ENGINEERING
TOMORROW

Operators Manual

Danfoss FT1261
Hose Proof Tester

Safety Instructions

⚠ WARNING

Danfoss fitting tolerances are engineered to match Danfoss hose tolerances. The use of Danfoss fittings on hose supplied by other manufacturers and/or the use of Danfoss hose with fittings supplied by other manufacturers may result in the production of unreliable and unsafe hose assemblies and is neither recommended nor authorized by Danfoss:

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

The user must exercise extreme care when operating any Danfoss assembly equipment with powered moving components. Safety glasses must be worn at all times when using any Danfoss assembly equipment.

Read and understand the owners and operators manual before attempting to operate any equipment.

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, fittings or assembly equipment be used with the hose, fittings or assembly equipment supplied by another manufacturer or in the event that product instructions for each specified hose assembly are not followed.

⚠ CAUTION

All hoses must be dried after testing! Tested hose assemblies can be dried by blowing out with dry shop air. Any water remaining in the tested hose assembly following proof test operation may cause rust on the inside of fittings or may not be compatible with the system using the hose assembly.

Introduction

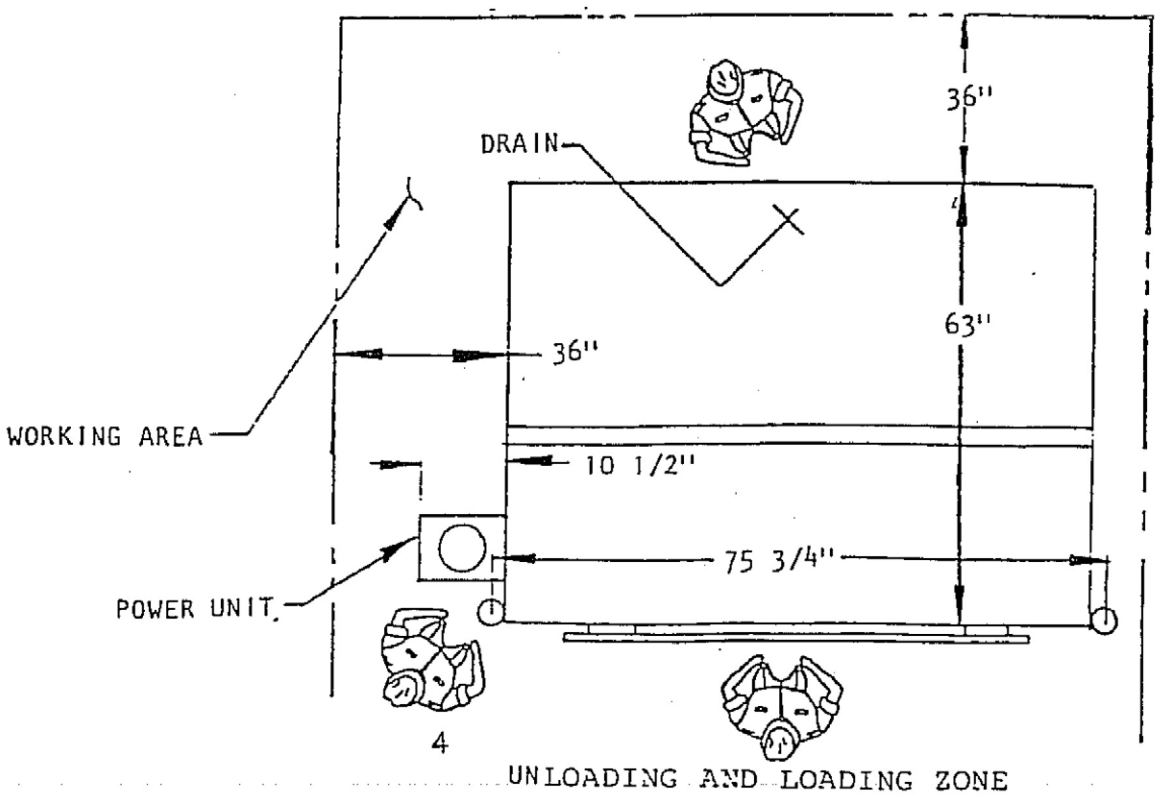
The Danfoss FT1261 proof tester is especially designed to provide a practical, self contained, easy to use machine to hydrostatically test Danfoss hose assemblies.
This machine will test assemblies up to 2 inch ID, 6 wire spiral in 50 foot coil lengths.
It is designed to utilize tap water to prefill the assembly in conjunction with an air driven hydraulic pump to produce the desired test pressures.

