

nexus

HYDRAULICS



NX-20T / NX-32T

OPERATION MANUAL

Manufactured by Nexus

NX-20T

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NX-32T

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READ BEFORE OPERATION

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GENERAL

NEXUS crimping machines are electrically operated hydraulic crimping machines for hydraulic hose assemblies.

The crimping machine comprises of a crimping head and a hydraulic unit mounted on the oil tank which serves as machine frame.

Transport

The packed machine is transported on a pallet, which is easy to move and lift by a fork-lift truck. After unpacking, the machine can be lifted using a hoisting belt.

Storage

The manufacturer has protected the machine against corrosion by using the Zerust method. The machined parts have been treated with Axxatec 77C protective agent. A Zerust vapor capsule has been put into the electric box, and the machine has been packed into a bag made of Zerust film.

The protection is effective for months if the package is not opened. After opening it, the protection of the wrapping film ceases. If the machine is not yet brought into use, it must be reprotected against corrosion. The machine is to be stored in dry indoor conditions. Remove the protective agent according to the instructions enclosed in the package.

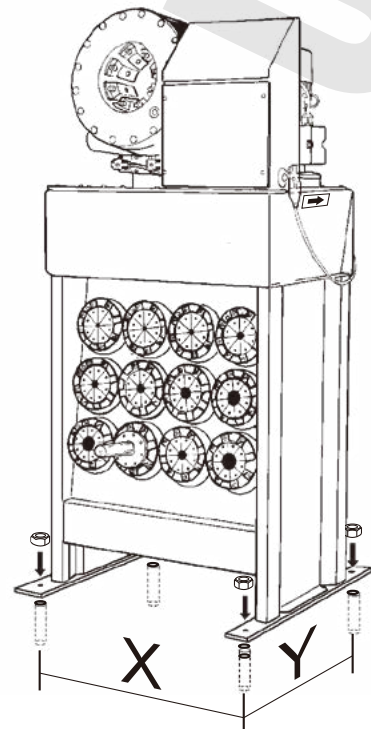
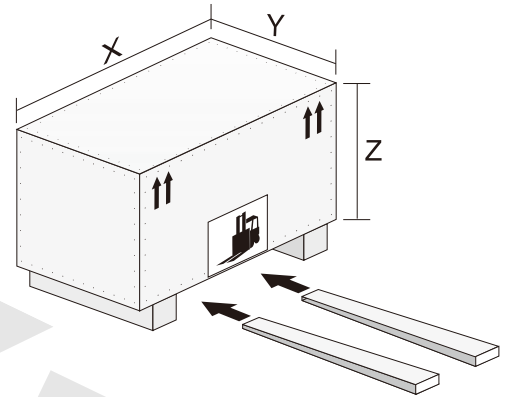
Mounting

It is recommended to mount the machine on a NEXUS table. Before mounting, the table must be screwed on the floor with four M12 wedge anchors. Boreholes in the floor: \varnothing 12 mm, depth 55 mm.

When the machine is mounted on a NEXUS table, the four shoes under the machine are removed.

The table with assembly instructions is packed separately.

The crimper may be installed on other tables as well, provided it is sturdy and broad enough or it has been fastened on the floor so that it cannot fall over. Furthermore, there must be a hole in the table to enable emptying the oil tank through the drain plug.



WARNINGS

General

The machine is intended for professional use. It is to be operated only by a trained operator who understands the dangers involved in the operation. Openings between the dies exceed 6 mm, thus being large enough to let fingers go between the dies and get crushed. It is ABSOLUTELY necessary to follow operating instructions and warnings indicated by the stickers on the machine when changing dies and crimping fittings.

Danger Zones



WARNING 1

Do not put your hands inside the dies while the motor is running!



WARNING 2

When crimping a fitting, hold the hose far enough to avoid crimping your hand!

