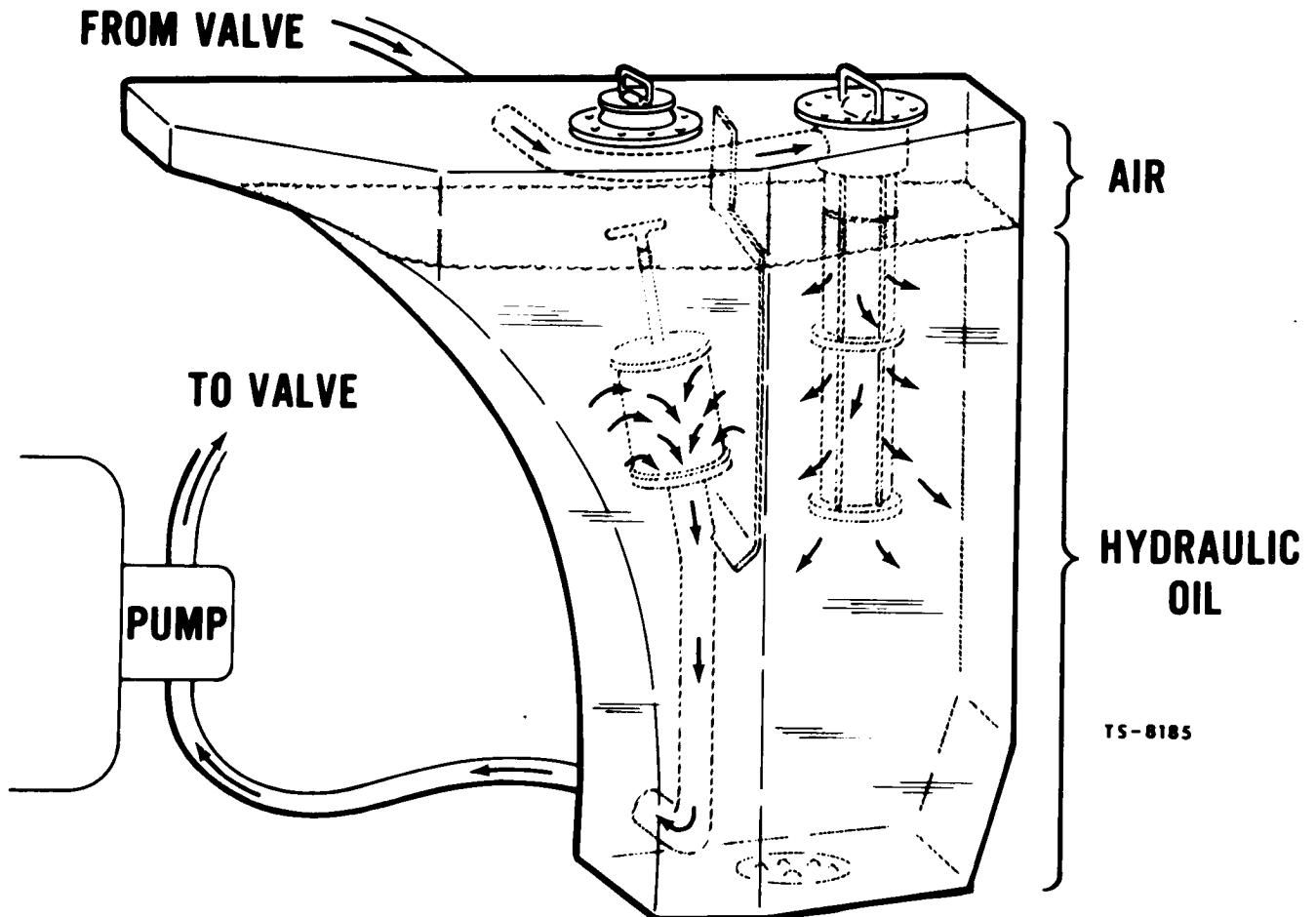


TS-8185

The hydraulic tank serves more than the one purpose of holding oil. The tank also houses main hydraulic suction and return filters. The tank is also equipped with baffles to restrict or direct oil movement in the tank to cut down on aeration of the oil and to be sure that hot return oil is not drawn directly into the suction tube. The tank is also designed large enough to help cool the oil and allow any contamination to drop to the bottom of the tank. The suction filter is located off the bottom of the tank so that contamination which has settled from the oil will not be drawn to the system. The return filter which may be located inside of the tank, will return the oil from the system below the tank level to prevent aeration of the oil.