SPECIFICATIONS

Dimensions	7'2" wide x 57" deep x 4'6" high
Weight	800 lbs.
Test Fluid	Tap Water
Air Requirements	70-100 psi clean dry shop air
Tooling	Adapters

INSTALLATION

Install the machine on a solid floor capable of holding 1000 pounds.



General Information

POWER UNIT

The power unit on the FT1261 hose proof tester is a compact, economical, air driven hydraulic pump. The pump operates on the simple principle of pressure magnification through the use of differential areas in which a relatively large air-operated piston drives a smaller piston which provides fluid flow at high pressures.

An air regulator provides the means of adjusting hydrostatic test pressures.

CABINET

The cabinet construction of the FT1261 proof tester is designed to withstand a hose assembly failure.

As an additional feature, the cabinet is a self-contained reservoir capable of holding approximately 10 gallons of water. The cabinet may be drained into a bucket or floor drain by opening the shut-off valve at the back of the cabinet.

PREOPERATION PROCEDURES

Uncrate the FT1261 proof tester and verify that you have received the following components:

1 FT1261 Owner's Manual
1 FC254-08 Hose Assembly
1 2021-6-8S Adapter (-6 external pipe, -8 male JIG)
1 2022-12-8S Adapter (-12 internal pipe, -8 male JIC)

Remove the clear plastic air lubricator bowl (adjacent to the air pressure regulator on the pump assembly) and fill it three quarters full with SAE 30 nondetergent oil.

Connect a tap water supply line to the 1 /2" pipe port of the water shutoff valve. (FT1261-3-33) located on the water pumping unit.

Connect a compressed air supply line to the male air coupling attached to the air pressure regulator on the water pumping unit.

NOTE: For optimum performance, the air compressor should be capable of supplying 100 psi at a rate of 20 cubic feet per minute.

Tooling

The FC254-08 hose assembly supplied with the tester is used to connect the test hose assembly to the pressure port of the tester. The end connection on the FC254-08 hose assembly is a -8 size JIC swivel fitting. To connect the test assembly to the -8 JIG swivel fitting will require the use of standard adapters or special proof test tooling shown in the chart on the following pages. In addition to the standard Danfoss adapters listed, the 2021-6-8S or 2022-12-8S adapters supplied with the tester may be required to complete the connection.
Adapters listed below are special design, quick installation seal adapters or plates exclusive to the internal skive fitting assemblies.

*Proof Test Tooling	Fitting Dash Size/Style
FT1236-1-1	12 Code 61 Split Flange
FT1236-1-2	16 Code 61 Split Flange
FT1236-1-3	20 Code 61 Split Flange
FT1236-1-4	24 Code 61 Split Flange
FT1236-1-5	32 Code 61 Split Flange
FT1236-1-6	12 Code 62 Split Flange
FT1236-1-7	16 Code 62 Split Flange
FT1236-1-8	20 Code 62 Split Flange
FT1236-1-9	24 Code 62 Split Flange
FT1236-1-10	32 Code 62 Split Flange
FT1236-1-11	12 37° JIC Swivel
FT1236-1-12	16 37° JIC Swivel
FT1236-1-13	20 37° JIC Swivel
FT1236-1-14	24 37° JIC Swivel
FT1236-1-15	32 37° JIC Swivel
FT1236-1-16	12 Male NPTF
FT1236-1-17	16 Male NPTF
FT1236-1-18	20 Male NPTF
FT1236-1-19	24 Male NPTF
FT1236-1-20	32 Male NPTF
FT1236-1-21	12 JIC Male Flare
FT1236-1-22	16 JIC Male Flare
FT1236-1-23	20 JIC Male Flare
FT1236-1-24	24 JIC Male Flare
FT1236-1-25	32 JIC Male Flare

*Two adapters are required to test one hose assembly.
These adapter kits are complete with all adapters and split flange clamps, where applicable, to connect the hose assembly to be tested to the umbilical hose assembly of the tester.