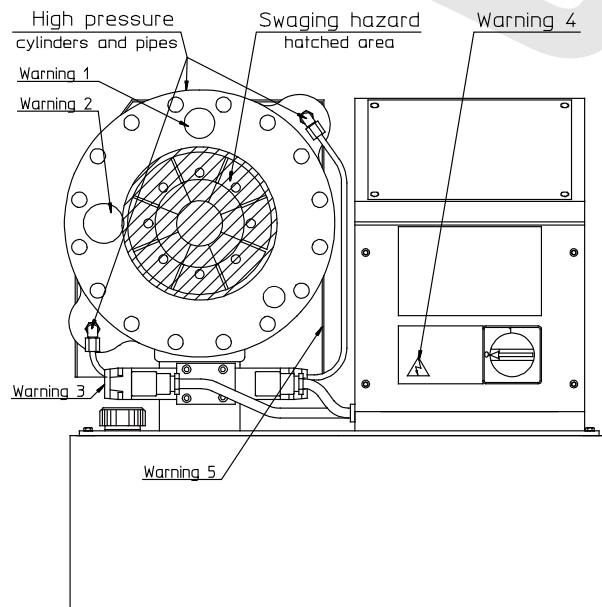
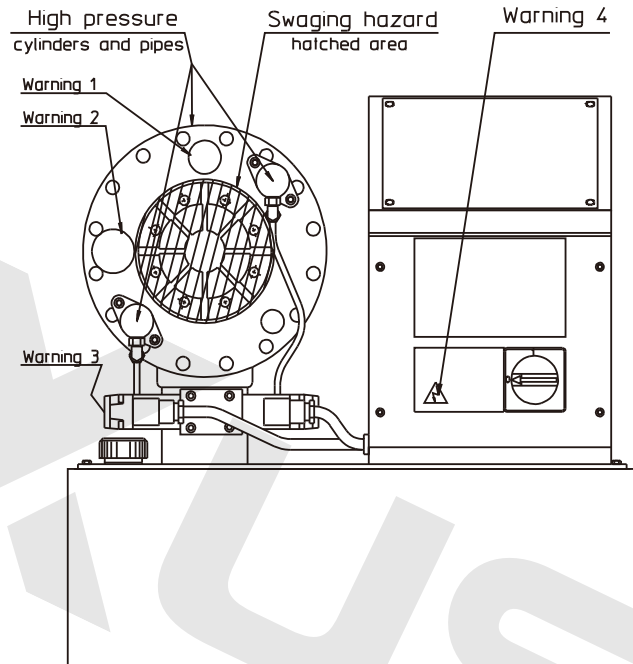
WARNING 3

Dies open and close by depressing the hand emergency push-buttons at both ends of the valve. Do not touch these push-buttons during normal operation!



WARNING 4

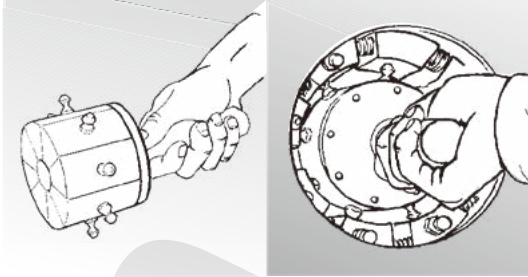
High voltage. The electric box is to be opened only by a professional electrician!



WARNING 5 (NX Models)

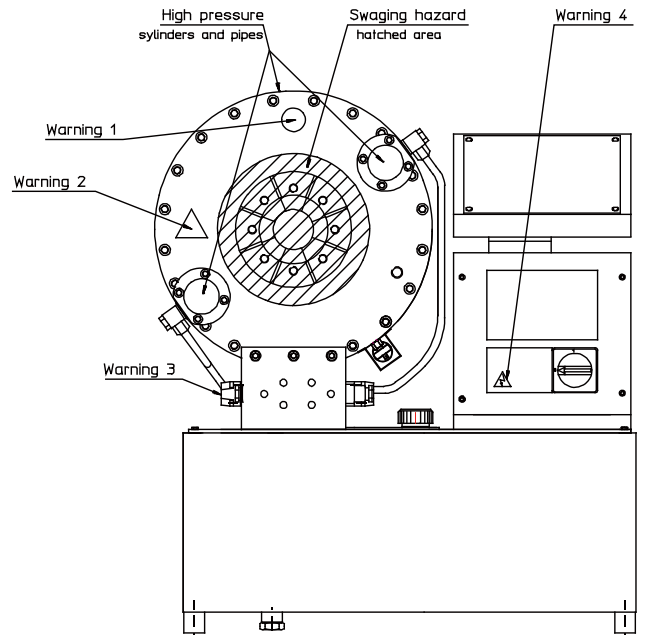
The rear of the crimping head is covered by a housing protecting the operator from the crimping hazard under the housing between rear flange and cylinder.

Do not remove this housing!



WARNING 6

When changing dies with the quick change tool, hold the handle as shown in the above figures. Make sure your hand will not get between the dies!