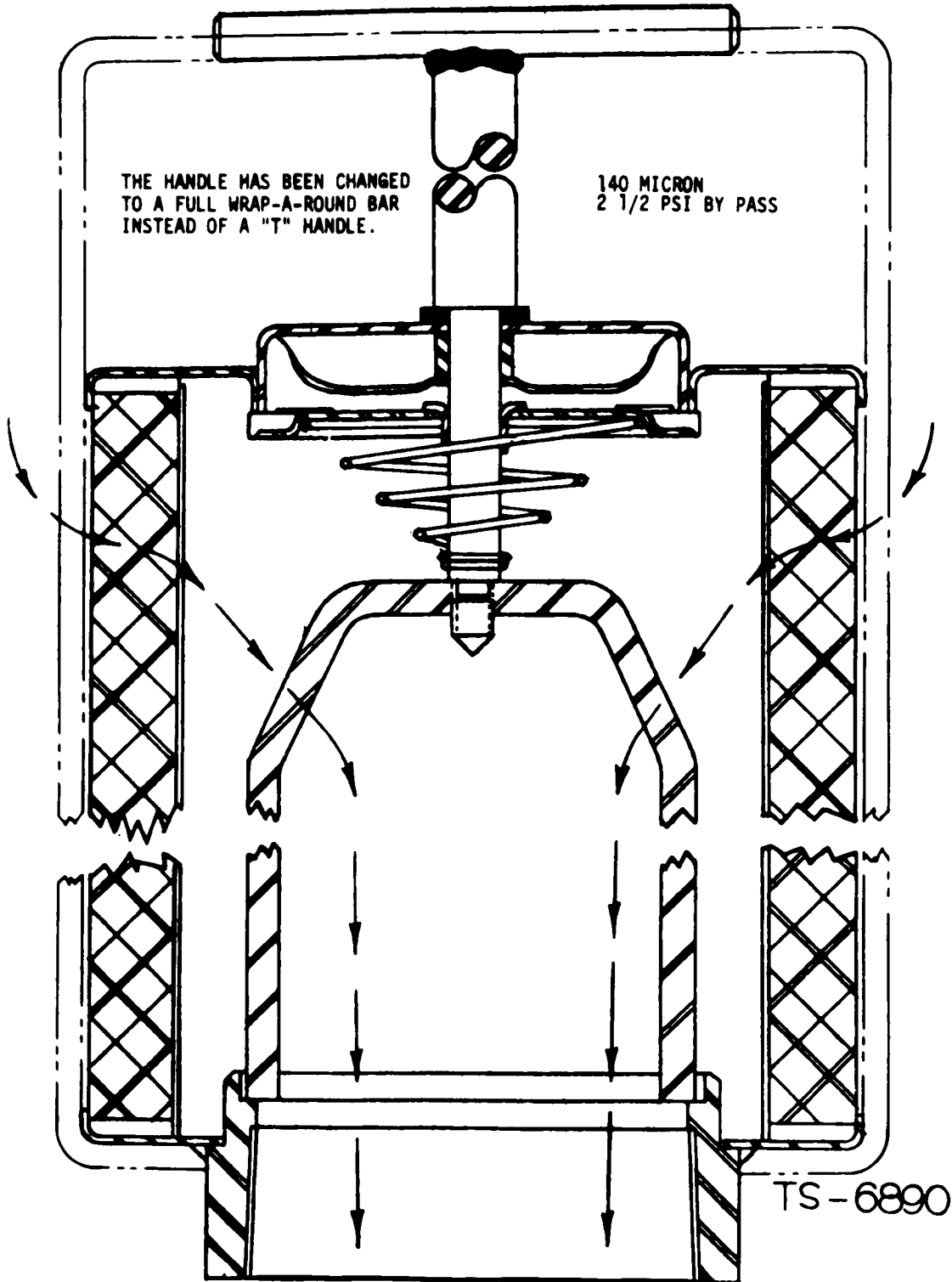
In most cases the tank is also pressurized for the following reasons:

1. To reduce the chance of dirt entering the reservoir. Dirt cannot enter the reservoir as easily because the pressure is forcing air out of the tank instead of drawing contamination into the system.
2. To pressurize the inlet port of the pump so that the pump does not have to pull the oil from the tank, thus reducing the chance of pump cavitation.
3. Pressurization also forces air bubbles from the oil.



