



Contents [[hide](#)]

- [1 Danfoss ET500 Crimp Machine](#)
- [2 Safety instructions](#)
- [3 Specifications and accessories](#)
- [4 Setup and Assembly](#)
- [5 Operating instructions](#)
- [6 Maintenance](#)
- [7 Crimp machine components](#)
- [8 About Danfoss Power Solutions FC](#)
- [9 Documents / Resources](#)
 - [9.1 References](#)



Danfoss ET500 Crimp Machine



Safety instructions

ET500 Crimp machine

Read and understand the operator's manual before attempting to operate any equipment.

WARNING

Danfoss's hose and Danfoss hose fittings should only be assembled using Danfoss-approved assembly equipment. Do not use any combinations of Danfoss's hose, Danfoss hose fittings, or Danfoss assembly equipment with hose, hose fittings, or assembly equipment supplied by another manufacturer.

Danfoss hereby disclaims any obligation or liability (including incidental and consequential damages) arising from breach of contract, warranty, or tort (under negligence or strict liability theories) should Danfoss hose, Danfoss hose fittings, or Danfoss assembly equipment be used with any hose, hose fittings, or assembly equipment supplied by another manufacturer, or in the event that product instructions for

each specified hose assembly are not followed. (Reference SAE J1273 – Recommended practice for hydraulic hose assemblies).

WARNING

Failure to follow Danfoss processes and product instructions and limitations could lead to premature hose assembly failures, resulting in property damage, serious injury, or death.

Danfoss fitting tolerances are engineered to match Danfoss's hose tolerances. The combination or use of Danfoss's hose and hose fittings supplied by another manufacturer may result in the production of unreliable and/ or unsafe hose assemblies and is neither recommended nor authorized by Danfoss.

Safety Instructions

1. **PREVENT UNAUTHORIZED OPERATION.** Do not permit anyone to operate this equipment unless they have read and thoroughly understand this manual.
2. **WEAR SAFETY GLASSES.**
3. **AVOID PINCH POINTS.** Do not rest your hand on the crimp ring. Keep your hands clear of all moving parts. Do not allow anyone, other than the operator, close to the equipment while it is in operation.
4. **MAINTAIN DIES WITH CARE.** Dies used in the ET500 crimp machine are sintered powder metal, offering the best combination of strength and wear resistance for long life. Sintered powdered metal dies are generally brittle, and care should be taken to avoid any sharp impact. Never strike a die with a hardened instrument.
5. **USE only the SPECIFIED Danfoss PRODUCTS.** Make hose assemblies using only Danfoss hose and fittings specified for this assembly equipment.
6. **VERIFY CORRECT CRIMP DIAMETERS.** Check and verify the correct crimp diameters of all fittings after crimping. Do not put any hose assemblies into service if the crimp diameters do not meet Danfoss crimp specifications.
7. **Make sure all dies are completely in place,** the spacer ring rests against the placement pins, and the pusher is pulled forward into the detent position before crimping.
8. **DO NOT OVERPRESSURIZE.** Do not exceed the 10,000 psi hydraulic pressure supplied to the machine. **NOTE:** All components used to connect the pump and crimp

cylinder must meet the criteria set forth in the Material Handling Institute Specification #IJ100 for hydraulic jacking applications.

9. DIE CHANGE. DO NOT INSERT/REMOVE DIES WHILE THE POWER IS ON OR THE MACHINE IS IN OPERATION.
10. SECURE THE EQUIPMENT TO A STABLE WORK SURFACE. Prior to operation, secure the crimp machine to a stable work surface to prevent the equipment from tipping.
11. UNPLUG THE POWER SUPPLY WHEN NOT IN USE.
12. KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents
13. DO NOT PRESSURIZE WITHOUT A SPACER RING IN THE MACHINE. Doing so may cause damage to the crimper.

Specifications and accessories

ET500 Crimp machine and accessories

NOTE:

Your new crimp machine has been calibrated and filled with hydraulic oil in the factory. Do not remove any plugs or caps until necessary. Excess air in the hydraulic system may cause erratic cylinder movement during retraction. Refer to the Setup and Assembly section for instructions on removing air from the hydraulic system.

Specifications

Crimper Dimensions:

13" tall x 7" width x 6" deep

Weight: 29 lbs.

Pump Requirements:

- Reservoir Capacity: 36 cu in (590 cc)
- Pressure Rating: 10,000 psi (690 bar)
- The air/hydraulic pump requires a minimum of 100psi to operate at maximum efficiency.