COMMISSIONING

Oil Fill

Fill the oil tank to centre line of the indicators in the dipstick with hydraulic oil like Shell Tellus T46 or equivalent. Volume of the tank is 32 litres. It is recommended to pump the oil into the tank through a 20 μ filter, to ensure zero contamination.

Electrical Connection

CAUTION! Check that the machine voltage (see type plate) is equal to your supply voltage 220V 20 AMP Twist lock. For proper installation to local code, consult a licensed contractor.

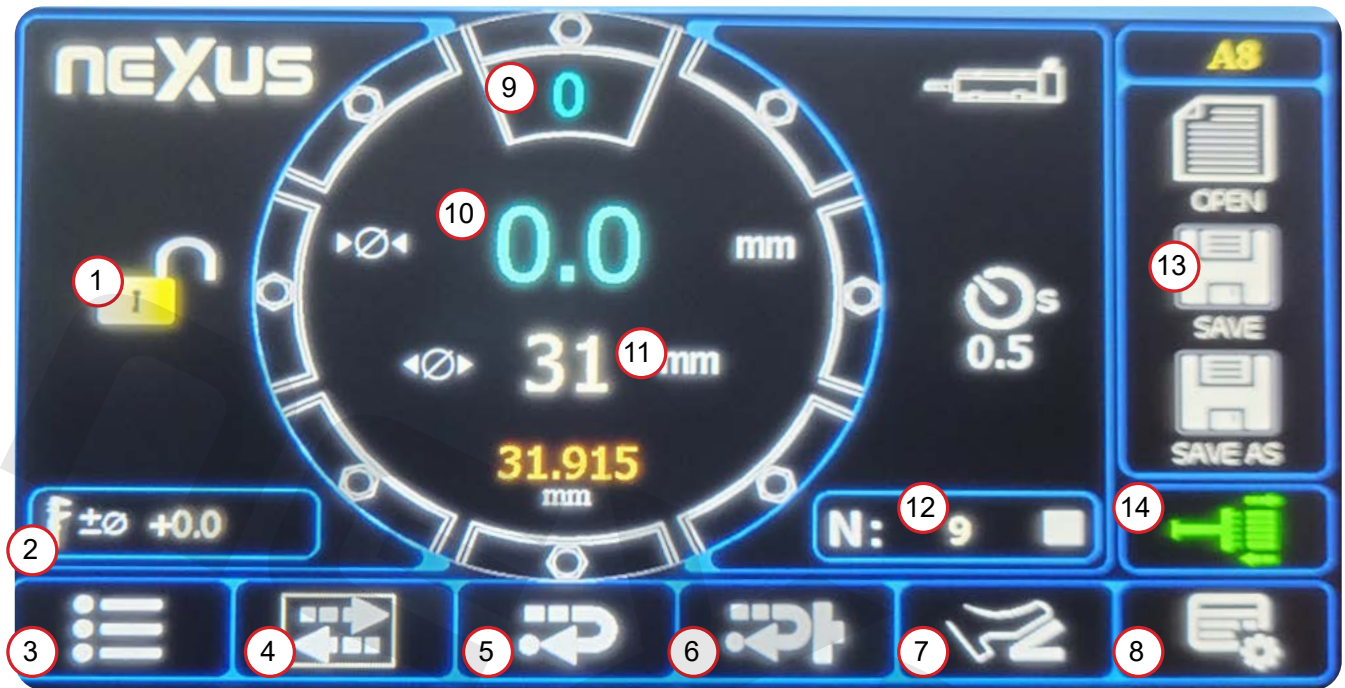
Connect the phase and the neutral to the respective terminals in the supply disconnecting device. Connect the earth connection to the ground terminal on the fixing plate. Check the connection against the wiring diagram enclosed in the spare parts list. Do not use an extension cord.

Quick Fix Package

Included with the machine, there is a Quick Fix-package which has some basic parts for that machine model.