TS-6890

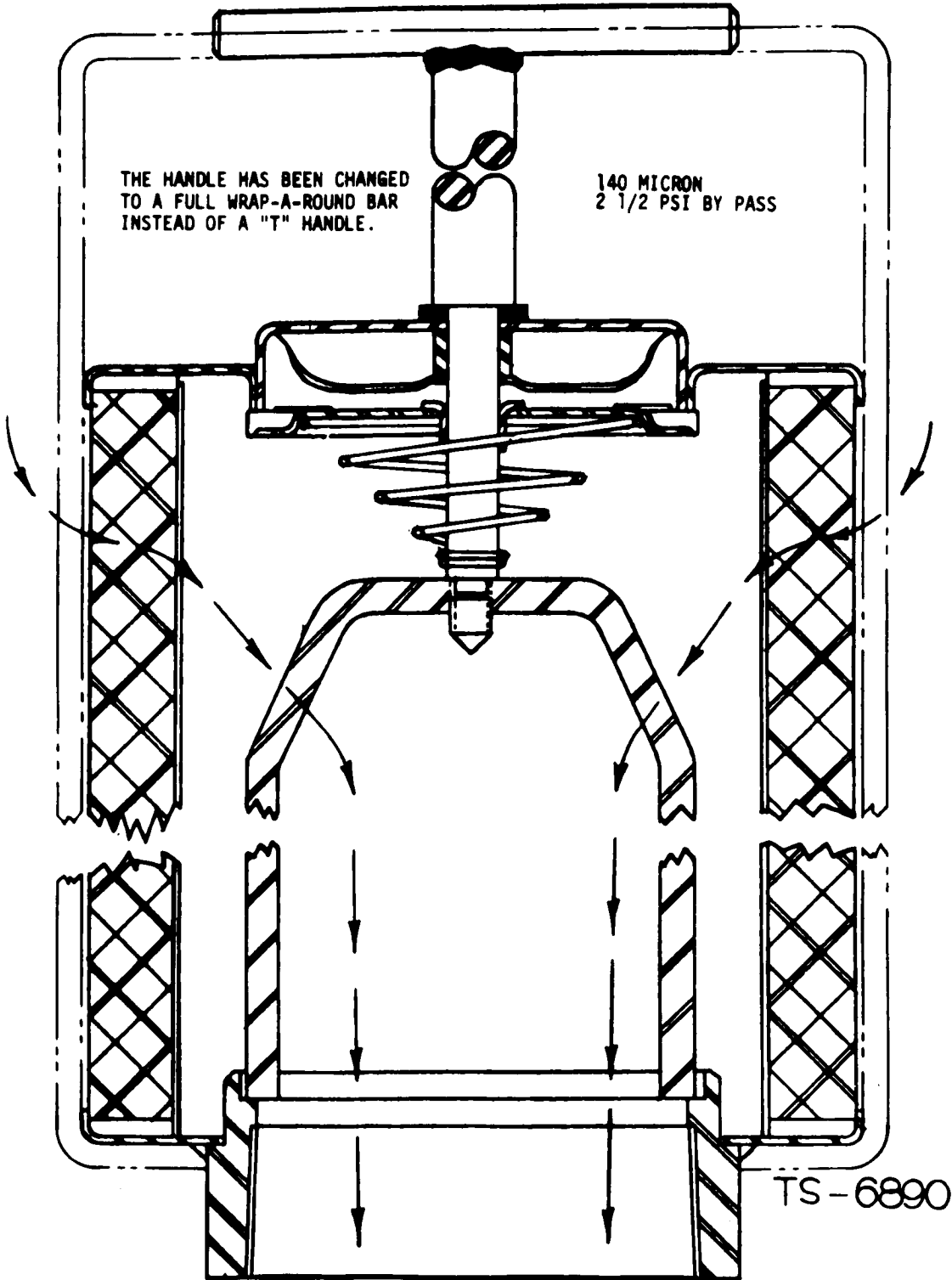
The suction filter is used to keep contamination from entering the hydraulic pumps. It is a wire mesh type cleanable filter with a very low by-pass setting. In case filter becomes plugged, the pump will not be starved for oil.