Adapter Selection Chart

Adapters listed below are standard Danfoss adapters and may be used with Danfoss hose assemblies including internal skive where applicable.

Hose Fitting Style and Size	Fitting Adapter Part Number	Pressure Port Adapter Part Number	Plug or Cap Part Number
SAE 37° (JIC) Swivel			
- 4	2027-8-4S		900599-4
- 5	2021-6-5S	2022-6-8S	900599-5
- 6	2027-8-6S		900599-6
- 8	2027-8-8S		900599-8
- 10	2027-10-8S		900599-10
- 12	2027-12-8S		900599-12
- 16	2027-16-12S	2022-12-8S	900599-16
- 20	2021-16-20S	2040-12-15S & 2022-12-3S	900599-20
- 24	2021-16-24S	2040-12-15S & 2022-12-3S	900599-24
- 32	2021-16-32S	2040-12-15S & 2023-12-3S	900599-32
SAE 45° Swivel			
- 4	2000-5-4B	2022-5-8S	900599-4
- 5	2000-6-5B	2022-6-8S	900599-5
- 6	2000-6-6B	2022-6-8S	2001-8-6B & 2082-8S
- 8	2000-12-8B	2022-12-8S	900599-8
- 10	2000-12-10B	2022-12-8S	900599-10
- 12	2000-12-12B	2022-12-8S	2001-8-12B & 2082-8S
Male Pipe			
- 4	2081-8-2S	2022-8-8S	2046-2-2S & 2082-2S
- 5	2022-4-8S		2046-4-4S & 2082-4S
- 6	2022-6-8S		2046-6-6S & 2082-6S
- 8	2022-8-8S		204.6-8-8S & 2082-8S
- 12	2022-12-3S		2046-12-12S & 2082-12S
- 16	2040-12-16S	2022-12-8S	2046-16-16S & 2082-16S
- 20	2040-15-20S	2040-12-16S & 2022-12-8	2046-20-20S & 2082-20S
- 24	2040-20-24S	2040-12-16S & 2040-16-20S & 2040-12-8S	2046-24-24S & 2082-24S
- 32	2040-24-32S	2040-16-20S & 2040-20-24S & 2022-12-8S	2046-32-32S & 2082-32S

Adapters are available for other hose fittings styles. Contact Danfoss

ORS			
	Fitting Adapter	**Pressure Port**	**Plug or Cap**
- 4	FF2031T0408S	2022-8-8S	FF9767-04S
- 6	FF2031T0608S	2022-8-8S	FF9767-06S
- 8	FF2031T0808S	2022-8-8S	FF9767-08S
- 10	FF2031T1008S	2022-8-8S	FF9767-10S
- 12	FF2031T1208S	2022-8-8S	FF9767-12S
- 16	FF2031T1612S	2022-12-8S	FF9767-16S
- 20	FF2031T2016S	2040-12-16S & 2022-12-8S	FF9767-20S
- 24	FF2031T2424S	2040-20-40S, 2040-16-20S, 2040-12-16S & 2022-12-8S	FF9767-24S

Operating Instructions

PREFILLING

1. Close the air shut-off valve and cabinet drain valve. Adjust the air regulator to zero pressure by turning the valve handle on top of the regulator in a counterclockwise direction until no turning resistance is felt.
2. Open the cabinet of the tester and place the hose assembly to be tested on the floor of the tester. The umbilical hose assembly can be removed if necessary to provide unobstructed loading of hose assemblies on skids.
3. Connect the umbilical hose assembly to the hose assembly to be tested using the appropriate adapter combination or proof test tooling listed on pages 7-10 of this manual.
4. Reattach the coupling of the umbilical hose to the pumping unit if necessary.
5. Ensure that the high pressure dump valve is completely closed.
6. Open the water shut-off valve and fill the assembly allowing the tap water to force the air from the hose assembly through the non-capped end.
7. When the sample is completely filled, shut off the water and cap or plug the open end of the hose assembly.