TOUCH SCREEN MODEL CONTROL PANEL ILLUSTRATION CHART

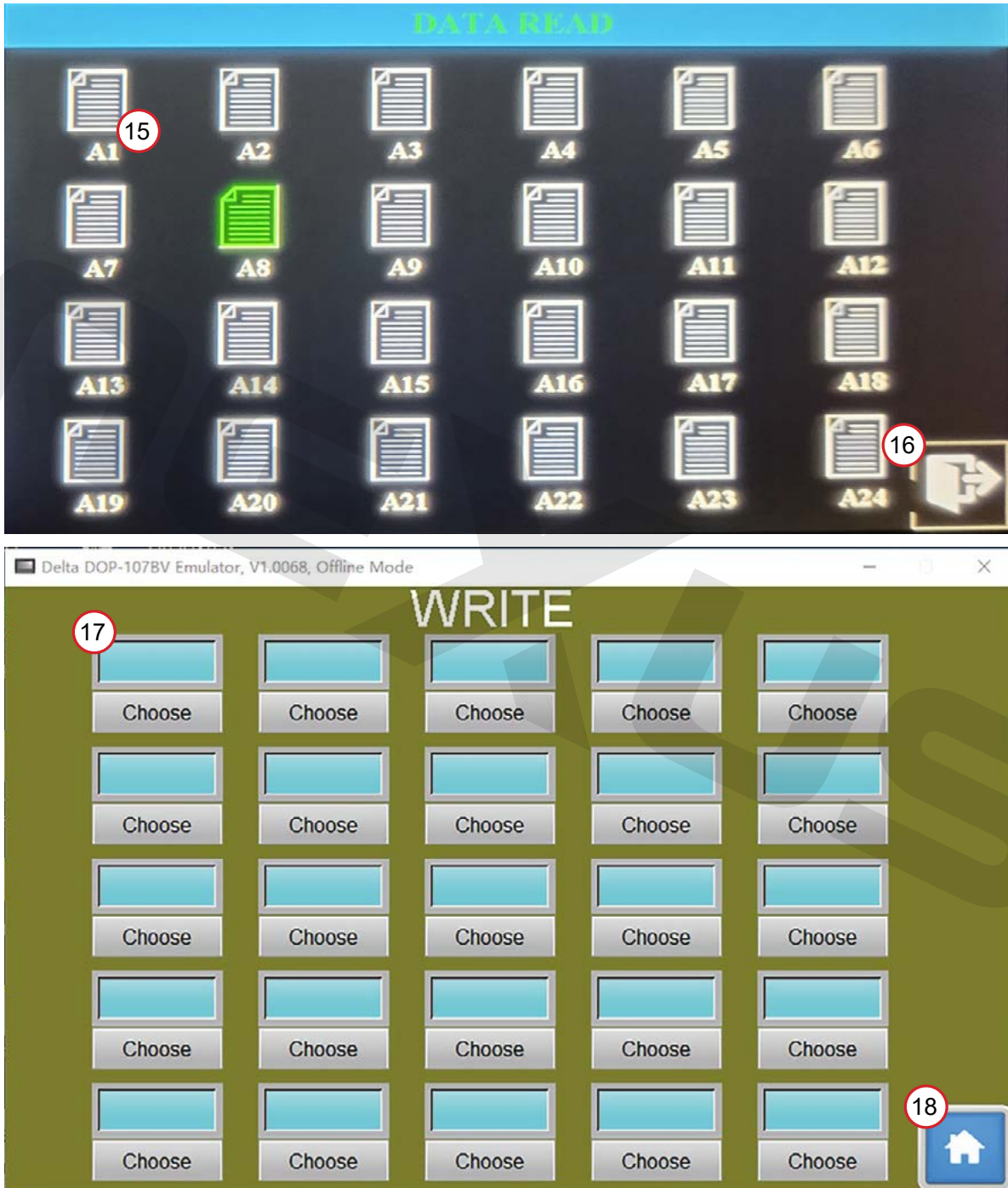
NX-20T & NX-32T Control Panel Illustration



1	LOCK/UNLOCK	Locks And Unlocks Screen
2	TEMPORARY ADJUST	Adjust Crimp Die, Resets To 0 When Machine Turned Off
3	CRIMP DATA	
4	MANUAL OPENING BUTTON	Press To Use The Panel Buttons To Crimp
5	SEMI-AUTOMATIC MODE	Auto Return After Achieving Crimp
6	BACK STOP CONTROL MODE	Back Stop Crimping (Optional) Tool
7	FOOT PEDAL CONTROL MODE	Foot Pedal To Crimp
8	PARAMETER SETTINGS	
9	DIE NUMBER	Enter Number Of Die Being Used
10	FINISH CRIMP DIAMETER	Finished Die Crimp To Achieve
11	DIE OPENING	Control The Return Distance
12	CRIMP COUNTER	Number Of Crimps Done
13	FAVOURITES/SAVE DATA	Press To Enter Storage Data
14	DIE CHANGE	To Enter Die Change Mode
15	STORED CRIMP SETTINGS	Press To Load Stored Crimp Setting
16	FOLDER RETURN	Press To Return To Previous Screen
17	WRITE CRIMP DATA	Select To Store Data In Location
18	HOME SCREEN	Press To Go To Main Screen