SUCTION FILTER

TS-6890

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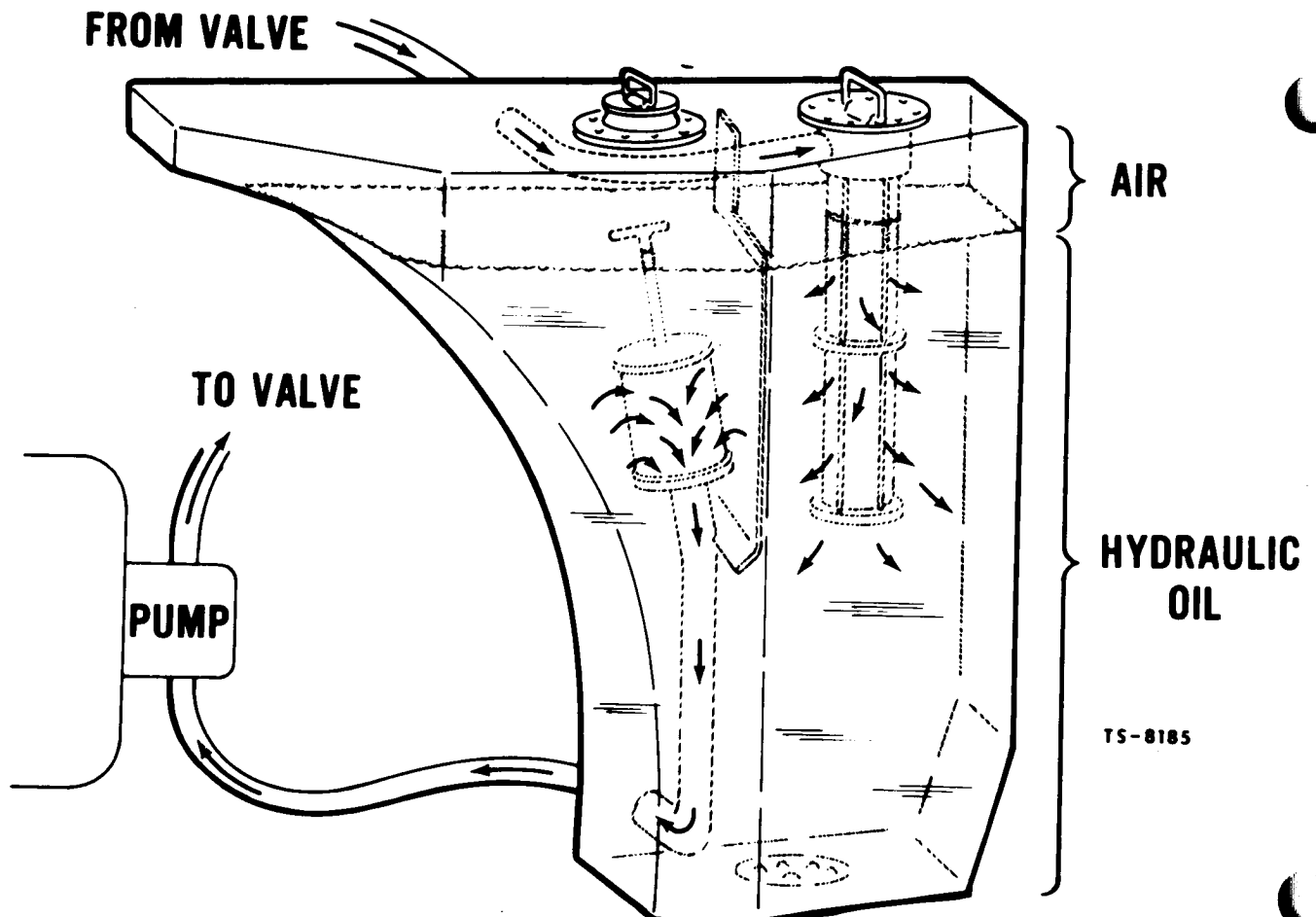
SUCTION FILTER

TS-8185

The hydraulic tank serves more than the one purpose of holding oil. The tank also houses main hydraulic suction and return filters. The tank is also equipped with baffles to restrict or direct oil movement in the tank to cut down on aeration of the oil and to be sure that hot return oil is not drawn directly into the suction tube. The tank is also designed large enough to help cool the oil and allow any contamination to drop to the bottom of the tank. The suction filter is located off the bottom of the tank so that contamination which has settled from the oil will not be drawn to the system. The return filter which may be located inside of the tank, will return the oil from the system below the tank level to prevent aeration of the oil.