PRESSURIZING

1. Close the cabinet and insert the "T" pin to connect both doors together. DO NOT ATTEMPT TO PRESURE TEST THE HOSE ASSEMBLY WITH THE CABINET DOORS OPEN OR WITH THE PIN NOT SECURE.
2. Reopen the water shut-off valve to supply ample water to the pumping unit during pressurization.
3. Open the air shut-off.
4. While monitoring the test pressure gauge, adjust the air regulator valve clockwise allowing the pumping action to begin. Steadily increase air pressure until the test pressure is approaching, then back off the air pressure until the pumping slows greatly. When the test pressure is reached, back off the air pressure just enough to stop the pumping action.
5. The test assembly should remain pressurized at the proof test pressure for one minute. During this time the assembly should be observed through the transparent Lexan lid. Pinhole leaks or seeping fittings may not be immediately apparent, so careful observation is important.
6. Once the test pressure has been obtained, tighten the locknut on the regulator. Subsequent assemblies can be pressurized to the test pressure by merely opening the air shut-off valve on the pump. The air regulator will only require readjusting when a new test pressure is required.

PRESSURIZING
(Test pressures under 2000 psi)

1. Close the cabinet and insert the "T" pin to connect both doors together. DO NOT ATTEMPT TO PRESSURE TEST THE HOSE ASSEMBLY WITH THE CABINET DOORS OPEN OR WITH THE PIN NOT SECURE.
2. Open the water shut-off valve to amply supply water to the pumping unit during pressurization.
3. With the air shut-off valve closed, adjust the air pressure regulator to provide an inlet pressure of 15-20 psi.
4. Carefully open the air shut-off valve very slightly while observing the test pressure gauge. The pressure will rise slowly. When the desired test pressure is indicated on the gauge, close the air shut-off valve. The pressure will remain constant in the test assembly for the duration of the test provided there are no leaks in the system.
5. Hold the test pressure for approximately one minute while observing the hose assembly through the transparent Lexan lid for pinhole leaks or seeping fittings.

TEST PRESSURE RELEASE

1. Close the air shut-off valve on the water pump.
2. Close the water shut-off valve located on the water pump.
3. Open the high-pressure dump valve to release the water pressure from within the hose assembly.

REMOVING THE ASSEMBLY

1. WAIT UNTIL ALL PRESSURE IS REMOVED FROM THE SAMPLE! This will be indicated by zero pressure indicated on the pressure gauge and no water draining from the pressure discharge port in the tester.
2. Open the cabinet and remove the umbilical hose and test tooling from the tested assembly.
3. Drain the remaining water from the tested assembly. It is recommended that all hose assemblies be blown dry with compressed air. Any moisture left in the assembly may cause fitting corrosion or may be incompatible with the fluid system on which the hose assembly will be used.