Hose Production Capacity: Crimps up to -12 in braided hydraulic hose and -10 in spiral hydraulic hose.

Accessories

- Bench mount bracket (Part # ET500C-0011)
- Truck/wall mount bracket (Part # ET500C-0018)
- 1.5 oz. tube high efficiency PTFE grease (Part # T-400-G)
- 16 oz. can high efficiency PTFE grease (Part # FF91455)

Available pump options*:

- Hand pump kit (Part #ET1000PK-001)
- Air/hydraulic pump kit (Part #ET1000PK-002)
- 110v electric pump kit Part #ET1000PK-003)
- 12v DC electric pump kit (Part #ET1000PK-004)
- 54 volt battery pump (Part #ET1000PK-005)

Note: *Pump kits contain hose assembly and fittings to attach pump to machine.



Hand pump



Air/hydraulic pump



110v electric pump



12v DC electric pump



54 volt battery pump

Setup and Assembly

1. Your new ET500 crimp machine comes disassembled for ease of shipment. Before use, the machine must be assembled with the supplied shoulder bolts and knob. Slide the shoulder bolts through the handle and stand, and thread into the holes on the left and right sides of the crimper. Slide the knob through the slot on the lefthand side of the stand, and thread into the hole in the bottom left side of the crimper.
2. Remove the plug from the top cylinder port and install the -06 size ORB, 90-degree adapter using 23-24 ft. lbs. assembly torque. Orient the adapter so that it points to the rear of the crimp machine, away from the operator.

3. Install the pump connecting hose assembly to the cylinder adapter with the –06 size 37-degree swivel nut fittings using 18-20 ft. lbs. assembly torque.
4. Do not exceed an 8” minimum bend radius of the pump connecting hose when attaching the hose to the pump and cylinder.
5. If using your own pump, make sure it has the requirements listed in the Specifications section above.
6. Place the pump on the work surface to the side of the crimp machine. Install the 90-degree adapter to the pump pressure port (Male NPTF threads should be tightened following the hex-marking procedure of 2 to 3 turns past hand-tight).
7. Remove excess air from the hydraulic system. This can be accomplished by placing the pump at a higher level than the cylinder and cycling the machine approximately five times.
8. Secure the machine frame to a stable work surface using lag screws or other suitable fasteners.

Operating instructions

ET500

Description of components



ET500



Split Collet Assembly



Spacer Rings

Crimping procedures

Step 1:

Slide the pusher to the back position. Using the Power-Source crimp spec tool, select the proper collet assembly and spacer ring. Lubricate the inside cone of the die ring and external surfaces of the collet assembly using the high efficiency PTFE grease provided,

part number T-400-G.



Step 2:

Insert the hose assembly through the bottom of the base die ring and between the two collet assembly halves. Align the fitting with the top of the collet halves.

Note: Never run the crimp machine without tooling.



Step 3:

Place the spacer ring in the appropriate position on top of the collet assembly (either flat-side up or flat-side down as referenced in the PowerSource crimp spec tool).

If the spacer ring has a clearance notch, ensure that the notch is aligned with the opening in the front of the pusher.



Step 4:

Pull the pusher forward into the detent holding position with the pusher positioning handle



Step 5:

Begin crimping by actuating the pump. When the spacer ring bottoms out against the base die ring, the crimping is complete.

Note: Never run the crimp machine with the pusher in the rear position.

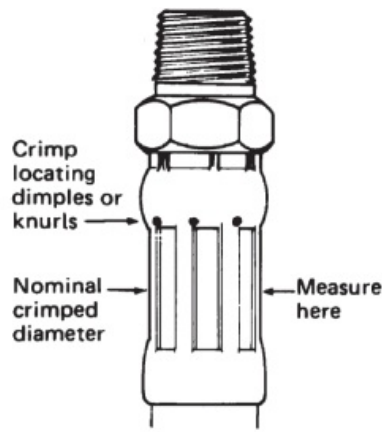
Nominal crimp diameter

Measuring crimp diameters should be a part of the normal hose assembly procedure. To ensure a proper crimp diameter, follow these steps:

1. Measure the diameter in the middle of the crimped portion of the hose end. Place the caliper in a position to allow for a measurement across the pressed (flat) portion of the crimp.
2. Repeat step 1 for each of the remaining sides for a total of four measurements.



3. Average the four measurements and compare this average to the target crimp diameter shown in the Power Source crimp spec tool and ensure it falls within tolerance.



