Resource Manual

Installation Guide • Operating Procedures • Parts Breakdown

MODEL SS675

TRANSPORT HYDRAULIC COOLING SYSTEMS

MODELS

SS675ER / SS675ER-ND
SS675HR / SS675HR-ND
SS675E3000ND / SS675H3000ND
SS675ND-COMBO

No drill mounting option available on all models.

Model #:_____

Serial #:_____

Installation Date:_____

INSTALLATION GUIDE , OPERATING PROCEDURES & PARTS BREAKDOWN

MODEL SS675

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INSTALLATION GUIDE , OPERATING PROCEDURES & PARTS BREAKDOWN

Please read this guide carefully before installing and operating your THERMAFLOW system.

The THERMAFLOW assembly is designed to cool and filter the oil required to operate your hydraulic system. The oil is cooled by forcing air across cooling fins on the heat exchanger. This system utilizes either an electric or hydraulic fan motor to force air across the fins. The fan motor options are described below.

The Model SS675 has 2 fan motor options, Electric or Hydraulic. The Electric fan motor option has a 12VDC cooling fan which is operated with a temperature control switch. This switch gets wired into keyed power. When the key is turned on, the switch will be ready to activate the fan when the oil temperature gets to 110°F. When the oil temperature falls to 105°F the fan will turn off.

The Hydraulic fan motor option has a fixed pressure compensated flow control that automatically cycles the fan “ON” when the hydraulic system is running and “OFF” when not running. This option comes plumbed from the factory.

Because different product pump applications require different speed and power requirements, your THERMAFLOW system was custom engineered for a particular application. If the system is operated beyond its designed capacity, overheating and/or component damage may result.

STEP 1 POSITIONING & MOUNTING

The Model SS675 is designed to mount behind the truck cab across the frame rail sides.

A) Diagram A describes two mounting options available. Allow a minimum of 4" on both sides of the unit for proper airflow.

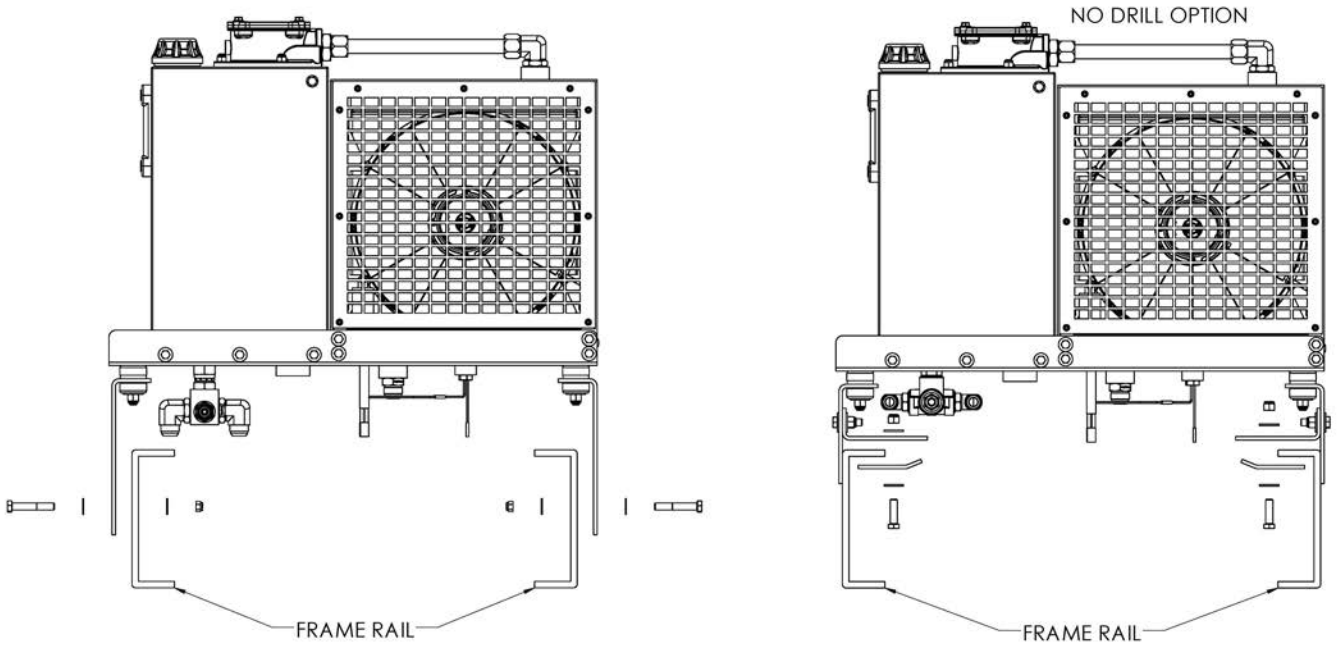


DIAGRAM A

STEP 2 INSTALLING THE PTO & HYDRAULIC PUMP

A) Install the PTO to the transmission and mount the hydraulic pump according to the instructions included with the PTO.

HELPFUL HINT: *If you are using a direct mount hydraulic pump/PTO combination, be sure that the pump splines are well lubrication with a heavy grease. This grease will prevent premature spline wear on the PTO and pump shafts. Also available from both MUNCIE and CHELSEA is a new option for a greaseable shaft. This option allows you to grease these splines without pulling the pump off the PTO.*

STEP 3 ELECTRICAL WIRING *(Models with Electric Fan)*

Models having a 12 VDC fan motor can be wired two different ways. Listed below are these options.

OPTION #1 - FAN SWITCH WIRED HOT

This option wires the temp switch so that when the key is turned on it has power going to it.

ELECTRICAL CONNECTIONS

10 Gauge RED WIRE: ***Connect to the positive (+) 12VDC battery terminal (20 Amps) through circuit breaker (150153) provided in electrical kit (934525TC).***

10 Gauge BLACK WIRE: ***Connect to the truck frame or to the negative (-) battery terminal.***

18 Gauge RED WIRE: ***Connect to a keyed power source.***

For further illustration follow **DIAGRAM B** on Page 4.

NOTE: We recommend that the power supply be taken directly from a battery post or similar high current location.

OPTION #2 - TEMP SWITCH WIRED THROUGH AN AIR SWITCH

This option wires the temp switch so that you will only be able to run the fan when the PTO is engaged. PTO disengaged fan “OFF”, PTO engaged fan “ON” via an air switch.

ELECTRICAL CONNECTIONS

10 Gauge RED WIRE: ***Connect to the positive (+) 12VDC battery terminal (20 Amps) through circuit breaker (150153) provided in electrical kit (934525TC).***

10 Gauge BLACK WIRE: ***Connect to truck frame or to negative (-) battery terminal.***

18 Gauge RED WIRE: ***Connect to air switch and to positive (+) 12VDC battery terminal with recommended 5 amp fuse.***

For further illustration follow **DIAGRAM C** on Page 5.

NOTE: We recommend that the power supply be taken directly from a battery post or similar high current location.

STEP 3 ELECTRICAL WIRING *(CONTINUED)*

Diagrams B below illustrated proper electrical wiring for electric fan models.