TOUCH SCREEN MODEL CONTROL PANEL ILLUSTRATION CHART

NX-20T & NX-32T Control Panel Illustration



WARNING

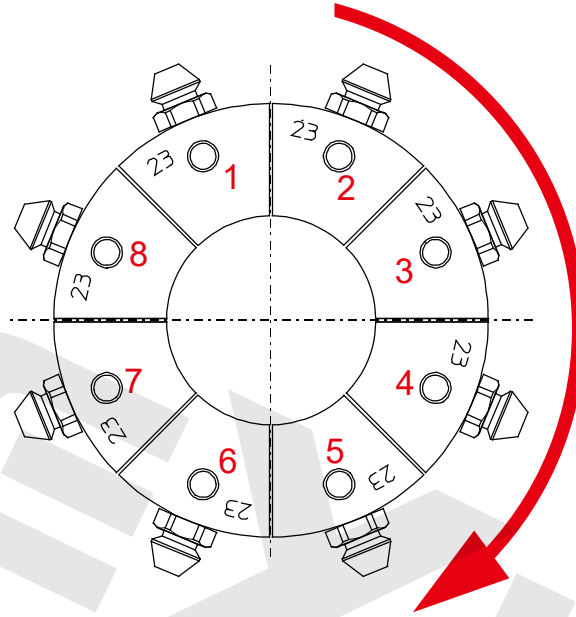
Correct die diameter must be entered and the crimping diameter shall be entered correctly, otherwise my damage the machine or even cause injury to the operator.

Please ensure the correct die and crimp diameter are entered to avoid damage or injury.

DIE SETS INSTALLATION WARNING

Die sets with marking 1 2 3 4 5 6 7 8 sequence are required to be installed clockwise in front of you if you stand facing the machine. Please check the picture for the installation guideline. Failure could result in ovality of the finished crimp.

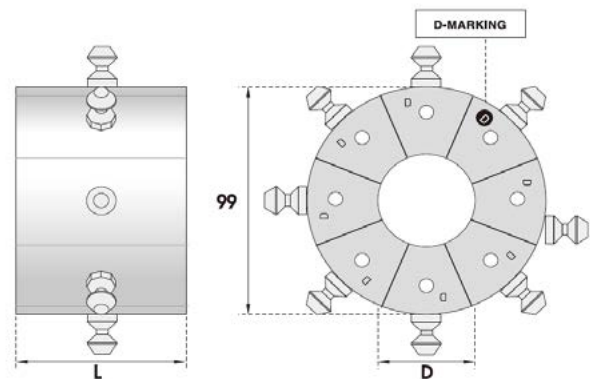
Die sets without marking 1 2 3 4 5 6 7 8 on each piece of the die sets are not required to be installed clockwise.



Selecting The Die Set

Use only original NEXUS die sets in NEXUS crimping machines. Refer to the fitting manufacturer's specifications for proper crimping diameter for the fitting. Each die set has its own crimping range. Follow it to assure the roundest possible crimping result. The minimum crimping diameter D is marked on each die set. **Example: With die set No 18506/10 the minimum crimping diameter is 10 mm.**

Included in NX-20T	Included in NX-32T	D	L	Die set No	Crimping range
		10	55	18506/10	10 ... 12 mm
		12	55	18506/12	12 ... 14 mm
✓	✓	14	55	18506/14	14 ... 16 mm
✓	✓	16	55	18506/16	16 ... 19 mm
✓	✓	19	55	18506/19	19 ... 22 mm
✓	✓	22	70	18506/22	22 ... 26 mm
✓	✓	26	70	18506/26	26 ... 30 mm
✓	✓	30	70	18506/30	30 ... 34 mm
✓	✓	34	75	18506/34	34 ... 39 mm
✓	✓	39	75	18506/39	39 ... 45 mm
✓	✓	45	90	18506/45	45 ... 51 mm
✓	✓	51	90	18506/51	51 ... 57 mm
✓	✓	57	100	18506/57	57 ... 63 mm
✓	✓	63	110	18506/63	63 ... 69 mm
	✓	69	110	18506/69	69 ... 75 mm
		74	110	18506/74	74 ... 80 mm
		78	110	18506/78	78 ... 87 mm



In addition to the standard dies, a wide range of special dies are available on request.

