

Operator's Manual

Danfoss FT1244

Crimp Machine

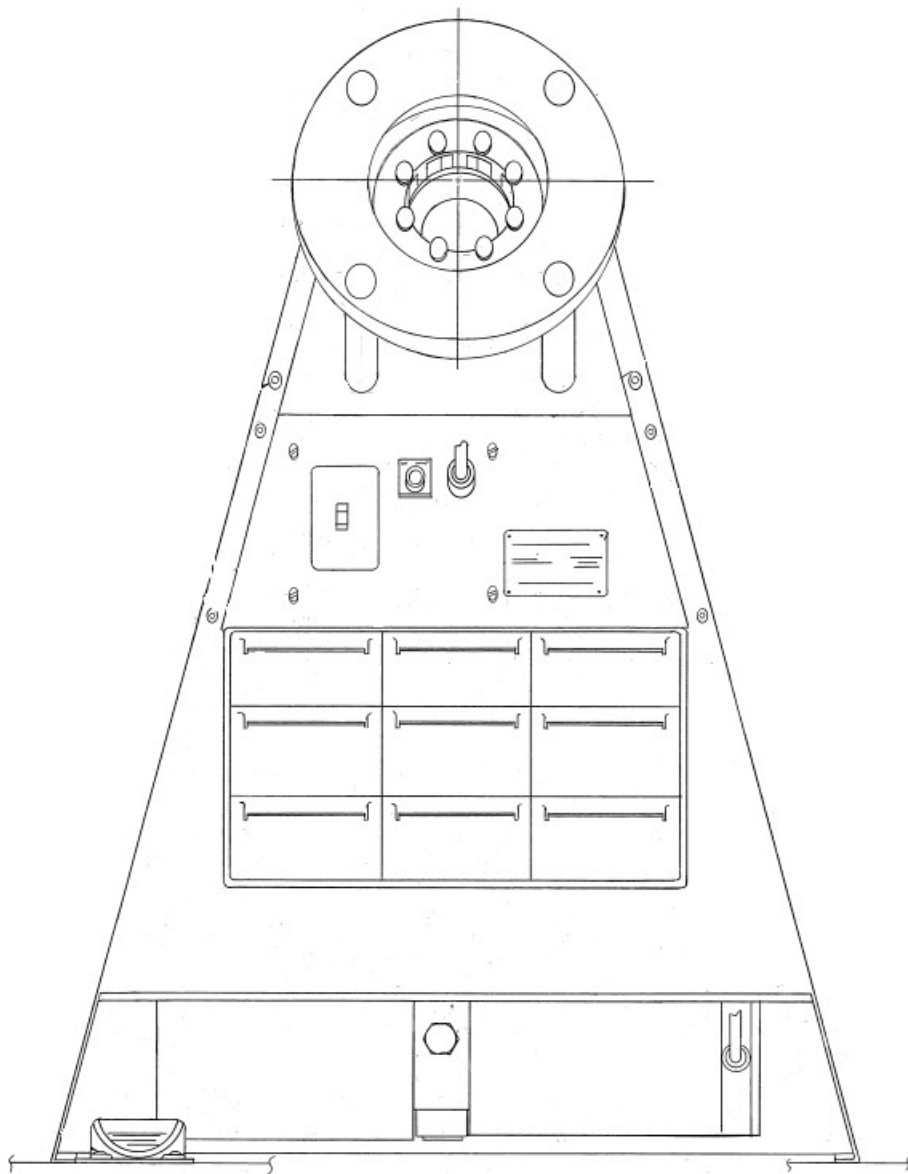


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Obsolete Data Notice

The calibration method for some early model crimp machines used fittings that are no longer supplied by Danfoss Corporation.

Therefore, some of the data on the following pages may be considered obsolete, such as machine settings (i.e. 1401 socket data).

Calibration can still be performed using current (global) fittings. Please contact Danfoss for specific information.

Introduction

The Danfoss FT1244 Crimp Machine is designed for the distributor or O.E.M. who needs production style crimping capacity. The FT1244 is a hydraulically operated machine that will crimp Danfoss standard crimp fittings; -3 through -32*, including four spiral hose. The FT1244 will crimp both straight and standard elbow fitting assemblies.