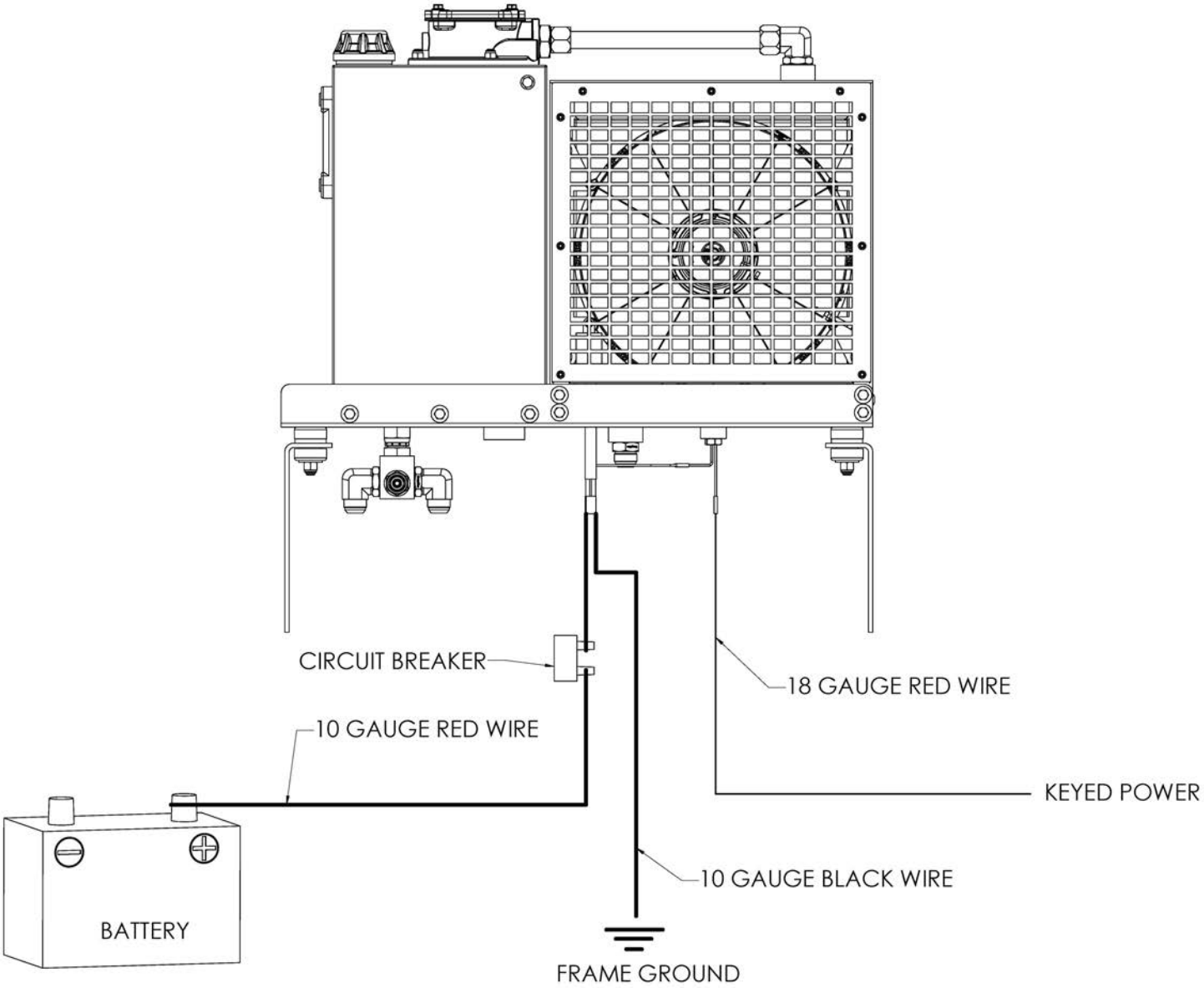


DIAGRAM B

Above electrical schematic illustrates the proper wiring for **OPTION #1** from Page 3.

STEP 3 ELECTRICAL WIRING *(CONTINUED)*

Diagram C below illustrates proper electrical wiring for electric fan models.

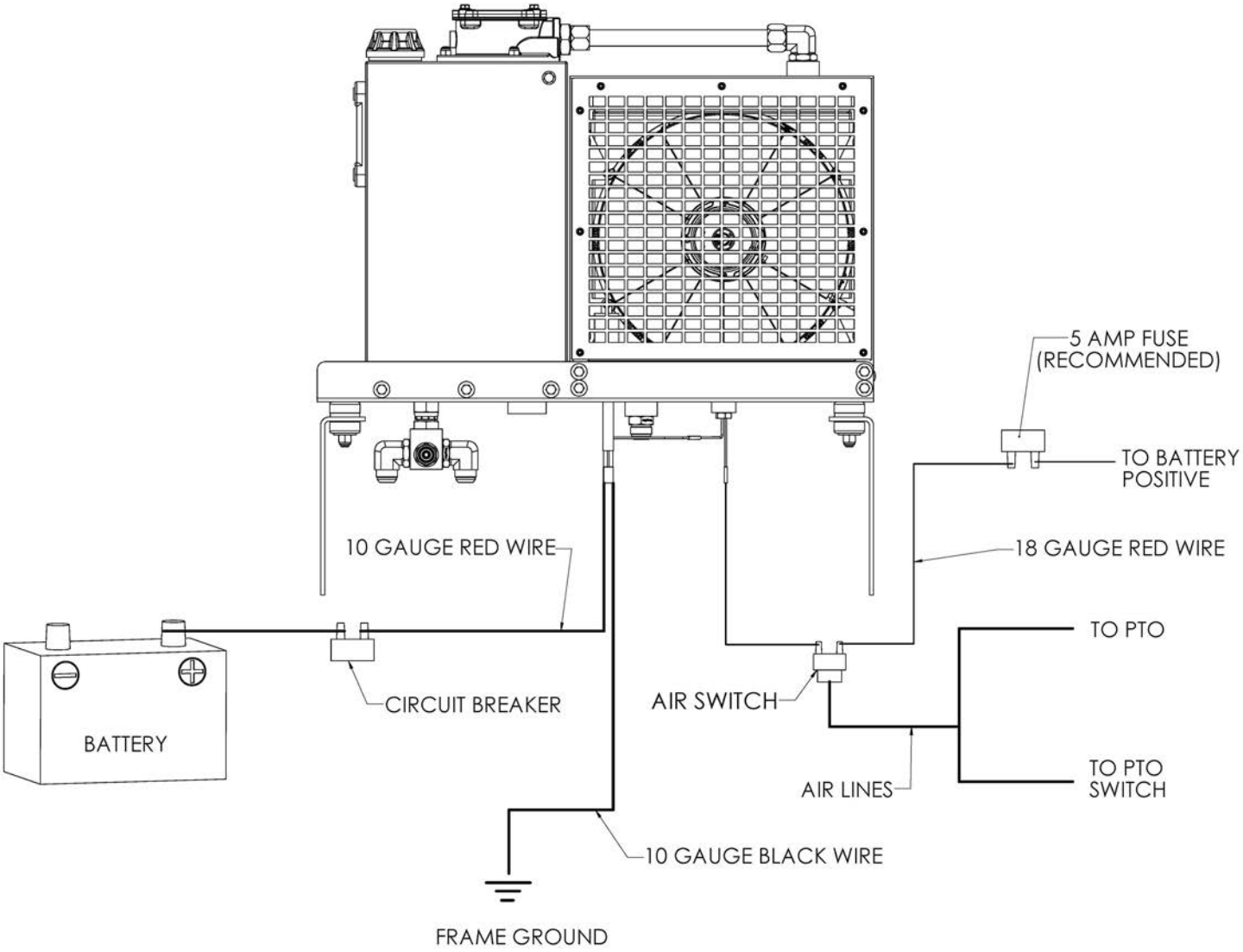


DIAGRAM C

Above electrical schematic illustrates the proper wiring for **OPTION #2** from Page 3.

STEP 4 HYDRAULIC PLUMBING

DIAGRAMS D & E show proper plumbing for all Models SS675. Please carefully read the Helpful Hints and Notes listed below before beginning.