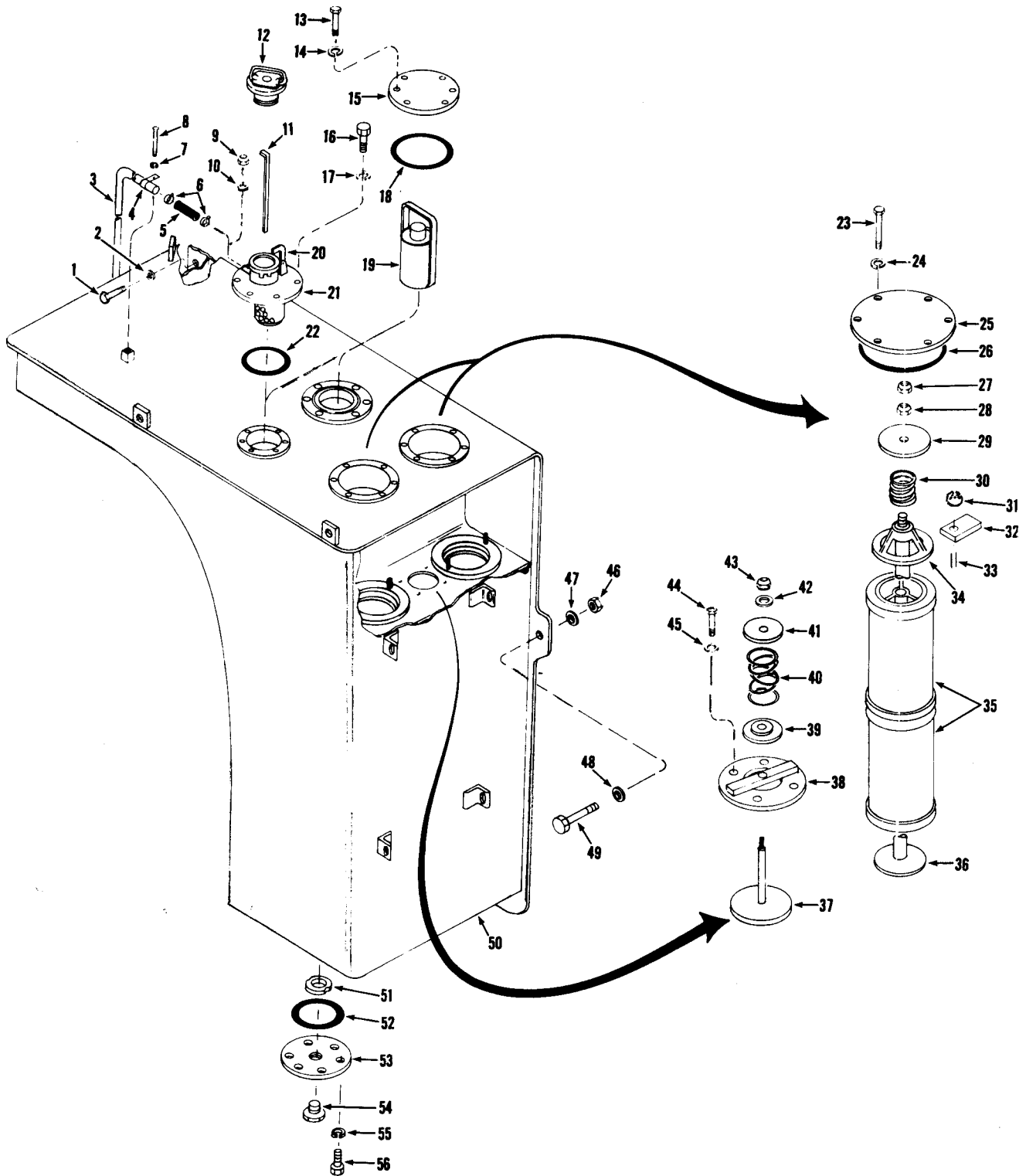
In most cases the tank is also pressurized for the following reasons:

1. To reduce the chance of dirt entering the reservoir. Dirt cannot enter the reservoir as easily because the pressure is forcing air out of the tank instead of drawing contamination into the system.
2. To pressurize the inlet port of the pump so that the pump does not have to pull the oil from the tank, thus reducing the chance of pump cavitation.
3. Pressurization also forces air bubbles from the oil.



TS-13299

This shows the new style reservoir with the external return filter by-pass relief valve.