A compact hydraulic unit supplies pressure to a cylinder which provides the required crimping forces through the mechanical advantage of a crimp ring and dies.

*Special fittings are required for -32 sizes. Refer to section "Procedure For Crimping -32 Hose Assemblies."

Safety Instructions

- 1. KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
- 2. AVOID DANGEROUS ENVIRONMENT.** Keep the work area well lit. Do not operate equipment when floors are slippery. Always ensure you have sound footing with both feet on the floor. Do not operate controls if hands or controls are wet.
- 3. PREVENT UNAUTHORIZED OPERATION.** Do not permit anyone to operate this machine unless they have read and thoroughly understand this manual. Unplug the machine when not in use.
- 4. USE THE RIGHT DIE CAGE.** Do not force the dies to do a job they were not designed for. Never mix dies of different sets. Dies are assembled in a cage.
- 5. WEAR PROPER APPAREL.** Do not wear loose clothing or jewelry that could get caught in moving parts. Rubber-soled footwear is recommended for best footing.
- 6. DO NOT OVERREACH.** Keep proper footing and balance at all times.
- 7. MAINTAIN DIES WITH CARE.** Dies used in the FT1244 crimp machine are hardened tool steel affording the best combination of strength and wear resistance for long life. Hardened dies are generally brittle and care should be taken to avoid any sharp impact. Never strike a die with a hardened instrument..

Specifications

Dimensions	31 1/2" wide x 30" long x 42" high
Weight	425 lbs. without tooling
Electrical	115 volt, 1 phase, 60 Hz
Crimp Dies	Eight per set
Max. Operating Pressure	4000 psi
Pump	2 3/4 gpm to 1000 psi 3/4 gpm to 4000 psi

Preoperation Procedures

CAUTION: THIS MACHINE IS TOP HEAVY!

Uncrate the FT1244 crimp machine and inspect the machine for possible shipping damage. The following components are in the tool box.

- 1 can of high efficiency PTFE grease (Danfoss part number FF91455)
- 1 Cone Locator Assembly
- 1 Hydraulic Unit Breather Cap

This machine is shipped completely plumbed and wired. The hydraulic unit reservoir has been filled with hydraulic oil.

Remove the pipe plug from the top of the reservoir and install the breather cap. Install the cone locator in the holder.

Installation

Install the machine on a solid floor capable of holding 425 pounds. Secure the machine to the floor with four 5/16" diameter fasteners through the slots provided in the base. Position the motor switch (located on the front panel) in the stop position and plug in the cord.

The FT1244 crimp machine is wired for 115V, 60 Hz service and requires a 30 amp circuit breaker or fuse.

Tooling

A tooling set up consists of eight crimp dies and a fitting locator. The locator is used to locate the fitting in the machine. A cone shaped locator is used when crimping straight fittings and a series of optional yoke locators is available for locating elbow fittings.

Do not attempt to operate the machine with less than eight (8) dies or intermix dies of different sets.

A die storage area is provided within the machine. Dies should be put away after use to avoid abrasive dust and dirt from sticking to the friction surfaces and causing premature wear on dies or other machine components.

Operating Instructions

HOSE PREPARATION

Select the proper hose and fitting style for the desired application. Some hose styles require the removal of a length of hose cover prior to crimping. This is referred to as "Skiving."

PROPER CRIMP DIE INSTALLATION

Remove the clear plastic guard.

Select the crimp dies specified in the PowerSource Crimp Spec Tool at danfoss.com/crimp for the selected hose style and size.

Liberally lubricate all sliding surfaces of the crimp dies with high efficiency PTFE grease (Danfoss part number T-400-G). Do not lubricate the crimping surface of the dies. Also lubricate the crimp ring where the crimp dies slide.

Install the crimp dies by pulling the die release pins (Det. 18) and inserting the dies into the die slots from the outside as shown in illustration 1. Make certain the angled surface on the dies is positioned as illustrated. Inserting crimp dies in any other position may result in damage to the machine. Remove crimp dies in the opposite manner.

SETTING THE LOCATOR

STRAIGHT FITTINGS

The purpose of the locator is to properly position the fitting within the crimp dies area and to provide a positive back stop so no visual alignment is required after initial set up. The cone shaped locator is used for locating all sizes of straight fittings.