Maintenance

Maintenance Intervals

Collet Assembly & Die Ring Lubrication:

Every 30 crimps = Re-lubricate the sliding surfaces of the dies

Every 250 crimps = Remove old grease and re-lubricate

Die Ring Maintenance:

Every 250 crimps = Remove old grease and re-lubricate

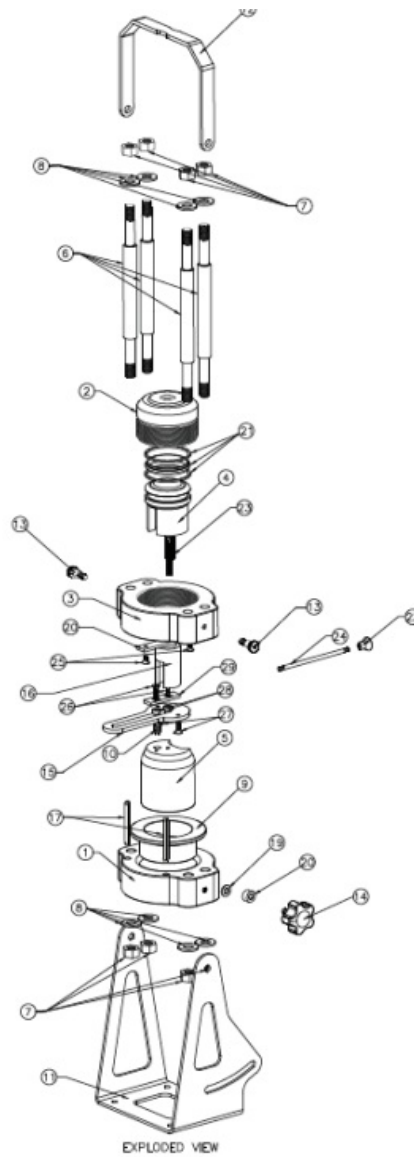
Every 1,000 crimps = Remove old grease, inspect for wear or damage, and relubricate if okay.

Machine maintenance procedures

1. Sliding surfaces must be kept free of dirt and other abrasive materials.
2. All exposed black metal surfaces should be coated occasionally with a light film of oil to prevent corrosion.
3. Some fitting/hose combinations require full pump reservoir capacity to complete the crimp cycle. The oil level in the fluid reservoir of the hydraulic pump should be checked periodically and refilled as required with the pump manufacturer's hydraulic oil as needed.

NOTE: Completely retract the cylinder when checking the oil level.

Crimp machine components



Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1	ET500C-0001	Bottom Ring	1	16	ET500C-0016	Piston Bushing	1
2	ET500C-0002	Cylinder	1	17	ET500C-0017	Roll Pin	2
3	ET500C-0003	Top Plate	1	18	ET500C-0019	Plastic Washer	1
4	ET500C-0004	Piston	1	19	ET500C-0020	Knob Bushing	1

5	ET500C-0005	Pusher	1		20 140-0 5687	Spring Retainer	1
6	ET500C-0006	Tie Rod	1		21 140-0 5691	Piston Seal Kit	1
7	ET500C-0007	Tie Rod Nut	8		22 140-0 5694	Slide Pull Knob	1
8	ET500C-0008	Tie Rod Washer	8		23 140-0 6603	Return Spring Assembly	2
9	ET500C-0009	Crimp Ring	1		24 140-0 5695	Slide Pull Rod	1
10	ET500C-0010	Slide Plate Ball Detent	2		25 140-1 5984	Assembly Screw	2
11	ET500C-0011	Bench Mount Bracket	1		26 140-1 5984-01	Flat Head Screw	2
12	ET500C-0012	Handle	1		27 140-1 5984-03	Flat Head Screw	2
13	ET500C-0013	Pivot Bolt	2		28 140-0 6925	Slide Plate Bushings	2
14	ET500C-0014	Angle Adjust Knob	2		29 140-0 6924	Slide Flange	1
15	ET500C-0015	Side Plate	2		30 T-400-G	Grease	1

About Danfoss Power Solutions FC

Danfoss hoses, fittings, and tooling provide the ultimate fluid conveyance solutions for a variety of equipment and applications around the world. We proudly engineer to support a sustainable future for tomorrow.

To learn more, please visit: <http://www.danfoss.com/en/about-danfoss/our-businesses/power-solutions>

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Documents / Resources

	<p>Danfoss ET500 Crimp Machine [pdf] Instruction Manual</p> <p>BC520770098054en-000101, ET500 Crimp Machine, ET500, Crimp Machine, Machine</p>
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References

- [User Manual](#)

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