Installing The Die Set

QUICK CHANGE (OPTION)

An optional Quick Change Tool Base enables storing die sets under the machine.

Die sets can be installed into the master dies with a quick change tool one set at a time. Before installing dies, make sure that the master dies are clean.

- Select the change die button on screen.
- **STOP THE MOTOR PRIOR TO CLEANING DIES.**
- Insert the pins of the quick change tool into the die set in the die rack, turn the tool clockwise and pull the whole set out (Fig. 1).
- Hold the handle of the quick change tool as shown in figures 1 and 2, and make sure your hand will not get between the dies.
- Mount the die set between master dies (Fig. 2) and start closing the dies.
- **TO AVOID DAMAGING MASTER DIES, MAKE SURE THAT ALL DIE SET PINS HIT IN THEIR HOLES.**
- Close the master dies completely until the pins are locked in their places (Fig. 3). Remove the tool. The dies are now ready for use (Fig. 4).
- Die set is removed from the master dies in reverse order: close the dies, insert the tool into the die set, open the master dies and place the set back in the die rack.

Make sure to select crimp method, do not leave on die change function.

Fig. 1

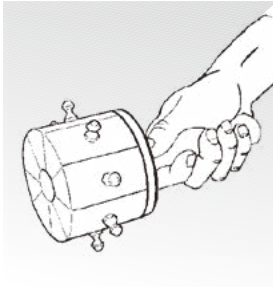


Fig. 2

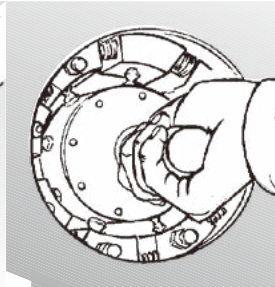


Fig. 3

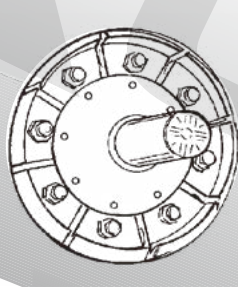


Fig. 4

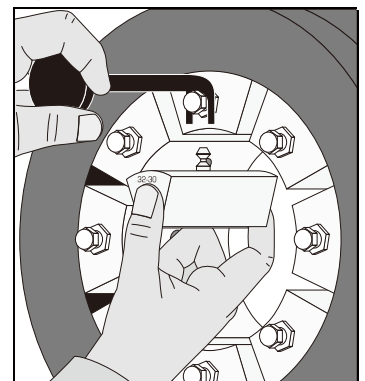


Change Of A Single Die

Start the motor and depress the retraction button until maximum retraction is reached. Stop the motor. **CAUTION! THE MOTOR MUST ALWAYS BE STOPPED DURING INSTALLATION OF DIES.**

- Prior to installing dies, clean the contact surfaces of both the die set and master dies properly to avoid damaging the surfaces.
- Pull the pull pin in the master die with the tool included together with the machine (see Fig. 5).
- Insert the die with the retaining pin into the master die, die number is always towards you. Release the pull pin.
- After installing all the dies, make sure they are straight and properly seated in the master dies.

Fig. 5



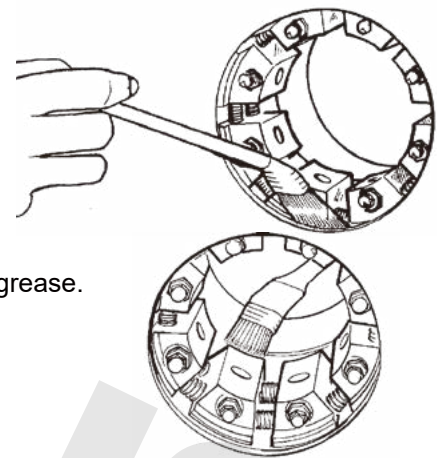
PREVENTIVE MAINTENANCE

- The following maintenance operations can be performed by the operator according to the instructions below. However, electrical works and repairs like changing seals or the pump must only be carried out by a qualified specialist
- **PRIOR TO ANY SERVICING OPERATION, TURN THE SUPPLY DISCONNECTING DEVICE TO POSITION '0'.**
- **BEFORE CHANGING THE MOTOR CIRCUIT BREAKER OR UNDER VOLTAGE TRIP, DISCONNECT THE PLUG OR SUPPLY CABLE FROM THE MAINS!**
- Open the dies to maximum retraction before servicing.

Greasing NX-20T & NX-32T

Lubricate the inner surface of the conical flanges daily with extreme pressure grease.