Refer to illustration 1 for proper fitting location using the cone locator. Position the fitting and socket as shown (the 1/32" will move flush with the end of the crimp die during the crimp cycle). Slide Det. 3 until Det. 1 seats into the fitting. Run nut (Det. 4) against Det. 3. It may be necessary to adjust Det. 1 into Det. 3 for more clearance. Lock with Det. 2.

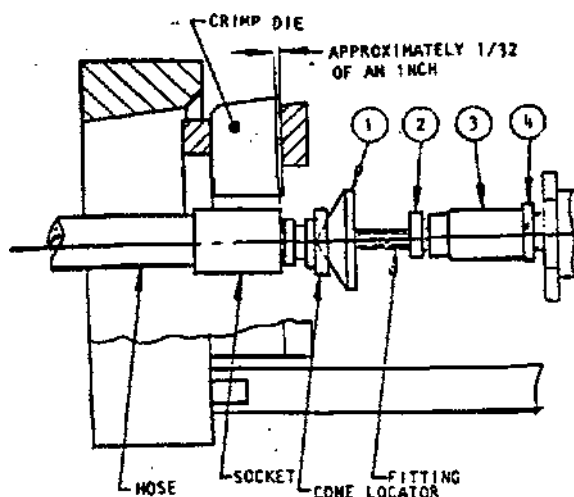


Illustration 1

ELBOW FITTINGS

(Optional tooling not supplied with the machine)

Elbow fittings may be crimped without a locator, but for quantity production, an elbow fitting locator kit (FT1204-150) is available. This kit will accommodate elbow fittings through -20 size. (Visual alignment is necessary when crimping -24 and -32 sizes.)

The FT1204-150 kit consists of a yoke holder and yokes for tube sizes -4 through -16 (no yoke is required when crimping -20 size fittings). A spacer is also included to provide the additional clearance required on some elbows.

Remove the cone locator and attach the yoke holder by tightening the set screw on the shoulder of Det. 3 (See illustration 2). Position the fitting within the crimp dies as illustrated. Set up the assembly with the spacer inserted as shown. Slide Det. 3 forward as was instructed for the cone locator and run nut (Det. 4) against the spacer. Crimp the fitting, pull out the spacer, push Det. 3 back against Det. 4 and remove elbow..

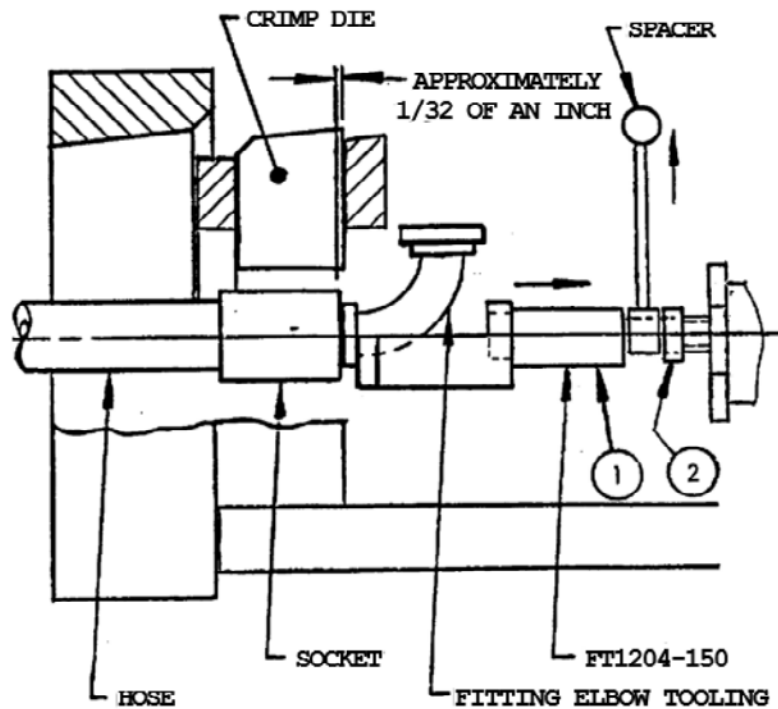


Illustration 2

SETTING THE MICROMETER FOR THE PROPER CRIMP DIAMETER

The micrometer is mounted to a tie rod of the crimp machine. With the correct micrometer setting, the machine will produce the desired crimp diameter.