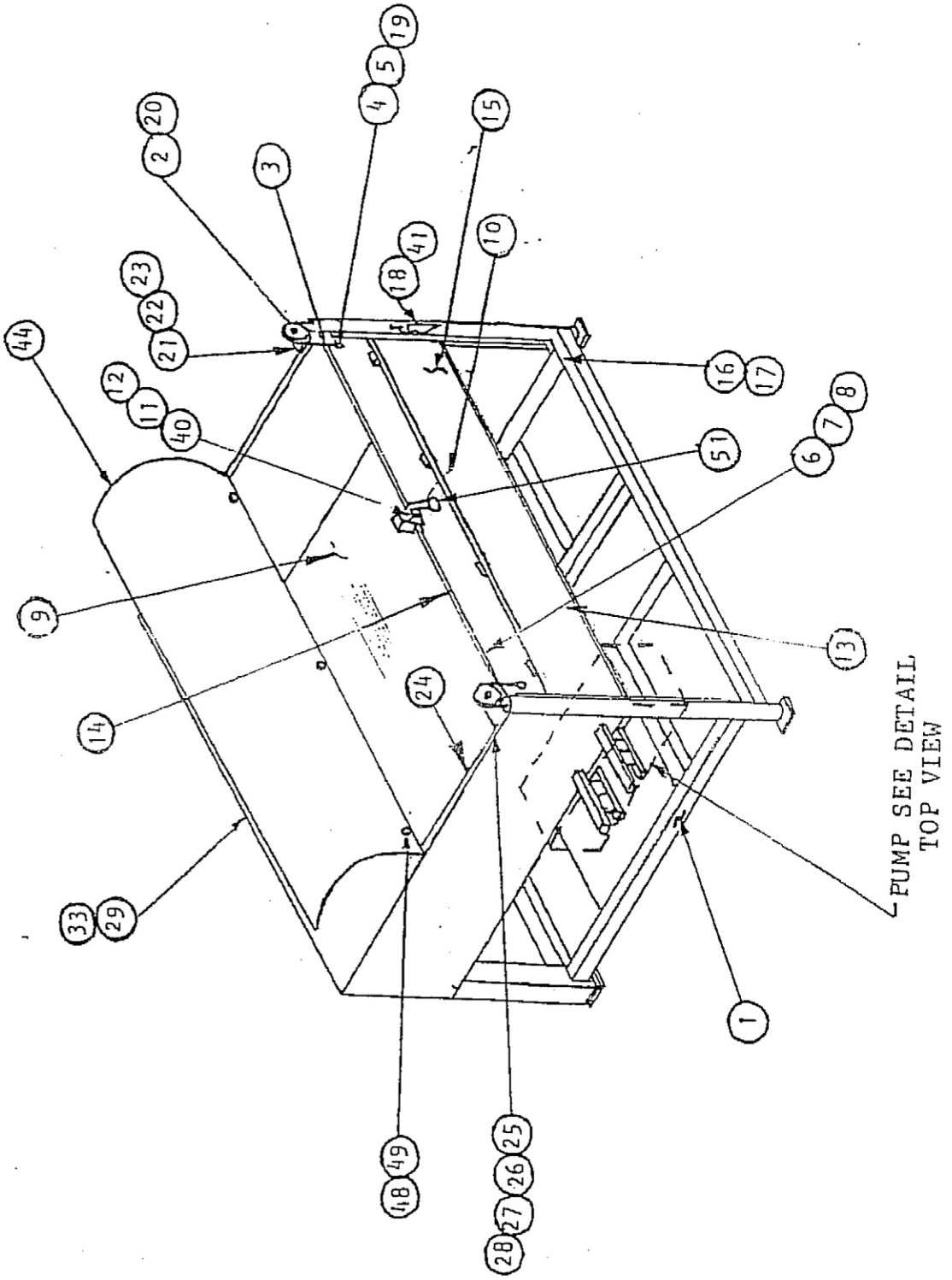
Maintenance

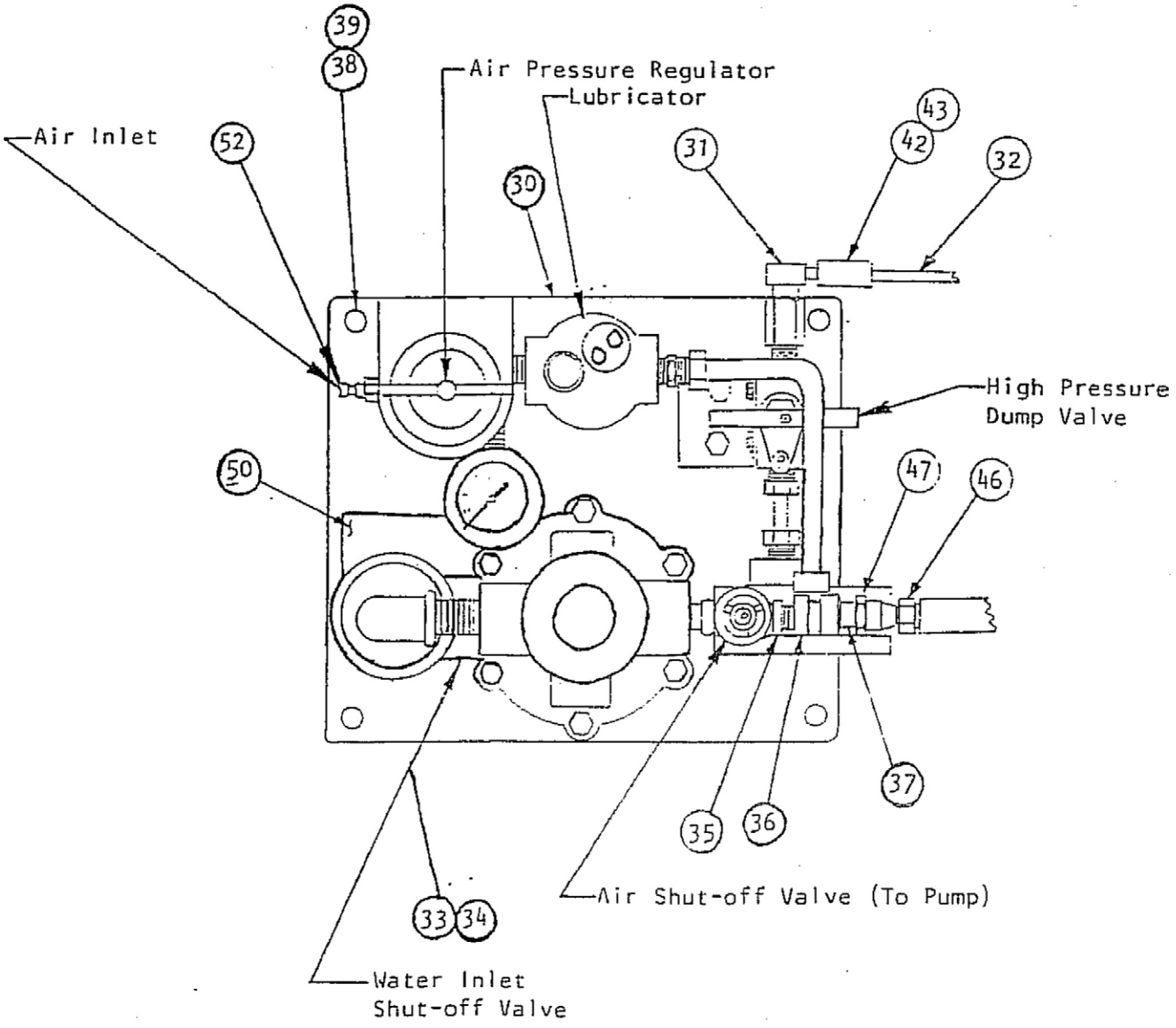
Normal maintenance requires periodic refilling of the lubricator on the water pump and cleaning the see-through lid with clean, soapy water.
NOTE: Do not use petroleum or chemical solvents on the see-through lid. Use only mild detergent.

Troubleshooting

PROBLEM	SOLUTION
Desired pressure not obtained while power unit is operating.	1. Check all connections of tooling and hose assemblies for leaks. See that high pressure dump valve is closed.
	2. Open the water shut-off valve to supply ample water to the power unit.
	3. Too much air in test sample.
Power unit not operating when adjusting the regulator.	1. Supply air not connected or air shut-off valve not open.
Excess water not draining from the cabinet with the shut-off valve open.	1. Check for obstruction in the valve or bottom of the cabinet.

Proof Tester




39
38
Air Pressure Regulator
Lubricator
Air Inlet
52
30
31
43
42
32
High Pressure
Dump Valve
50
47
46
37
35
36
Air Shut-off Valve (To Pump)
33
34
Water Inlet
Shut-off Valve