HELPFUL HINT: *We recommend the use of minimum 1 1/2" suction hose. If the suction hose is too small the hydraulic pump will cavitate and fail prematurely. A 3/4" pressure hose is recommended for flows up to 25 gpm. A 1" pressure hose is recommended for flows greater than 25 gpm. The 675 Series has a 2" suction port for high flow and tandem applications.*

NOTE*: Be careful not to over tighten NPT threads. It is very easy to crack these types of ports when tightening fittings.*

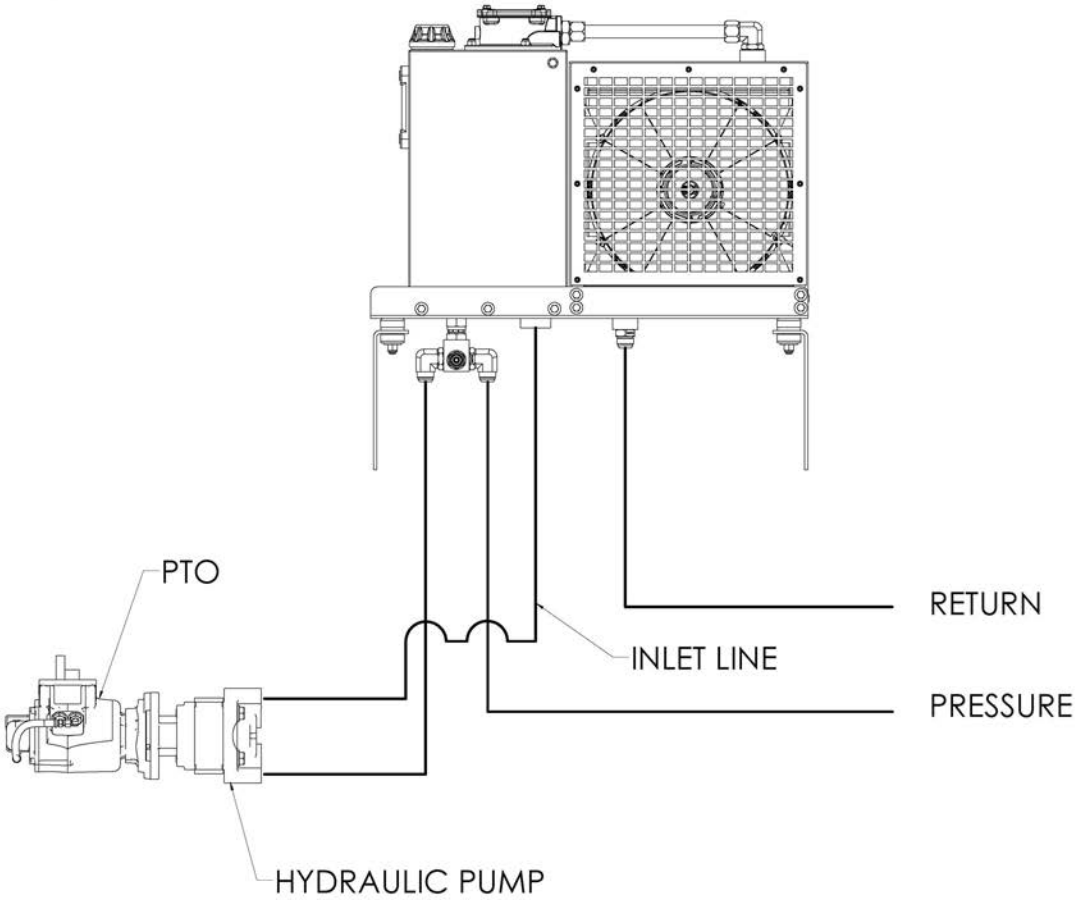


DIAGRAM D

STEP 4 HYDRAULIC PLUMBING (Continued)

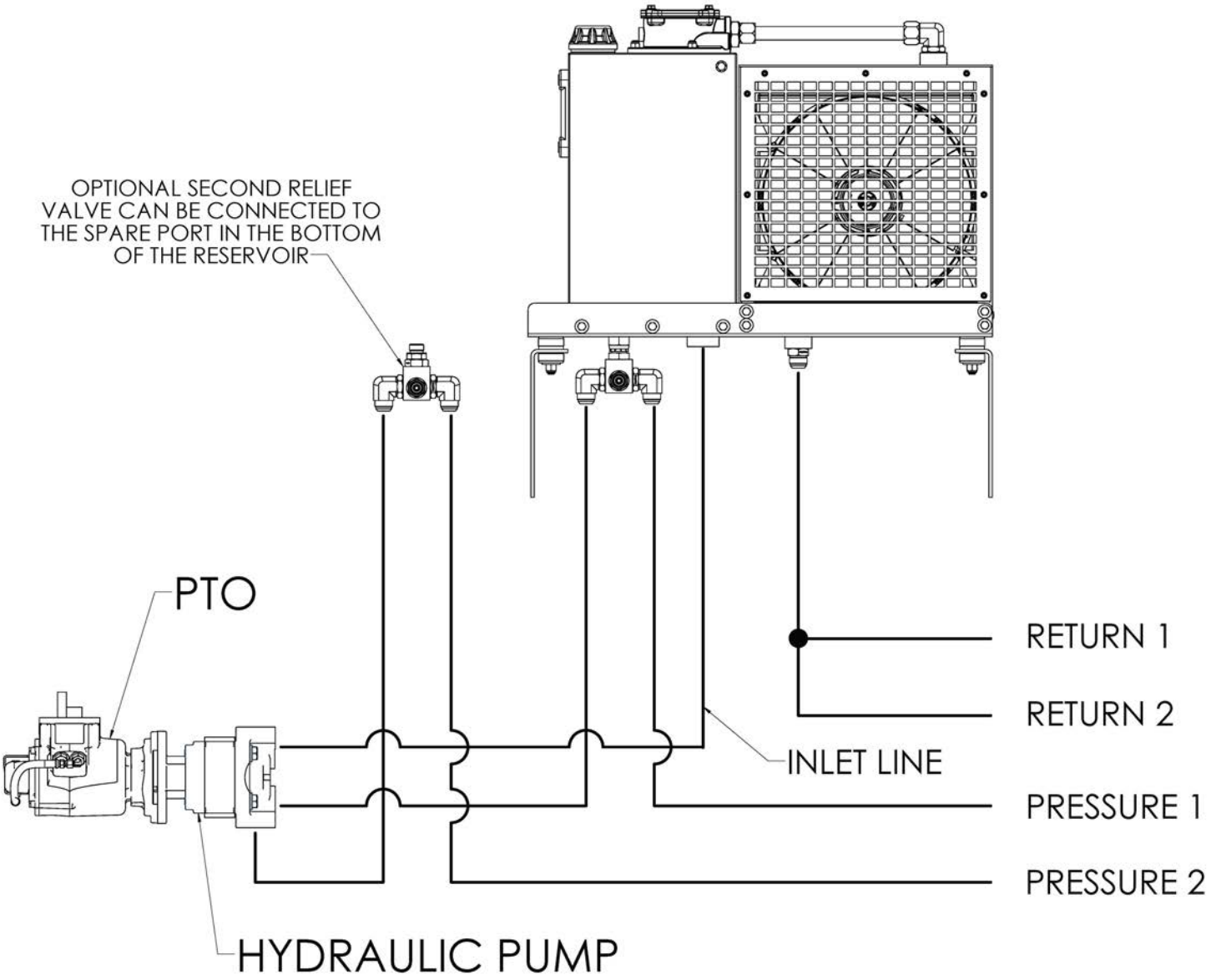


DIAGRAM E

STEP 5 Final Assembly

A) Complete all hydraulic plumbing.

B) Fill the reservoir until the oil level gets to the top blue line on the site level gage.

C) Set relief valve for system requirements.

NOTE: After the initial start up procedure you will need to add oil due to the hydraulic lines filling up to capacity.

NOTE: *Over-filling the reservoir will cause the oil to expand up through the breather assembly when the oil warms up.*

NOTE: We recommend using a high grade of hydraulic oil with a Pour Point of -50 F. This will ensure proper oil flow during extreme cold weather operation. Use of synthetic hydraulic oils is also recommended. Recommended Oil: MOBIL DTE10-32 or equivalent.