The crimp diameter specifications are listed in the PowerSource Crimp Spec Tool at danfoss.com/crimp for crimp spec details.

The exact micrometer settings may vary from one machine to another due to manufacturing tolerances. Furnished in the back of this manual is a sheet of approximate micrometer settings for the first crimp. A calculation and a micrometer adjustment should establish correct crimp diameter.

Example: Aeroquip 2681-12 hose requires a crimp diameter of 1.90-1.96. The recommended micrometer setting for set up is .739. The micrometer was set to .739 and a sample fitting crimped. The crimp diameter obtained was 1.216. The nominal crimp diameter desired is 1.193. Subtracting 1.193 from 1.216, we conclude that our socket is crimped .023 oversize. Each .001 change in crimp diameter requires a .004 change in micrometer setting. Therefore, $.023 \times 4 = .092$ change in micrometer setting. Add .092 to .739 to obtain a new setting of .831.

Crimp the same fitting again using the newly calculated micrometer setting. A crimp diameter between 1.190 and 1.196 should be obtained. If further adjustment is necessary, the same procedure should be followed until the proper crimp diameter is obtained.

NOTE: Large size crimps will probably require more adjustment than smaller sizes.

When the correct micrometer setting is found, record it. The next time that style and size of hose is crimped, dial your recorded micrometer setting and the first crimp should be good.

PROCEDURE FOR CRIMPING -32 HOSE ASSEMBLIES

Crimping -32 fittings requires special procedure to properly attach the fitting. The fitting used for this application is of one piece construction (the socket is precrimped to the nipple to establish the required crimp length). Refer to the PowerSource Crimp Spec Tool at danfoss.com/crimp for crimp spec details which outlines the required crimping information. Scribe a mark on the socket at the nipple end at the desired dimension as indicated in the PowerSource Crimp Spec Tool at danfoss.com/crimp for crimp spec details. Locate the fitting within the crimp die area (See illustration 3). Crimp the fitting as previously described.

HOSE	
1509-32	.41
1529-32	.41
1546-32	.41
2661-32	.40
2665-32	.41
2681-32	.41
2766-32	.41
2777-32	.41
2781-32	.41
2791-32	.35
FC194-32	.41
FC241-32	.41
FC299-32	.41

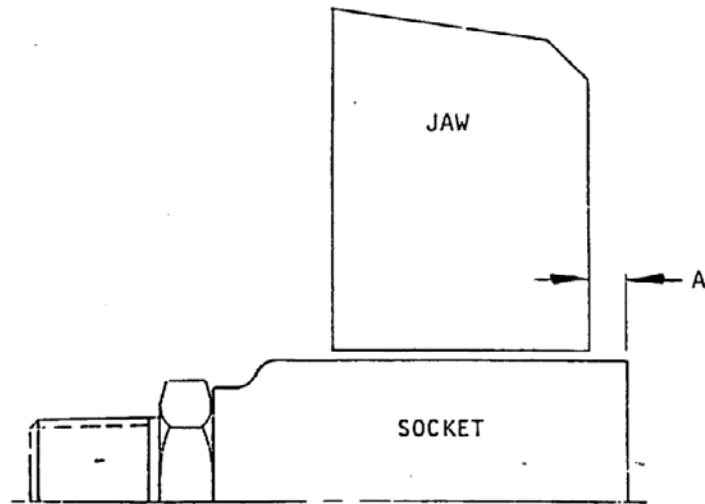


Illustration 3

OBSOLETE

CRIMPING FIELD CRIMP STYLE HOSE ASSEMBLIES

Crimping field crimp style fittings requires special locating procedure. The fittings are located using the scribe lines on the socket of the fitting (See illustration 4).