CLARK

FORM 2385

FILTER CHART - MAIN HYDRAULIC
CURRENT PRODUCTS

<u>Model</u>	<u>Suction Strainer Micron Rating & Bypass Setting</u>	<u>Return Filter Micron Ratings Bypass Setting</u>	<u>Hydraulic Reservoir Cap Pressure Setting</u>
35C	None	10, 20-25 PSI	7 PSI
45C	None	10, 20-25 PSI	7 PSI
55C	None	10, 20-25 PSI	7 PSI
75C	None	10, 20-25 PSI	7 PSI
125C	None	10, 20-25 PSI	7 PSI
175C	None	10, 20-25 PSI	7 PSI
275C	None	10, 20-25 PSI	7 PSI
475C	None	10, 20-25 PSI	7 PSI
475CT	None	10, 20-25 PSI	7 PSI
675C	None	10, 20-25 PSI	7 PSI
280B	None	10, 20-25 PSI	7 PSI
380B	140, 2½ PSI	10, 20-25 PSI	7 PSI
664D	140, 3 PSI	10, 25 PSI	4 PSI
665D	140, 3 PSI	10, 25 PSI	4 PSI
666D	140, 3 PSI	10, 25 PSI	4 PSI
667D	140, 3 PSI	10, 25 PSI	4 PSI
668C	140, 3 PSI	10, 25 PSI	4 PSI



CLARK

Service gram

August 2, 1972

MICHIGAN SG-440
Group Ref. No. 1100

SUBJECT: Main Hydraulic Reservoir Return Filter Shield
Model 175B, 275B & 475-111A

An improvement change has been made on subject model machines consisting of the addition of a main hydraulic reservoir return filter shield to reduce the possibility of aeration of hydraulic oil. This change became effective on subject model machines shipped from the factory with the following serial numbers:

175B 427A214, 427A263, 427A271, 427A281, 427A283, 427A284, 427A288
and 427A295 & after

275B 425A187, 425B110, 425B129, 425B130, 425B132, 425B145, 425B147,
425B148, 425B151, 425B153, 425B154, 425B155, and 425B161
and after

475-111A 421F137, 421F139, 421F142, 421F143 and 429F149 and after

This improvement may be made on subject model machines in the field bearing serial numbers prior to those listed above, if desired, by using parts listed below and installing same in accordance with the following instructions.

PARTS REQUIRED (per machine):

175B 1 - 1518945 Filter Shield
275B 1 - 1518945 Filter Shield
475-111A 2 - 1518945 Filter Shield

INSTALLATION:

1. With engine shut down and bucket resting on ground, loosen reservoir cap slowly and actuate boom and bucket levers several times to relieve pressure in system.

CAUTION: This is a gas pressurized system with accumulator. Do not attempt to remove any hydraulic system parts before Step 1 has been performed.