STEP 6 START-UP PROCEDURES

The following steps are to ensure that the THERMAFLOW assembly is operating properly.

NOTE: Before engaging the PTO, make sure that all hydraulic lines are plumbed and properly tightened.

1) Slowly engage the PTO with engine at idle speed.

NOTE: Watch the oil level in the reservoir. Be ready to add more oil as needed to maintain the oil level between the level indication lines on the site level gage.

2) Check for hydraulic leaks and repair as needed.

3) Check for fan operation (Electric & Hydraulic).

4) Carefully Tach the product pump speed.

5) Slowly increase the engine speed until desired product pump speed is obtained.

6) Run system for at least five minutes to ensure that system is sufficiently cooling the hydraulic oil. Using a Hydraulic Flow Meter Kit, set required pressure and flow rates to system requirements.

7) Slow engine to idle and disengage the PTO.

8) System is ready for operation.

System Maintenance

Hydraulic

Fluid:

- Drain and replace hydraulic oil every 6 to 12 months depending on use.
- Recommended Fluid: Mobil DTE10-32 or equivalent.

Filter:

- Remove 4 cap screws on top of filter housing.
- Remove filter cartridge and spring.
- Replace with new filter cartridge and spring Part Number 675331.
- Apply anti-seize to cap screws and tighten.

Pump:

- Inspect periodically for leaks.
- Check hoses for signs of wear.

Motor:

- Inspect periodically for leaks.
- Check hoses for signs of wear.

PTO

- Grease output shaft every 6 to 12 months depending on use.
- If PTO does not have a grease zerk on output shaft, remove direct mount hydraulic pump and grease the output shaft using a high quality gear lube.

Troubleshooting

Safety First!

Think about it before you do it. Our systems use controlled fluid pressure and converts it to rotational movement. This means that the system pressure operates around 2000 psi. A pin hole leak of fluid at this pressure can be dangerous. Use caution when loosening fittings, system pressure can be maintained for a period of time after shutdown.

Troubleshooting

Always inspect the things easiest to eliminate first. Look for faulty linkage or wiring that controls the PTO,pump or motor. Look at the fluid level and appearance of the oil. Check temperatures and pressures.

Excessive Heat:

- Clean air passages through heat exchanger.
- Check fan operation.
- Check setting of relief valve.
- Check temperature of suction line vs outlet line temperature. If the outlet temperature is noticeably hotter, the pump is cavitating.
- Check for contamination in relief valve. Clean and replace.
- Check for added flow controls. If a flow control has been added to the system, excess heat can be generated by the added restriction to flow.

Loss of Motor Speed:

- Check oil level.
- Ensure recommended engine idle speed is maintained.
- Check output pressure of the pump. If system pressure cannot be maintained, attempt to adjust the relief valve setting to max system pressure. If this does not make a noticeable change, make sure to return relief setting to original position and bring the pump and motor to a hydraulic specialist for bench testing and possible replacement.

Excessive Noise:

- Check oil level. Fill to proper level.
- Ensure use of recommended oil type and weight.
- Ensure suction line to pump is at least 1 1/2".
- Ensure there is no restriction in suction line.

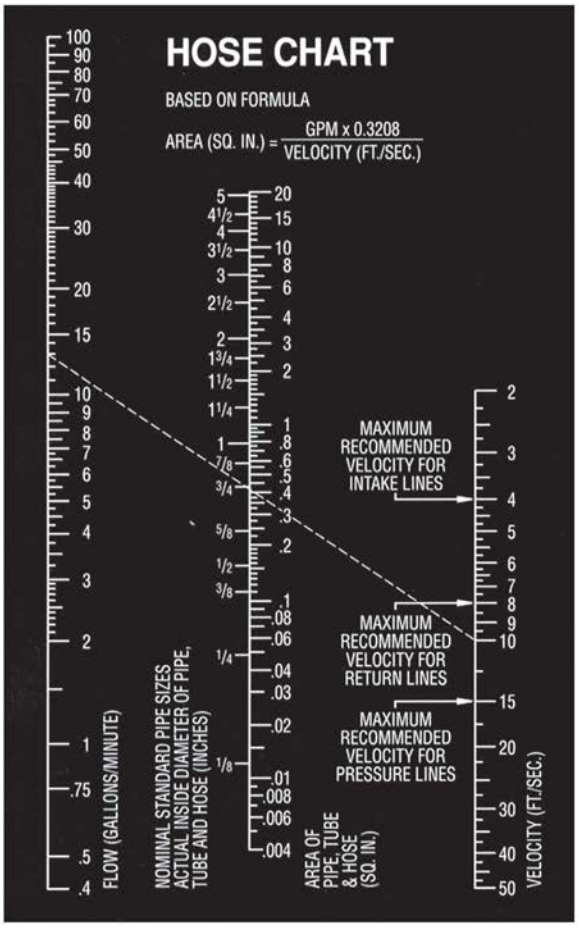
Oil Discoloration:

- Ensure suction line connections are tight.
- Ensure oil is free from water and contaminants. Drain and refill with recommended oil and replace filter.
- Ensure use of recommended oil type and weight.

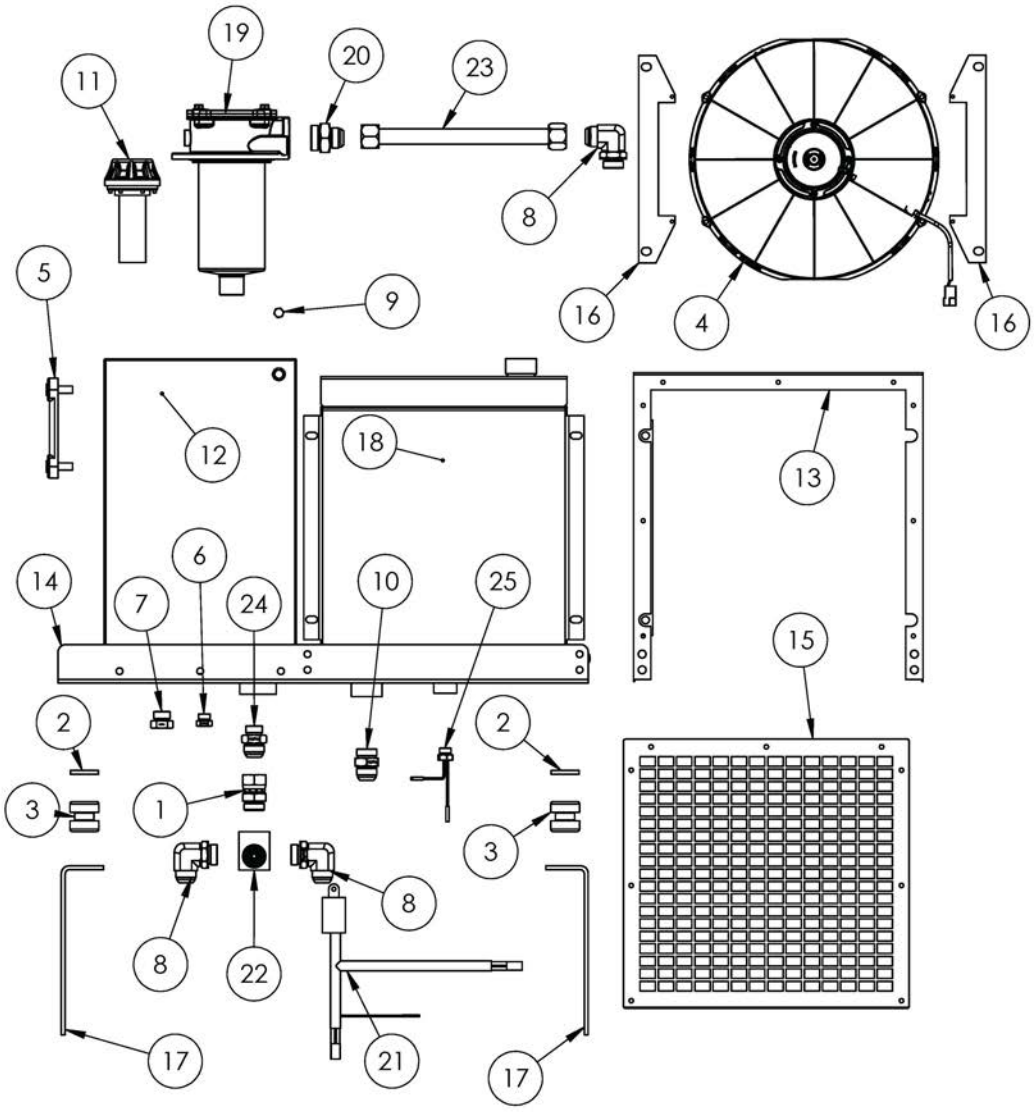
Specifications

Max Flow Rate:	30/50 gpm
Max Pressure:	300/5000 psi with optional high pressure relief valve
Reservoir:	7.2 gal
Weight:	100 lbs
Suction Line:	1.5-2 Inch
Pressure Lines:	1 Inch
Warranty:	2 years