- Apply the grease to the conical surfaces at the front and back of the die with a small brush.
- Lubricate often with a small amount of grease rather than seldom with too much grease.
- Do not grease the piston rod.



Crimp Head Bolt Re-Torquing

Crimp head bolts must be re-torqued periodically to ensure safe and consistent operation.

- NX-32T: 145 Nm (107 ft-lb)
- NX-20T: 125 Nm (92 ft-lb)

Re-torquing frequency depends on machine usage. As a general guideline, perform this procedure monthly. At minimum, it should be completed quarterly.

IMPROPER DIE WARNING

Improper die set may have the effect similar to the picture shown. The die set protrudes outward, and the rear part of the master die is off the cone track (See Pg 11). You can observe this issue quite easy when crimping if this happen. Please check these pictures carefully, when you encounter the same issue, please stop crimping immediately. You need a proper die for your fitting.

This machine require a balanced crimping, if there is any issue similar to the pictures showing, then you need to stop crimping immediately and change a die set or contact us for a proper die set you require.

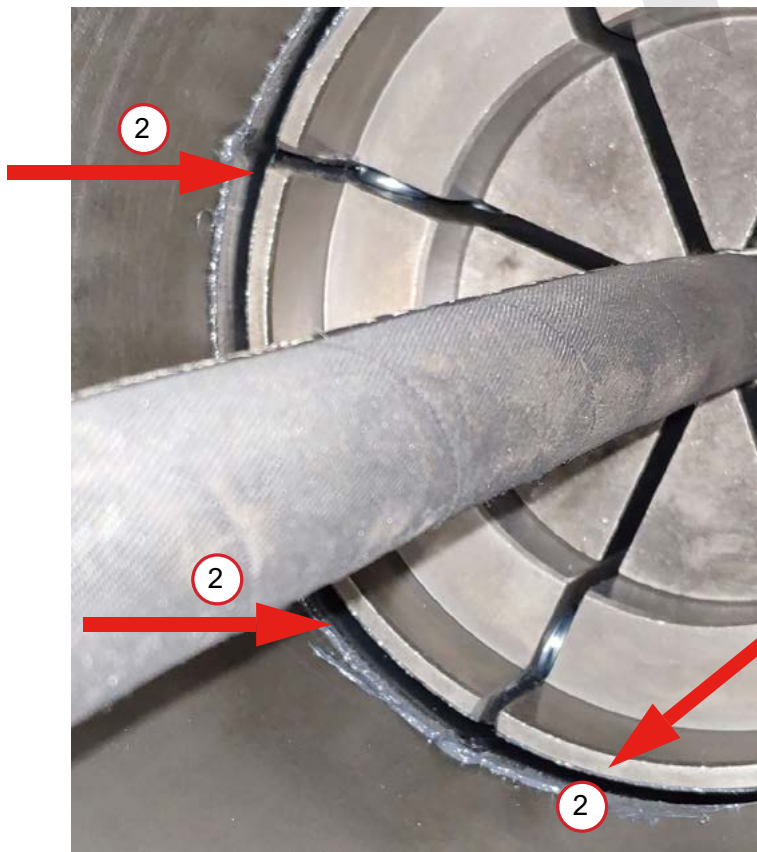
Possible Cause

1. The die diameter is not correct, you choose a smaller die (if the difference between the die diameter and coupler diameter usually shall be less than 10mm, if exceeding 10mm before crimping, you shall check the die sets and change the one closest.
2. The die set is too long compared to the length of the ferrule need to be crimped, this makes the crimping part too front to be able to crimp evenly or balanced, this will cause the problems shown in the picture, normally more often caused by one piece fitting, as one piece fitting is very short compared to the normal fittings. Our standard die set is designed to crimp the most fittings, thus it is usual longer. But when you encounter these issue, please stop crimping and request proper die sets from us.

Please stop crimping when you encounter these issue, if you proceed you will have serious consequences like but not limited to: break the jaw of the master die and also damage the front and back cone surface, which will eventually make the machine useless.

IMPROPER DIE ISSUE

Stop Crimping If You Encounter These Issues



① **Warning:** When manually inserting dies, the die set will protrude outward. Ensure the holes and numbers face forward.

② The rear part of the master die is off the cone track.

TROUBLESHOOTING

Troubleshooting is to be carried out by a serviceman.