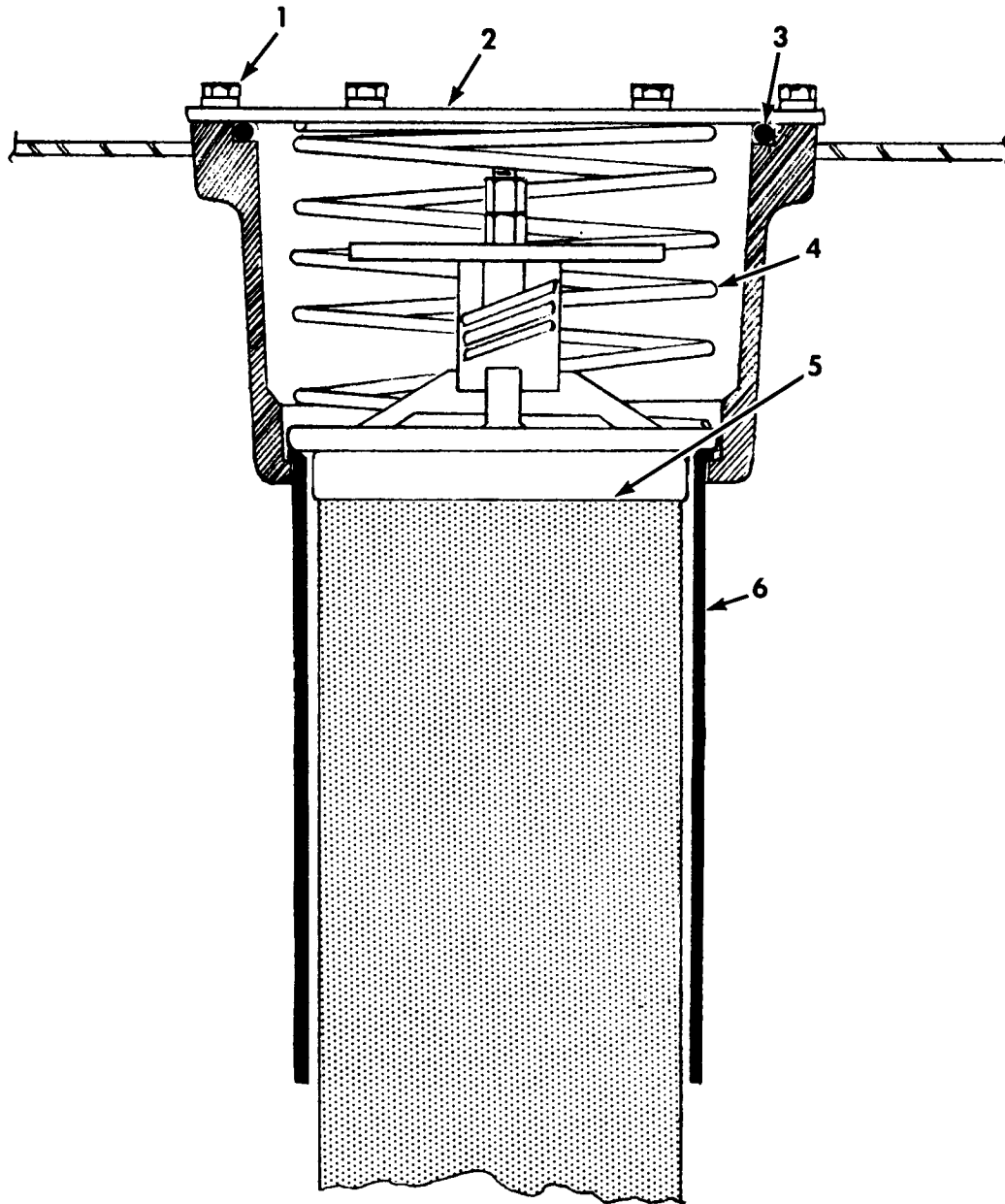
2. Refer to Figure 1 and remove bolts, cover plate(s), o-ring(s), spring(s) and return filter assemblies from reservoir.
3. Insert 1518945 Filter Shield(s) and reinstall filter assemblies, spring(s), o-ring(s), cover plate(s) and tighten mounting bolts.
4. Tighten reservoir cap.

ED-53972
SPR-50272
DW

SG-440

(4C7)

Printed in U.S.A.



TS-11689 B

Figure 1

- | | | |
|----------------|-----------|------------------|
| 1. Bolts | 3. O-Ring | 5. Filter Assy |
| 2. Cover Plate | 4. Spring | 6. Filter Shield |

CLARK

Service gram

July 1982

MICHIGAN SG - 750C
Group Ref. No. 1100
1200

(This bulletin replaces SG-750B, dated Nov. 1981. REASON: To add a filter retainer to be used on Model 45B Wheel Loader with SN: 4189A and 4221D)

SUBJECT: Improved Main Hydraulic Reservoir Return Filters
Model 45B,55B,75B,125B,175B,275B,475B and
675B Wheel Loaders
Model 280IIIA and 380IIIA Wheel Dozers

An improved hydraulic reservoir return filter (Part No. 2515079) can be installed on machines listed above replacing the existing return filter (Part No. 1530600). The new filter cleans the hydraulic fluid with 10 TIMES GREATER EFFICIENCY than the filters previously used.

Clean hydraulic fluid will greatly increase the service life of the hydraulic system components, especially the pumps.

The service interval for the 2515079 Filter is every **500 operating hours**.

The by-pass pressure for the new filter is 20 PSI (137,9 kPa). This higher pressure decreases the possibility of fluid contamination.

The use of the new return filter will allow the drain interval of the main hydraulic reservoir to be increased to **2000 operating hours**.