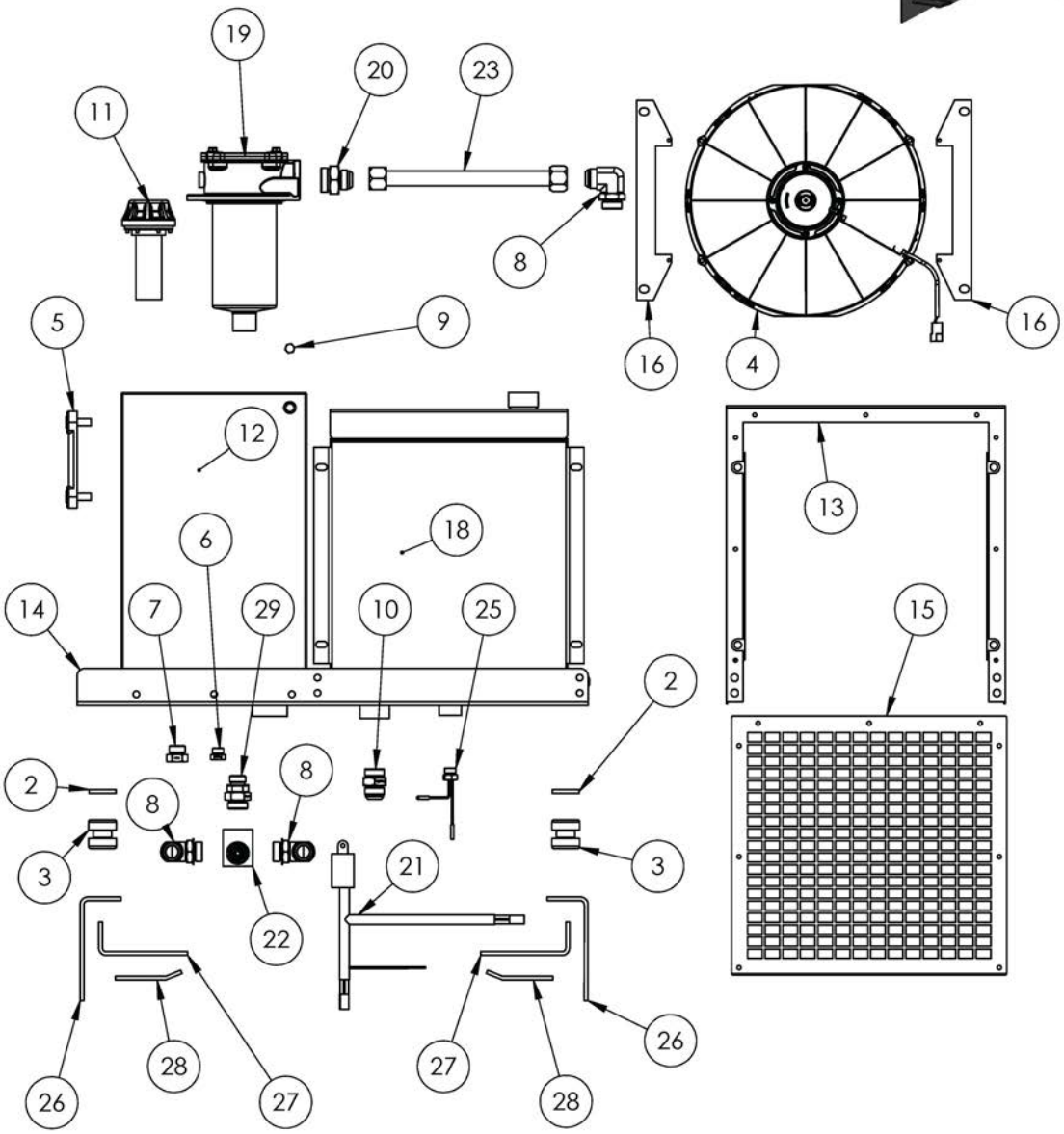
Oil - The recommended oil is Mobil DTE10-32 or equivalent. Mobil DTE10-32 is a supreme performance anti-wear hydraulic oil engineered for wide temperature range applications. It exhibits optimum flow characteristics at sub-zero temperatures and is resistant to shearing and viscosity loss so that system efficiency is maintained and internal pump leakage is minimized at high operating temperatures and pressures.