TROUBLE	POSSIBLE CAUSE	ACTION
Machine will not start.	<ol style="list-style-type: none"> 1. No electric supply 2. Motor protection tripped 3. Switch broken 4. Low supply voltage 	Check fuses and supply cable connections. Reset. If tripped again, check motor and pump condition. Check the voltage up to the motor. Check the voltage.
Motor runs but no piston movement.	<ol style="list-style-type: none"> 5. Wrong rotation direction 6. Low oil level 7. Fuses/rectifier/transformer out of order 8. Valve out of order 9. Pump or coupling broken 	Interchange two phases in the supply disconnecting device. Check, refill. Check movability of valve steam. Check the solenoids. Check, replace.
Insufficient crimping force.	<ol style="list-style-type: none"> 1. Insufficient lubrication 2. Low oil level 3. Pressure relief valve stuck, pilot check valve leaking 4. Leaking pump/pressure pipe 5. Coupling between motor and pump slipping 	Lubricate the dies. Check, refill. Check, clean. Replace if broken. Check, tighten, replace. Check, replace.
Crimping diameter varies.	<ol style="list-style-type: none"> 1. Insufficient lubrication 2. Set value changed 3. Sliding potentiometer 4. Valve sticking 	Lubricate the dies. Check. Check, calibrate, tighten Check, tighten, replace

GUARANTEE

The machines produced by NEXUS are guaranteed for 12 months against defects in material and manufacture. Within the limits of the guarantee, the defective part will be replaced with a new one, or when possible, repaired free of charge.

The guarantee does not compensate for damage due to improper use, overload, neglect, or normal wear. Working and traveling costs as well as freight charges caused by guarantee repairs are not covered by the guarantee.

Guarantee repairs shall be carried out at NEXUS or by an authorized NEXUS technician service. In case guarantee repair is demanded, the customer has to prove that the machine is under guarantee.

NEXUS DOES NOT WARRANT FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR FOR ANY OTHER LOSS, DAMAGE OR EXPENSE OF ANY KIND, INCLUDING LOSS OF PROFITS.

NX-20T DETAILS



Benefit:

- Touch Screen Digital Control
- Restore 25 Sets Crimping Data
- Quick Change Tool and Die rack
- Up to 20 Die storage
- Crimp Counter included
- Energy Saving and Safety Operation
- TUV CE Approved

Available Voltage:

220V 50/60hz single phase :00001312
 Other voltage available on request.

Main Specification NX-20T
Max Hydraulic Hose 1-1/4" 4SP
Crimping Range 6-60 mm
Die Type NX20
Master Die Length 80 mm
Max Opening +32 mm
Motor 4 KW
Crimping Force 2200 KN
Crimpings Per Hour 1200
Control Touch Screen

Foot Pedal Included
Die Rack Included
Quick Change Tool Included
Backstop Device Optional
Control By Pressure Optional
Noise Level 65 dBA
Protection Class IP56
L*W*H 680*600*1400 mm
Weight 270 KG
Available die set storage 20

Standard Die Sets Included:

Die No.	14	16	19	22	26	30	34	39	45
Length	60	60	60	75	75	75	80	80	90

*Special Die sets or dedicated die sets available upon request.

Optional Die Sets:

Die No.	6	8	10	12	51	57
Length	45	45	55	55	90	100

NX-32T DETAILS



Benefit:

- Touch Screen Digital Control
- Restore 25 Sets Crimping Data
- Quick Change Tool and Die rack
- Up to 20 Die storage
- Crimp Counter included
- Energy Saving and Safety Operation
- TUV CE Approved

Available Voltage:

220V 50/60hz single phase :00001312
 Other voltage available on request.

Main Specification NX-32T
Max Hydraulic Hose 2" 4SP
Crimping Range 6-87 mm
Die Type NX32
Master Die Length 80 mm
Max Opening +32 mm
Motor 4 KW
Crimping Force 2200 KN
Crimpings Per Hour 1200
Control Touch Screen

Foot Pedal Included
Die Rack Included
Quick Change Tool Included
Backstop Device Optional
Control By Pressure Optional
Noise Level 65 dBA
Protection Class IP56
L*W*H 680*630*1400 mm
Weight 270 KG
Available die set storage 20

Standard Die Sets Included:

Die No.	14	16	19	22	26	30	34	39	45	51	57	63	69
Length	60	60	60	75	75	75	80	80	90	90	100	100	100

*Special Die sets or dedicated die sets available upon request.

Optional Die Sets:

Die No.	6	8	10	12	74	78
Length	45	45	55	55	110	110