TOP VIEW

FT1261 Parts List

Detail Number	Part Number	Description	Number Required
1	FT1261-3-1	Tank	1
2	FT1261-3-2	Sheave	2
3	FT1261-3-3	5/32 Dia. x 4.00 Aircraft Cable	2
4	FT1261-3-4	Alumetal Cable Clips	4
5	FT1261-3-5	5/16-18 x .63 Hex Head Bolt	14
6	FT1261-3-6	5/16-18 x .88 Flat Hd Soc Cap Screw	13
7	FT1261-3-7	5/16-18 Hex Nut	29
8	FT1261-3-8	5/16 Lock Washer	29
9	FT1261-3-9	Door	1
10	FT1261-3-10	Cable	1
11	FT1261-3-11	Latch .62 x 2.25 x 4.25	1
12	FT1261-3-12	5/16-18 x .88 Hex Head Bolt	2
13	FT1261-3-13	Deck	1
14	FT1261-3-14	Stiffener	2
15	FT1261-3-15	Front Door	1
16	FT1261-3-16	Rubber Bumper	2
17	FT1261-3-17	5/8-11 x 1.00 Soc Hd Cap Screw	2
18	FT1261-3-18	Counterbalance	3
19	FT1261-3-19	5/16 Flat Washer	3
20	FT1261-3-20	1 /2-13 x 1.00 Soc Hd Cap Screw	2
21	FT1261-3-21	Sheave Support L.H.	1
22	FT1261-3-22	Sheave Support R.H.	1
23	FT1261-3-23	3/8-16 x 1.00 Soc Hd Cap Screw	6
24	FT1261-3-24	Track	2
25	FT1261-3-25	1/4-20 x .75 Flat Hd Soc Cap Screw 1/4	12
26	FT1261-3-26	Lock Washer	16
27	FT1261-3-27	1/4-29 Hex Nut	15
28	FT1261-3-28	Slide	2
29	2083-8-8S	Pipe Nipple Assembly	1
30	FT1264	Power Unit	1
31	2024T-4-4S	Danfoss Elbow	1
32	FT1261-3-32	Hydraulic Tubing	1
33	FT1261-3-33	Valve	2
34	2083-8-6S	Danfoss Pipe Nipple	1
35	2083-6-4S	Danfoss Pipe Nipple	1
36	FD69-1001-06-08	Danfoss Coupling Female Half	1
37	FD69-1002-06-08	Danfoss Coupling Male Half	1
38	FT1261-3-38	Spacer	4
39	FT1261-3-39	5/16-18 x 1.25 Hex Head Bolt	4

Detail Number	Part Number	Description	Number Required
40	FT1261-3-40	T-Pin	1
41	FT1261-3-41	1 /4-20 Eye Bolt	2
42	FF96505-4	Danfoss Ferrule	1
43	FC2875-4	Danfoss Nut	1
44	FT1261-3-43	Cover Canvas	1
45	FT1261-3-44	Crate	1
46	FA7082HHH0360	Hose Assembly	1
47	2021-08-08	Danfoss Adapter	1
48	FT1261-3-48	3/8-16 x .50 Hex Head Screw	3
49	FT1261-3-49	3/8-16 Hex Nut	3
50	SC2307	ID Tag	1
51	FT1065	Name Tag	1
52	FD41-1014-04-04	Danfoss Male Air Coupling Nipple	1

FT1261 Hose Proof Test Stand

The FT1261 hose proof test stand is designed for easy and economical hydrostatic testing of hydraulic hose assemblies.
Proof testing at twice the recommended working pressure is an easy nondestructive way to test hose assembly reliability before it leaves the shop.
Practical and self-contained, the FT1261 machine has an air driven power unit that can develop a maximum of 22,000 psi hydraulic pressure using 100psi clean, dry shop air. The power unit (FT1264) can be ordered separately.
The FT1261 hose proof test stand will proof test assemblies up to 2 inches inside diameter, 6-spiral wire in 50 foot coil lengths.
Two types of tooling are available for proof testing with the FT1261 machine. Standard Danfoss adapters may be used with any Danfoss hose assembly. Special proof test adapters with O-Ring seals are available for internal skive crimp hose assemblies. Proof test adapters must be ordered separately

FEATURES

- Designed to use tap water, eliminating the need for a special test fluid.
- Compact power unit is air driven.
- Tests assemblies up to 2 inches inside diameter, 6-spiral wire in 50 foot coil lengths.
- Cabinet construction withstands hose assembly failures and functions as a 10 gallon reservoir.
- Air regulator and gauge provide easy pressure adjustment and monitoring.
- Tough transparent Lexan lid resists impact resulting from assembly failure.

SPECIFICATIONS

Dimensions	8 feet wide × 7 feet deep × 4 ½ feet high
Weight	800 pounds
Test Fluid	Tap water
Pump	Air driven hydraulic
Air Requirements	70-100psi clean, dry shop air
Pressure Capabilities	Variable: to 15,250 psi with 70 psi clean, dry shop air, to 22,000 psi maximum with 100 psi clean, dry shop air
Tooling	Standard adapters or special O-Ring seal proof test adapters

POWER UNIT

The power unit of the FT1261 tester is a compact, economical air driven hydraulic pump. It will provide sufficient hydraulic pressure to proof test any Danfoss hose assembly.
The pump operates on a simple principle of pressure magnification through use of differential areas in which a relatively large air operated piston drives a smaller piston to provide fluid flow at high pressures.