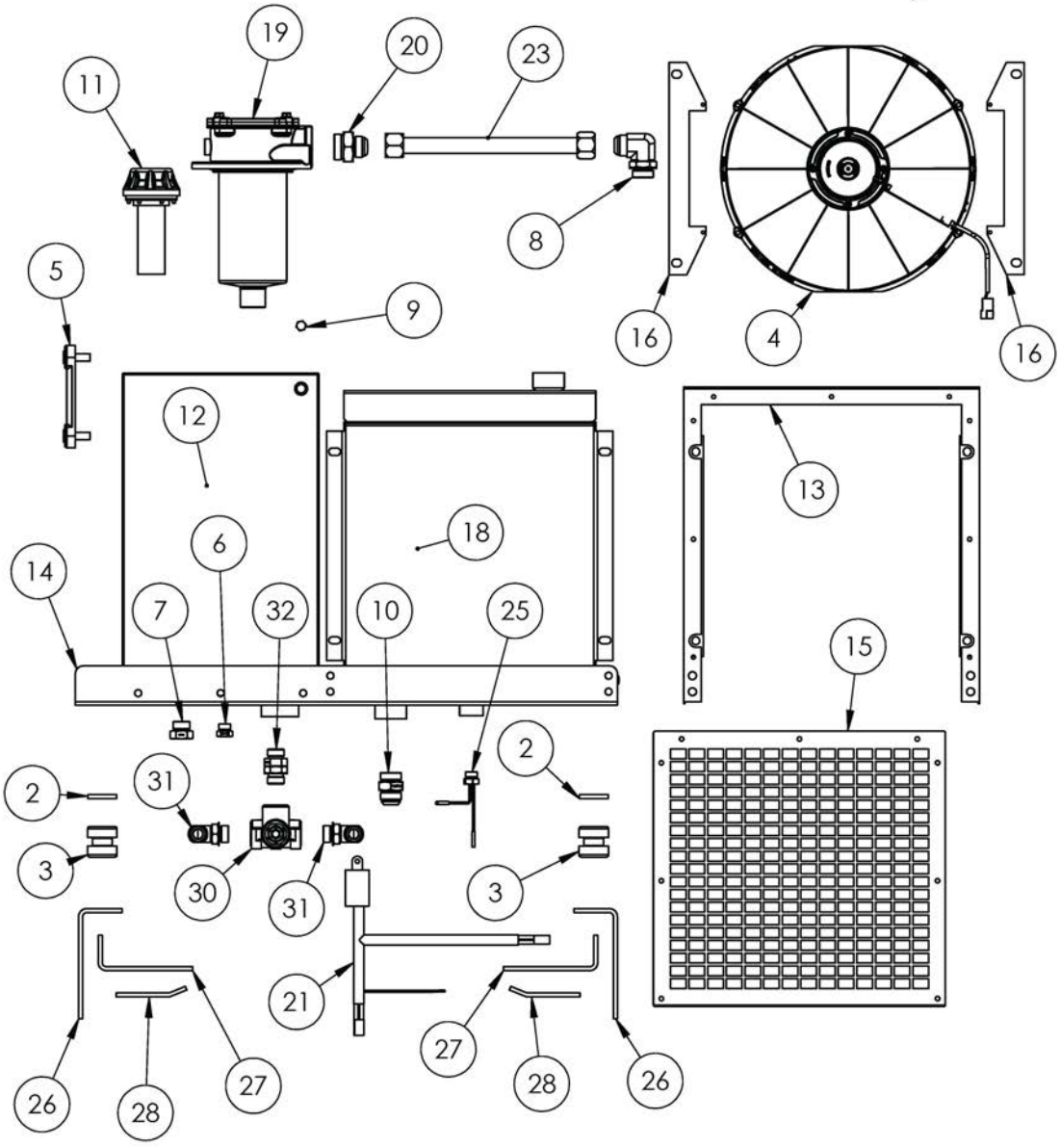
MODEL SS675ER



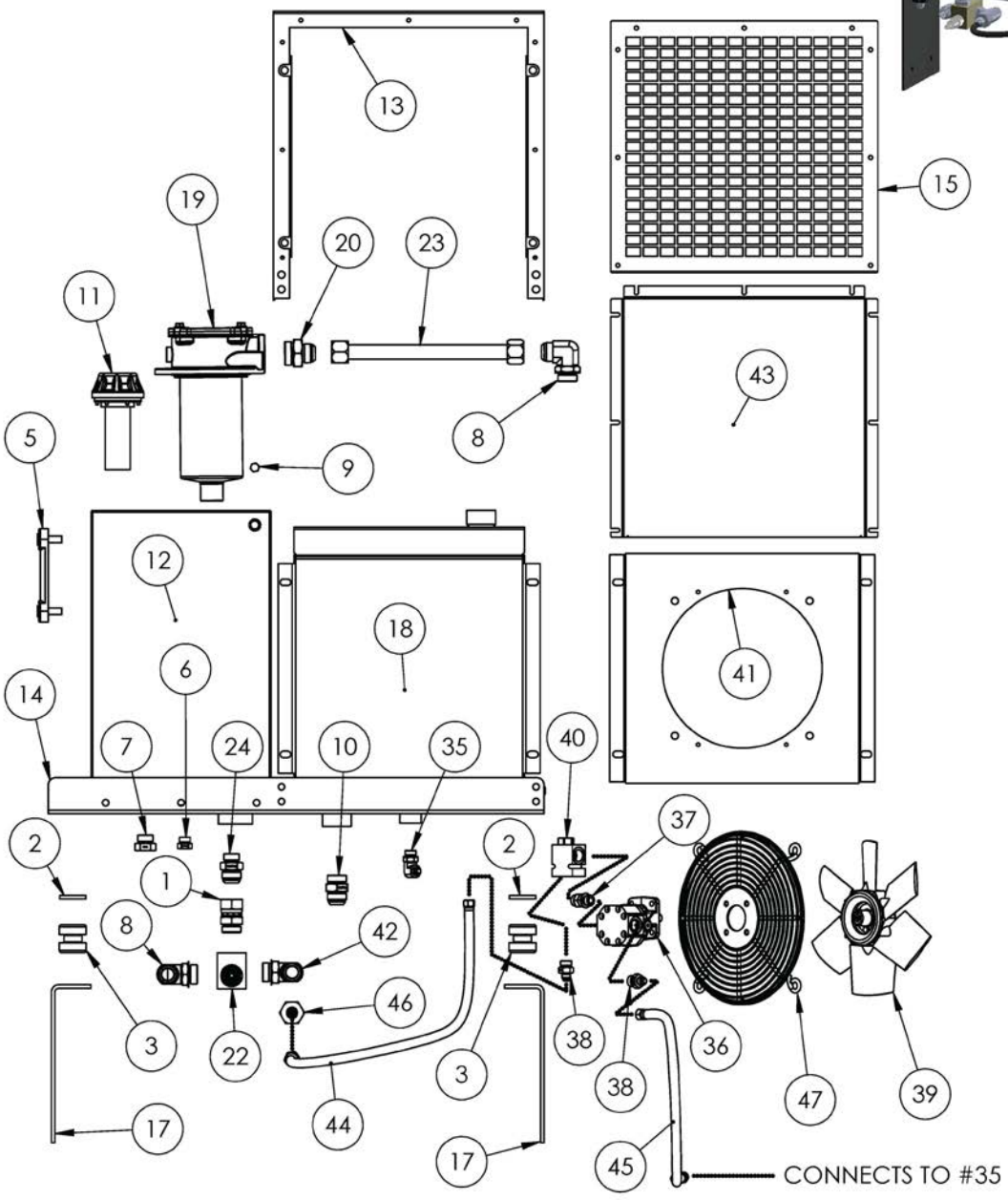
MODEL SS675ER-ND



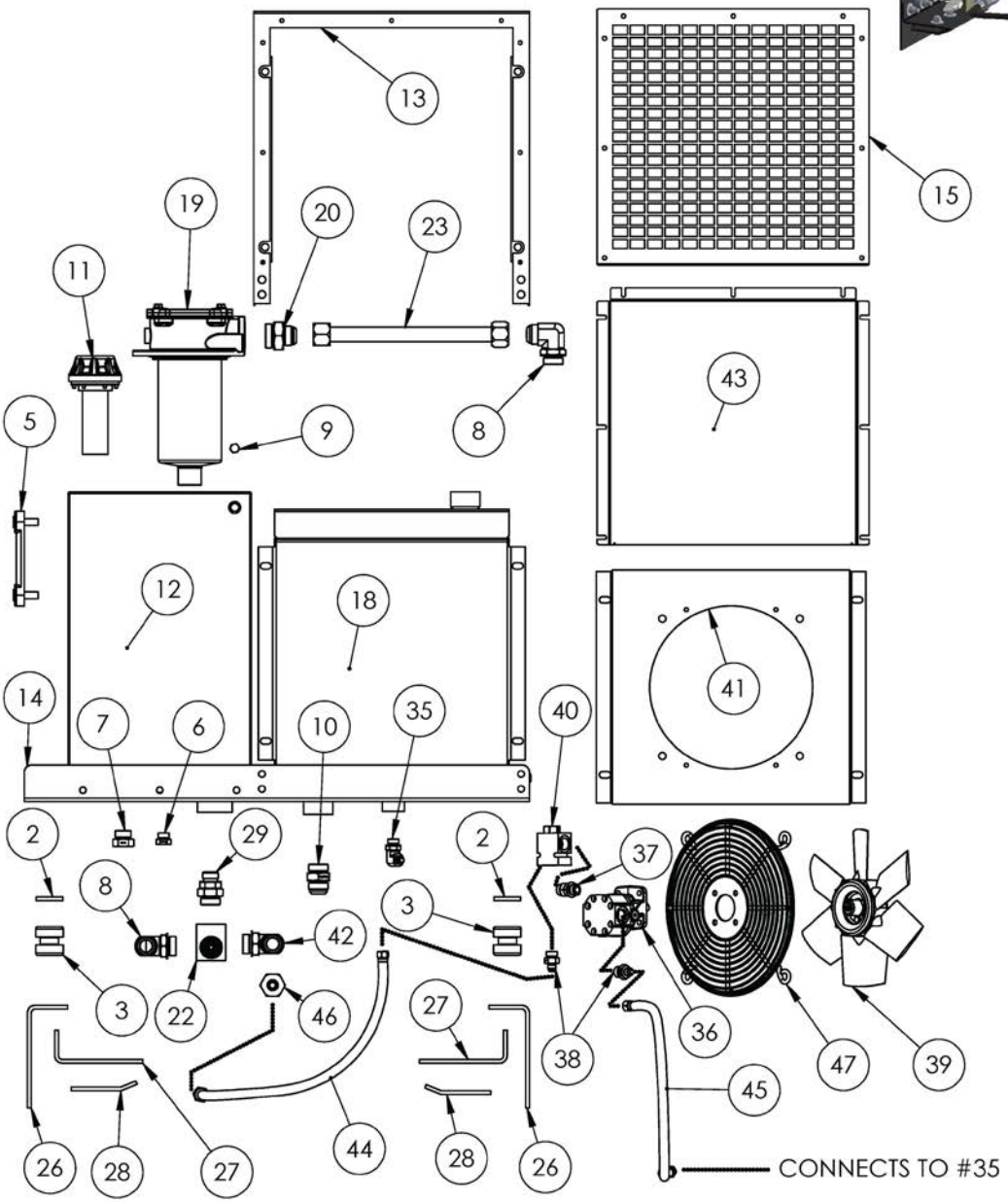
MODEL SS675E3000ND



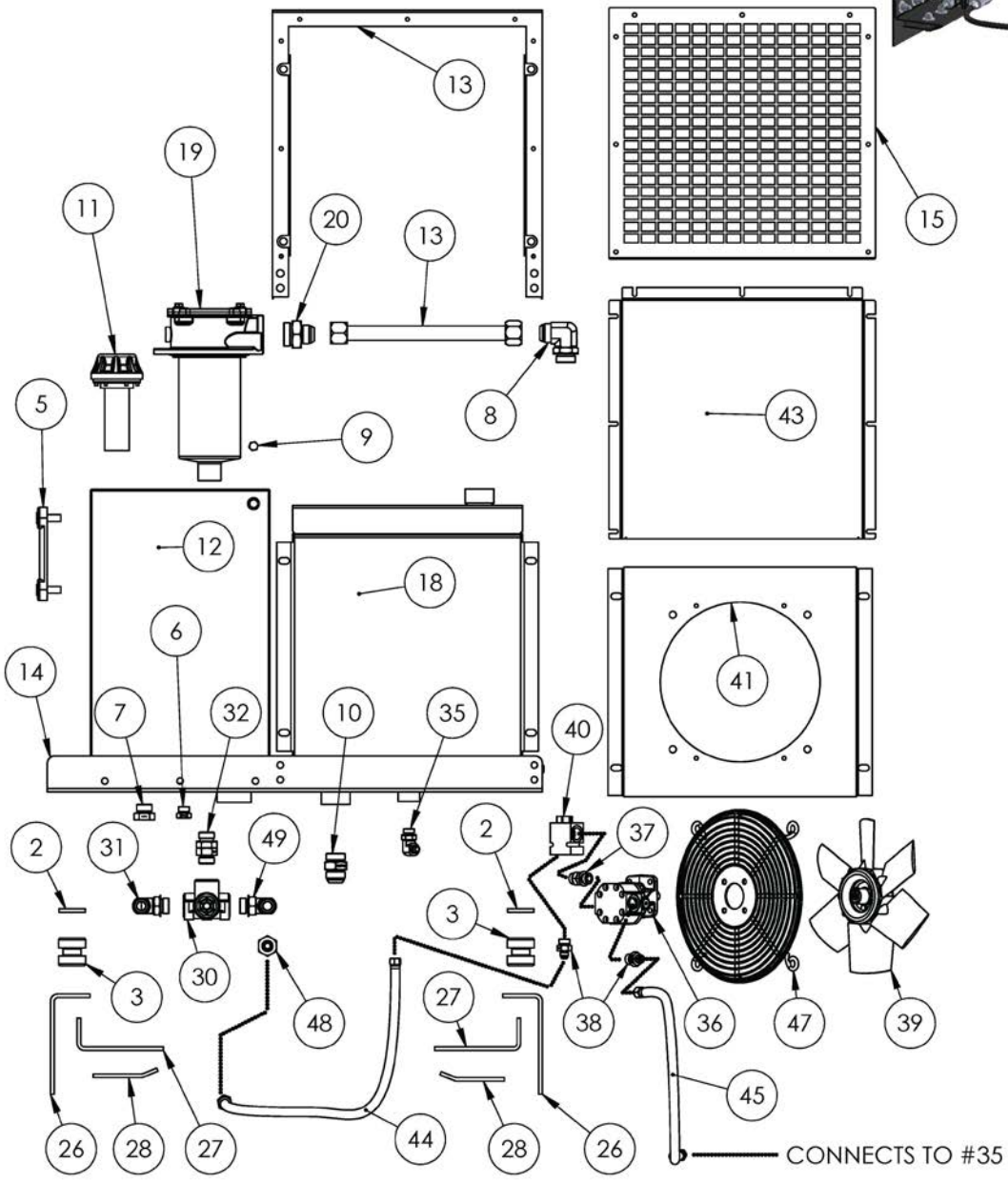
MODEL SS675HR



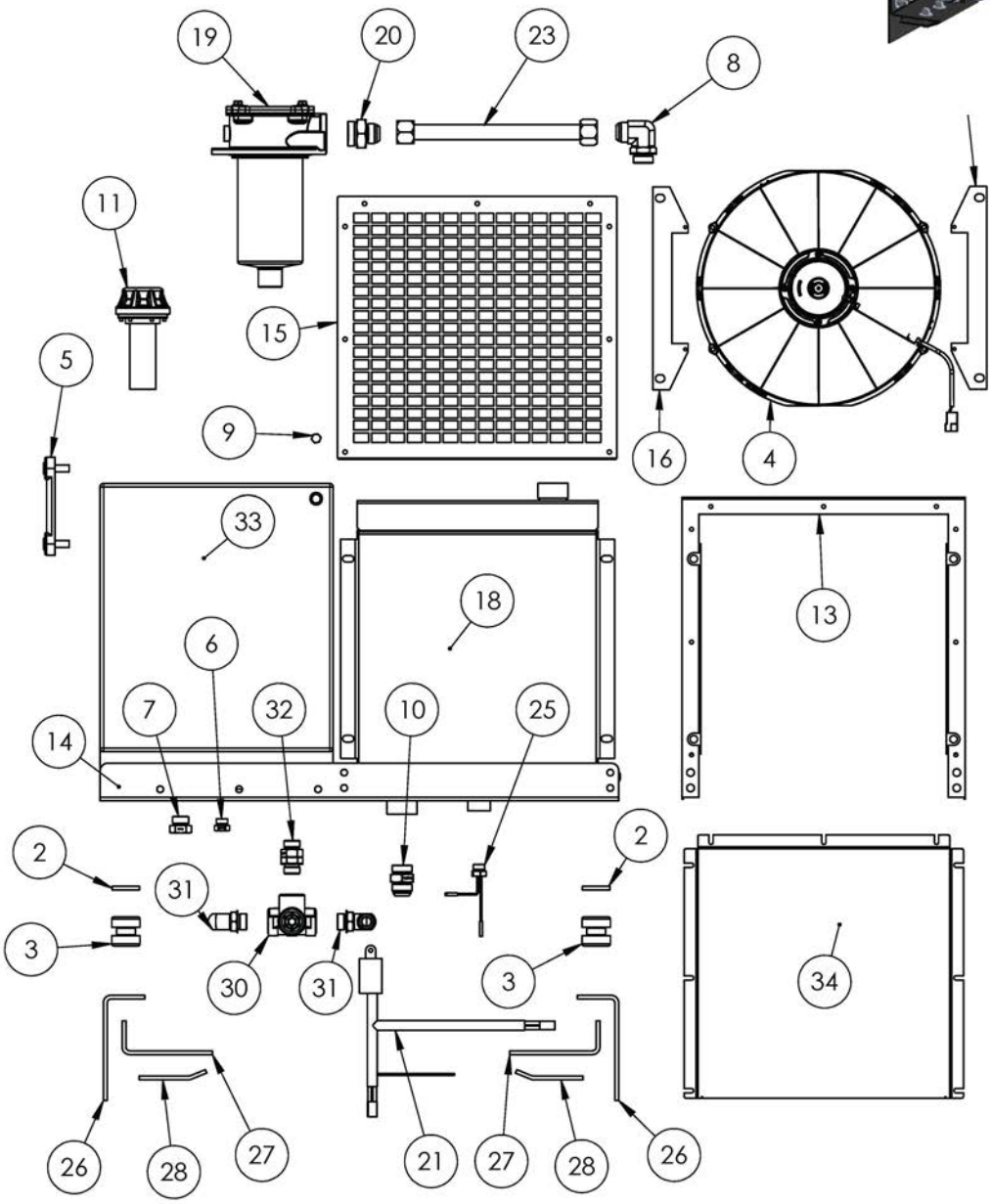
MODEL SS675HR-ND



MODEL SS675H3000ND



MODEL SS675ND-COMBO



Parts List

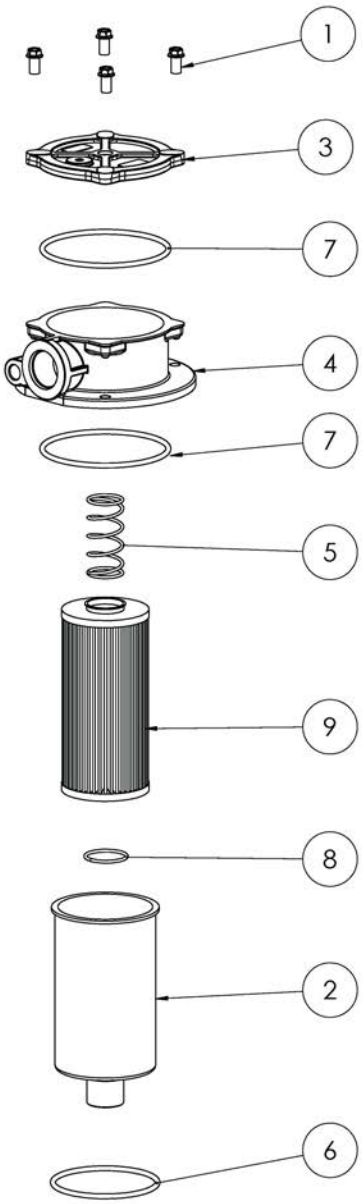
Item No.	Part #	Description
1	150714	16FJIC-16MORB SWIVEL
2	300032	SPACER
3	300200	SHOCK MOUNT
4	300306	15' FAN 12V
5	300334	SITE GLASS
6	300410	8MORB PLUG
7	300412	12MORB PLUG
8	300416	16MJIC-16MORB 90°
9	300710	1/4 IN NPT PLUG
10	375418	16MJIC-16MORB STRAIGHT
11	600332	BREATHER
12	675010	675 TANK
13	675020	675HEAT EXCHANGER HOUSING
14	675030	675 BOTTOM TRAY
15	675050	675 SCREEN
16	675060	675 FAN BRACKET
17	675071	675 MNT LEG 11"
18	675300	675 HEAT EXCHANGER
19	675330	675 FILTER ASSEMBLY
20	675418	16MJIC-20MORB STRAIGHT
21	675535	675 TEMP HARNESS
22	675702	5000 PSI RELIEF VALVE
23	675728	675 TUBE
24	675730	16MJIC-12MORB STRAIGHT
25	800515	TEMP SWITCH
26	675070	675 SHORT MTNG LEG
27	675072	BOTTOM FRAME SUPPORT
28	675074	FRAME CLAMP

Parts List

Item No.	Part #	Description
29	675908	16MORB-12MORB ADJUSTABLE
30	300702	3000 PSI RELIEF VALVE
31	300708	12MJIC-12MORB 90°
32	300748	12MORB-12MORB ADJUSTABLE
33	675011	675 COMBO TANK
34	675850	675 HYD FAN COVER
35	6801_6_8	6MJIC-8MORB 90°