NOTE: *If the machine is being operated under a Clark approved fluid analysis program (See MICHIGAN Service Gram SG-886A), the hydraulic system fluid drain interval could be extended beyond the 2000 operating hour interval. This will have to be determined by the fluid analysis.*

The new return filter can be installed on machines with serial numbers listed below:


MODEL	SERIAL NUMBER
45B	Cummins 437A101 thru 999 GM 450A101 thru 999 Perkins 4189A,C,D101 thru 999, 4221D101 thru 999
55B	Cummins 433B101CAC thru 800CAC, 101FSC thru 584FSC GM 416C101 thru 1085CAC, 101FSC thru 244FSC
75B	Cummins 428A101 thru 999, 443A101 thru 999 443C101CAC thru 165CAC, 101CB thru 112CB, 101FSC thru 159FSC GM 435A101 thru 999, 447A101 thru 999, 101CAC thru 276CAC, 101CB thru 114CB, 101FSC thru 111FSC

MODEL	SERIAL NUMBER
125B	Cummins 439A101 thru 999, 439B101CAC thru 194CAC, 101CB thru 321CB, 101FSC thru 170FSC GM 441A101 thru 999, 441B101CAC thru 265CAC, 101CB thru 334CB
175B	Cummins 438A101 thru 999, 438B101ENC thru 999ENC, 101FSC thru 999FSC, 438C101C thru 315C, 101CAC thru 255CAC, 101FSC thru 155FSC GM 427A101 thru 999, 427B101 thru 999, 101ENC thru 999ENC, 101FSC thru 999FSC, 427C101C thru 307C, 101CAC thru 235CAC, 101FSC thru 114FSC
275B	Cummins 425A101 thru 999, 425C101 thru 513C, 101CAC thru 483CAC, 101FSC thru 222FSC
475B	Cummins 421G101 thru 999, 421H102C thru 223C, 102CAC thru 182CAC
675B	ALL Machines
280IIIA	Cummins 8AMC101 thru 999, 456B101C thru 173C GM 9AMG101 thru 999, 460C101C thru 142C 460C101FSC thru 116FSC
380IIIA	Cummins 418A,B,C,D101 thru 999, 418E101K thru 127K GM 434A101 thru 999, 434B101K thru 111K

PARTS LIST FOR ONE MACHINE:

45B		55B and 75B	
1 - 2515079	Filter Element	1 - 2515079	Filter Element
1 - 2518855	Decal	1 - 2511650	Spring
1 - 2528892	Filter Retainer - use only on machines with S/N 4189A & 4221D	1 - 3900366	Washer
		1 - 2518135	Washer and Guide Rod Assy.
1 - 2528895	Gasket - use only on machines with S/N 4189A & 4221D	1 - 2518855	Decal
		1 - 2518135	Washer and Guide Rod Assy.
125B (with S/N 439A and 441A)		125B (with S/N 439B,439C,441B,441C)	
2 - 2515079	Filter Element	2 - 2515079	Filter Element
1 - 2511650	Spring	1 - 2511650	Spring
1 - 3900366	Washer	1 - 3900366	Washer
1 - 2517207	Washer and Guide Rod Assy.	1 - 2518855	Decal
1 - 2518855	Decal		
175B		275B, 475B, 675B	
4 - 2515079	Filter Element	4 - 2515079	Filter Element
2 - 2511650	Spring	2 - 2517207	Washer and Guide Rod Assy.
2 - 3900366	Washer	2 - 2511650	Spring
1 - 2518855	Decal	2 - 3900366	Washer
		1 - 2518855	Decal
280IIIA and 380IIIA			
2 - 2515079	Filter Element	1 - 2511650	Spring
1 - 3900366	Washer	1 - 2517207	Washer and Guide Rod Assy.
1 - 2518855	Decal		

INSTALLATION:

1. Put the machine on a level surface.
2. Put the machine in the 'SERVICE' position: Bucket or blade on the ground, parking brake applied, engine stopped, ignition key removed, red warning flag on steering wheel, safety link connected, wheels blocked.
3.  Let the machine become cool. Remove the cap from the main hydraulic reservoir **slowly** to remove the pressure from the reservoir.
4. Remove the reservoir return filter covers and remove the existing filter assemblies. Discard the filter elements. Discard the existing washer and guide rod assemblies when a new washer and guide rod is used. Discard the existing relief spring if a new spring is to be used.
5. Install the new 2515079 Filter(s) into the reservoir using a 3900366 Washer and a new washer and guide rod assembly if necessary. Replace the existing relief spring(s) with new 2511650 Springs at this time, if necessary.
6. Install 1 - new 2518855 Decal on the upper front face of the reservoir.
7. Install the cap on the reservoir. Remove warning flag from steering wheel. Disconnect safety link. Remove blocks from wheels.

FILTER EFFICIENCY

