydraulic oil viscosity ISO VG 46 or equivalent.
- (6) If any oil has run out on the floor, wipe it away.