36	150510	HYD FAN MOTOR
37	150908	8MORB-8MORB ADJUSTABLE
38	150912	6MJIC-8MORB STRAIGHT
39	600820	FAN BLADE
40	600830	FLOW CONTROL
41	675040	675 HYD FAN SHROUD
42	675734	16MJIC-16MJIC-16MORB TEE
43	675850	675 HYD FAN COVER
44	675890	FAN INLET HOSE
45	675892	FAN RETURN HOSE
46	675905	#16FJIC TO #8MJIC
47	934850	HYD FAN MTR MNT
48	2406_12_08	12FJIC-8MJIC
49	600734	12MJIC-12MJIC-12MORB TEE

NOT SHOWN	934525TC	TRACTOR HARNESS
SEE PAGE 21	675331	FILTER ELEMENT

Parts List



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	******	675330 BOLT	1
2	******	675330 CANISTER	1
3	******	675330 COVER	1
4	******	675330 FILTER HEAD	1
5	******	675330 SPRING	1
6	675330OR-CAN	O-RING FOR ELEMENT CANISTER	1
7	675330ORC	O-RING FOR COVER AND HEAD	2
8	675330ORE	O-RING FOR ELEMNT	1
9	675331	675330 ELEMENT	1
	675330	675 FILTER ASSEMBLY	

PART NUMBER 675331 COMES WITH
A NEW ELEMENT SPRING AND 675330ORE

Product Offering

Fans

Spal
Multi-Wing

Fittings

Tompkins
Stucci
Ryco

Heat Exchangers

Thermal Transfer
Flat Plate
AKG

Hydraulic Motors

Eaton/Charlynn
Muncie
Permco
Hydro Leduc

PTO's

Muncie

Pumps

Muncie
Parker
Permco
Hydro Leduc

Notes

THERMAFLOW WARRANTY

The THERMAFLOW SS675 Series Hydraulic Cooler is warranted against any defect in material and workmanship which existed at the time of sale by APSCO according to the following provisions, subject to the requirements that the Cooler must be used only in accordance with the catalogue and package instructions.