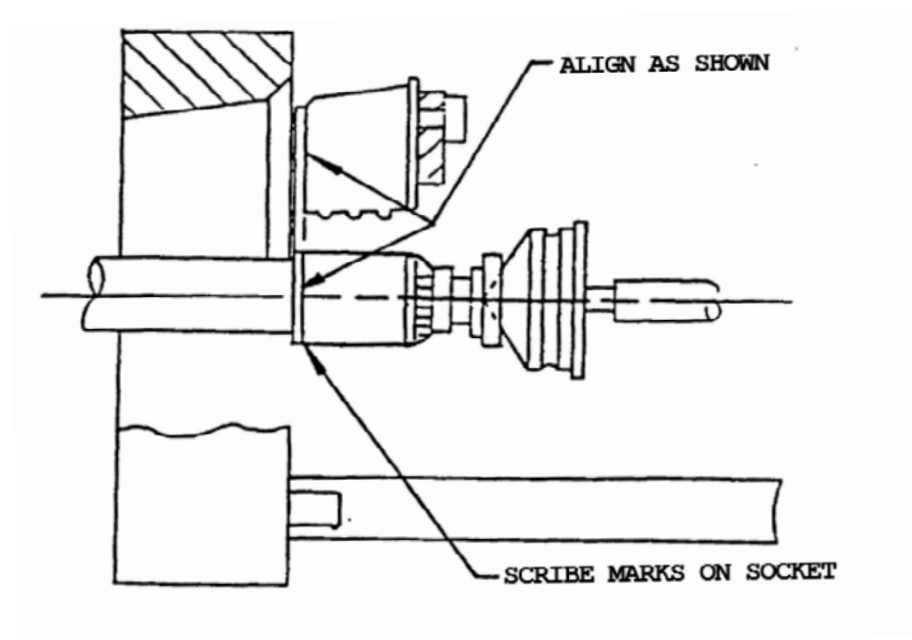
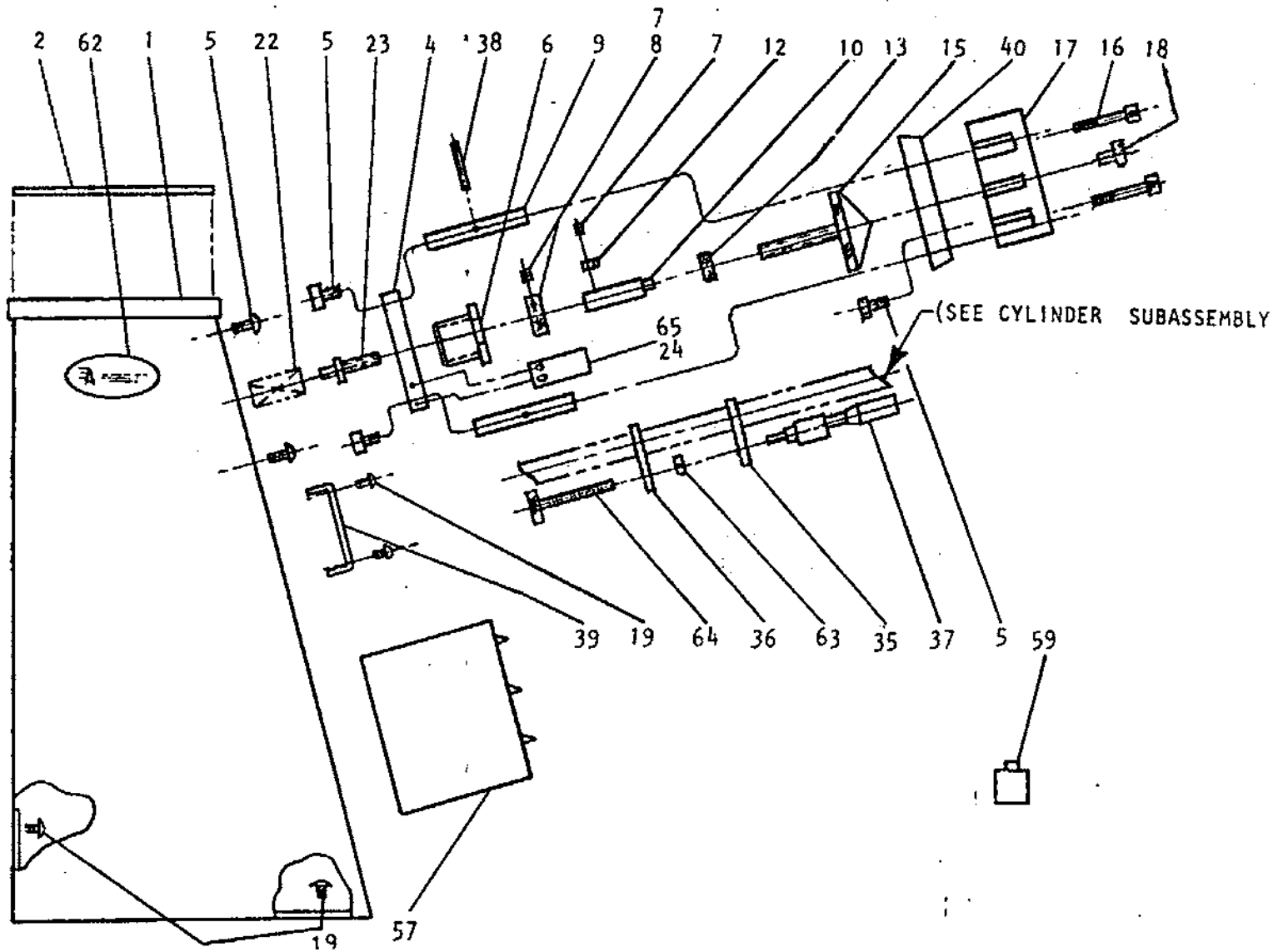