FT1261 Standard Adapter Selection Chart

Hose Fitting Style and Size	Fitting Adapter Part Number	Pressure Port Adapter Part Number	Plug or Cap Part Number
SAE 37° (JIC) Swivel			
- 4	2027-8-4S	-	900599-4
- 5	2021-6-5S	2081-12-6S	900599-5
- 6	2027-8-6S	-	900599-6
- 8	2027-8-8S	-	900599-8
- 10	2027-10-8S	-	900599-10
- 12	2027-8-12S	-	900599-12
- 16	2021-12-16S	-	900599-16
- 20	2021-16-20S	2040-12-16S	900599-20
- 24	2021-16-24S	2040-12-16S	900599-24
- 32	2021-16-32S	2040-12-16S	900599-32
SAE 45° Swivel			
- 4	2000-6-4B	2081-12-6S	900599-4
- 5	2000-6-5B	2081-12-6S	900599-5
- 6	2000-6-6B	2081-12-6S	2001-6-6B & 2082-6S
- 8	2000-12-8B	-	900599-8
- 10	2000-12-10B	-	900599-10
- 12	2000-12-12B	-	2001-8-12B & 2082-8S

Hose Fitting Style and Size	Fitting Adapter Part Number	Pressure Port Adapter Part Number	Plug or Cap Part Number
Male Pipe			
-2	2081-8-2S	2081-12-8S	2046-2-2S & 2082-2S
- 4	2081-8-4S	2081-12-8S	2046-4-4S & 2082-4S
- 6	2081-8-6S	2081-12-8S	2046-6-6S & 2082-6S
- 8	2081-12-8S	-	2046-8-8S & 2082-8S
- 12	-	-	2046-12-12S & 2082-12S
- 16	2040-12-16S	-	2046-16-16S & 2082-16S
- 20	2040-16-20S	2040-12-16S	2046-20-20S & 2082-20S
- 24	2040-20-24S	2040-12-16S & 2040-16-20S	2046-24-24S & 2082-24S
- 32	2040-24-32S	2040-12-16S & 2040-16-20S & 2040-20-24S	2046-32-32S & 2082-32S

*Adapters are available for other hose fittings styles.
**Pressure port adapter not required.

FT1261 Special O-Ring Seal Proof Test Adapters for Internal Skive Fittings Only

Proof Test Tooling *	Fitting Dash Size/Style
FT1236-1-1	-12 Code 61 Split Flange
FT1236-1-2	-16 Code 61 Split Flange
FT1236-1-3	-20 Code 61 Split Flange
FT1236-1-4	-24 Code 61 Split Flange
FT1236-1-5	-32 Code 61 Split Flange
FT1236-1-6	-12 Code 61 Split Flange
FT1236-1-7	-16 Code 61 Split Flange
FT1236-1-8	-20 Code 61 Split Flange
FT1236-1-9	-24 Code 61 Split Flange
FT1236-1-10	-32 Code 61 Split Flange
FT1236-1-11	-12 37° JIC Swivel
FT1236-1-12	-16 37° JIC Swivel
FT1236-1-13	-20 37° JIC Swivel
FT1236-1-14	-24 37° JIC Swivel

Proof Test Tooling *	Fitting Dash Size/Style
FT1236-1-15	-32 37° JIC Swivel
FT1236-1-16	-12 Male NPTF
FT1236-1-17	-16 Male NPTF
FT1236-1-18	-20 Male NPTF
FT1236-1-19	-24 Male NPTF
FT1236-1-20	-32 Male NPTF
FT1236-1-21	-12 JIC Male Flare
FT1236-1-22	-16 JIC Male Flare
FT1236-1-23	-20 JIC Male Flare
FT1236-1-24	-24 JIC Male Flare
FT1236-1-25	-32 JIC Male Flare

*Two adapters are required per hose assembly to be tested.

CAUTION: High pressure water can be dangerous. Read all Operating and Safety Instructions in Owner's Manual before attempting to operate.

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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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