The Cooler is warranted for a period of TWO Years from the date of installation. If during the warranty period the cooler fails to operate to APSCO's specifications due to a defect in any part in material or workmanship that existed at the time of sale by APSCO, the defective part will be repaired or replaced, at APSCO's discretion, at no charge, if the defective part is returned to APSCO with transportation prepaid.

The above warranty shall terminate if any alterations or repairs are made to the System other than at an authorized dealer or if the cooler is used on any equipment other than the equipment upon which it is first installed.

THE FORGOING WARRANTIES ARE IN LIEU OF ALL OTHER OBLIGATIONS AND LIABILITIES, INCLUDING NEGLIGENCE AND ALL WARRANTIES OF MERCHANTABILITY AND SUITABILITY, EXPRESSED OR IMPLIED AND STATE APSCO'S ENTIRE AND EXCLUSIVE LIABILITY AND BUYER'S EXCLUSIVE REMEDY FOR ANY CLAIM OF DAMAGES IN CONNECTION WITH THE SALE, REPAIR OR REPLACEMENT OF THE ABOVE GOODS, THEIR DESIGN, INSTALLATION OR OPERATION. APSCO WILL IN NO EVENT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES WHATSOEVER, AND OUR LIABILITY UNDER NO CIRCUMSTANCES WILL EXCEED THE CONTRACT PRICE FOR THE GOODS FOR WHICH LIABILITY IS CLAIMED.

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