Illustration 4

Maintenance

Normal maintenance of the FT1244 crimp machine requires a light film of oil coating over all the exposed black surfaces, crimp ring die, contact surface lubricated with high efficiency PTFE grease (Danfoss part number T-400-G), and a maintained oil level within the hydraulic power unit oil reservoir (one inch below the top of the reservoir).

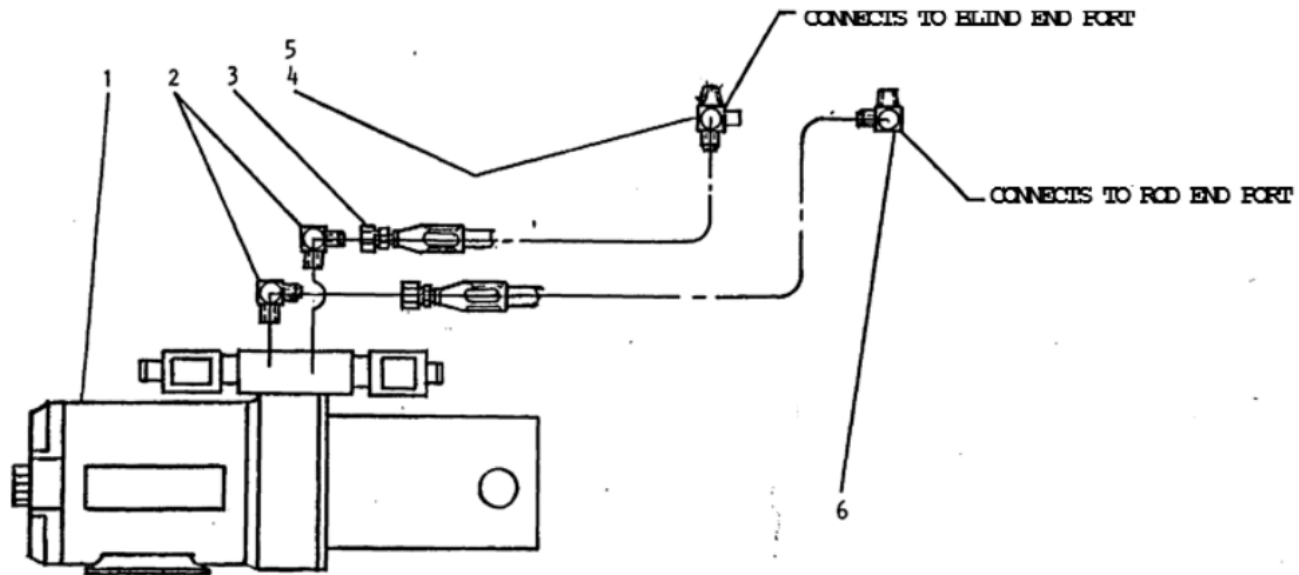
Machine Breakdown



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DETAIL NUMBER	PART NUMBER	DESCRIPTION	NUMBER REQUIRED
1	FT1244-3-1	Base	1
2	FT1244-3-2	Pad	1
4	FT1244-3-4	Push Plate	1
5	222003-6-20S	3/8-16 x 1.25 Soc Hd Cap Screw	8
6	FT1244-3-6	Adapter	1
7	FT1204-3-76	Spring Plunger	2
8	FT1204-3-34	Lock Ring	1
9	FT1244-3-9	Push Bar	4
10	FT1244-3-10	Lock Collar	1
12	FT9242-04	1/4-20 Hex Nut	1
13	FT1204-3-75	Knob	1
15	FT1204-3-30	Adjustment Screw	1
16	222003-4-64S	3/8-16 x 4.00 Soc Hd Cap Screw	4
17	FT1204-3-98	Jaw Cage	1
18	FT1 204-3-35	Release Pin	8
19	FF9339-0508S	5/16-18 x .50 Button Hd Screw	10
22	FT1204-3-27	Spring	1
23	FT1244-3-23	Holder	1
24	FT1244-3-24	Bracket	1
35	FT1244-2-3	Micrometer Holder	1
36	Fri 244-2-4	Return Stop	1
37	Fn 204-3-49	Micrometer Head	1
38	FF9240-0844S	Roll Pin	2
39	FT1244-3-39	Cover	1
40	FT1204-3-99	Pressure Plate	1
57	FT1253	Tool Box	1
59	T-400-G	PTFE grease	1
62	FT1244-3-62	Decal	2
63	FF9236-045	1/4-20 Thin Self-Locking Nut	1
64	FT1244-3-61	Adjustment Screw	1
65	FF9228-0408S	1/4-20 x .50 Soc Hd Cap Screw with Nylon insert	2
69	FT1244-3-69	Guard (not shown)	1
70	FT1244-3-70	Guard Decal (not shown)	1

Hydraulic Components

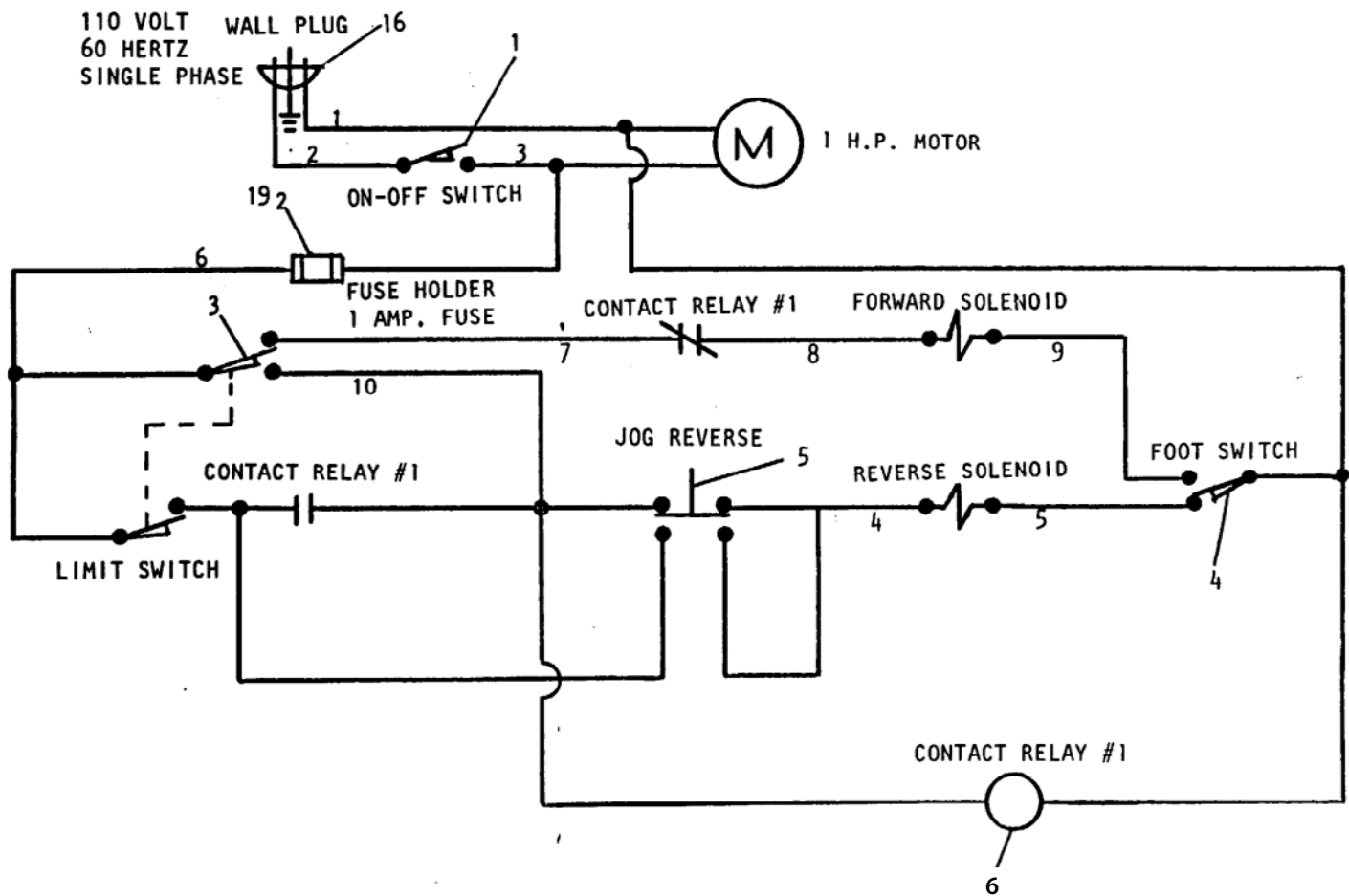


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DETAIL NUMBER	PART NUMBER	DESCRIPTION	NUMBER REQUIRED
1	FT1244-2-6	Power Unit	1
2	2062-6-6S	Danfoss Adapter	2
3	FL1348GGG0240	Danfoss Hose Assembly	2
4	203103-6-6S	Danfoss Adapter	1
5	2081-6S	Danfoss Adapter	1
6	2024-4-6S	Danfoss Adapter	1

Electrical Schematic



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DETAIL NUMBER	PART NUMBER	DESCRIPTION	NUMBER REQUIRED
1	FT1244-2-5-1	On - Off Switch	1
2	FT1244-2-5-2	Fuse Holder	1
3	FT1244-2-5-3	Limit Switch	1
4	FT1244-2-5-4	Foot Switch	1
5	FT1244-2-5-5	Jog Reverse Switch	1
6	FT1244-2-5-6	Control Relay	1
7	FT1244-2-5-7	Terminal Strip	1
8	FT1244-2-5-8	"Jog Reverse" Label	1
9	FT1244-2-5-9	Limit Switch Electrical Cord Connector	1
10	FT1244-2-5-10	Limit Switch Lever Arm	1
11	FT1244-2-5-11	Foot Switch Electric Cord	1
12	F11244-2-5-12	Solenoid Electric Cords	2
13	FT1244-2-5-13	Motor Electric Cords	1
14	FT1244-2-5-14	Power Supply Electric Cord	1
15	FT1244-2-5-15	Limit Switch Electric Cord	1
16	FT1244-2-5-16	Wall Plug	1
18	FT1244-2-5-18	Electric Cord Connectors	7
19	FT1244-2-5-19	Fuse (1 Amp)	1

*Items 7 through 15 & 18 are not shown on electrical schematic.

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>

Danfoss Power Solutions

14615 Lone Oak Road
Eden Prairie, MN 55344, USA
Phone: 952-937-9800

Danfoss Power Solutions (US) Company

2800 East 13th Street
Ames, IA 50010, USA
Phone: +1 515-239-6000

Danfoss Power Solutions GmbH & Co.OHG

Krokamp 35
D-2439 Neumünster, Germany
Phone: +49 4321 871 0

Danfoss Power Solutions ApS

Nordborgvej 81
DK-6430 Nordborg, Denmark
Phone: +45 7488 2222

Danfoss Power Solutions Trade (Shanghai) Co. Ltd.

Building #22, No 1000 Jin Hai Rd
Jin Qiao, Pudong New District
Shanghai, China 201206
Phone: +86 21 3418 5200w

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