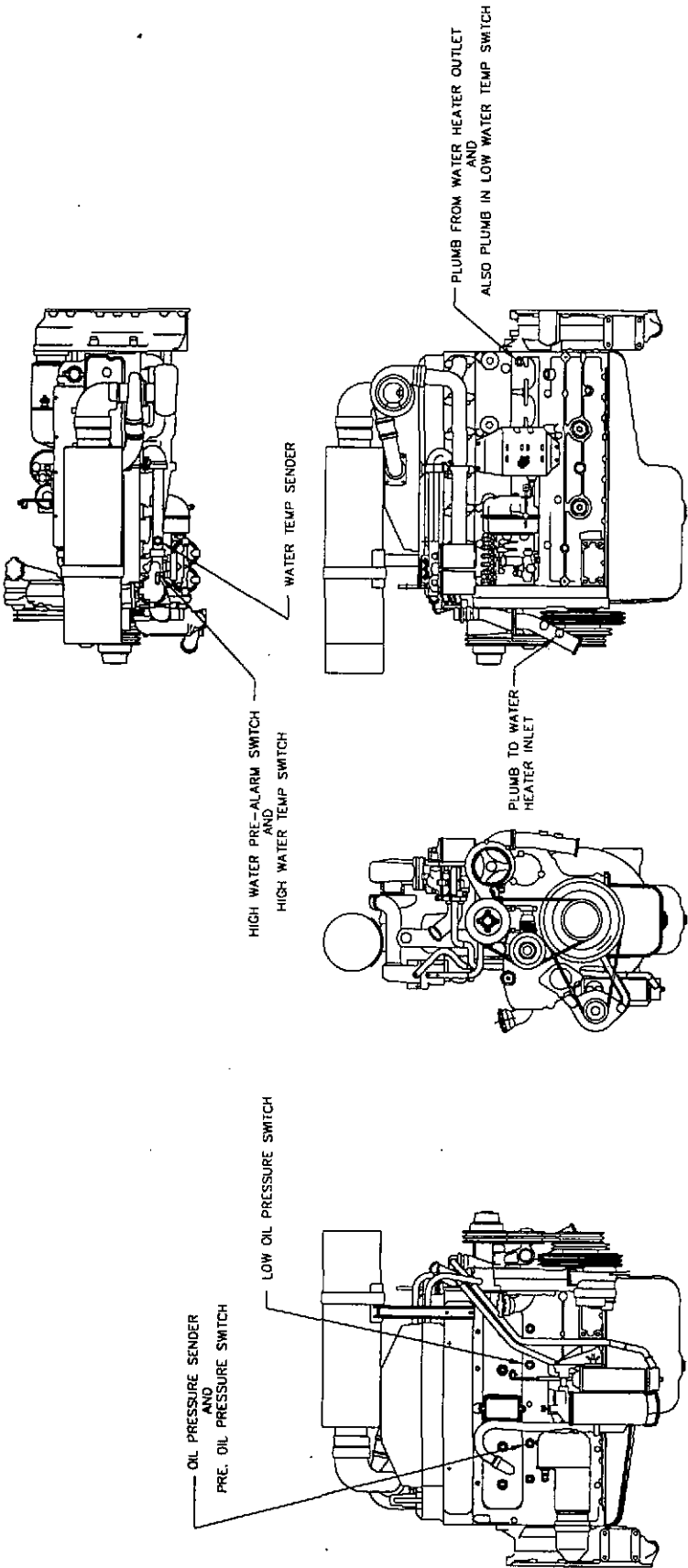
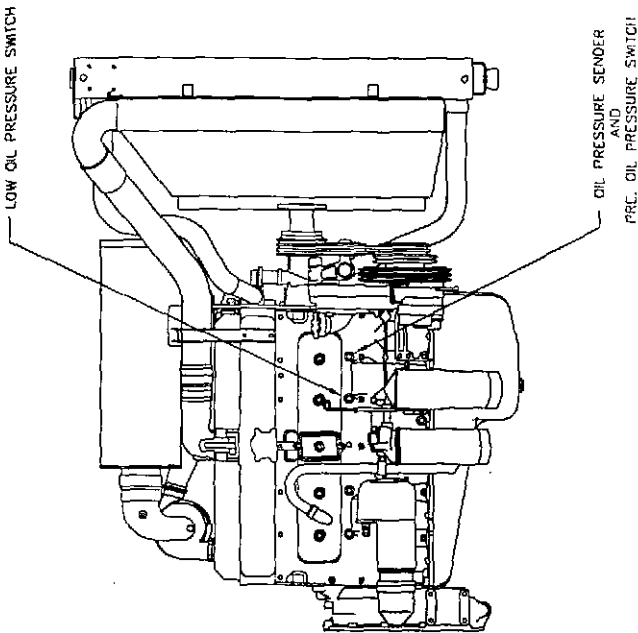
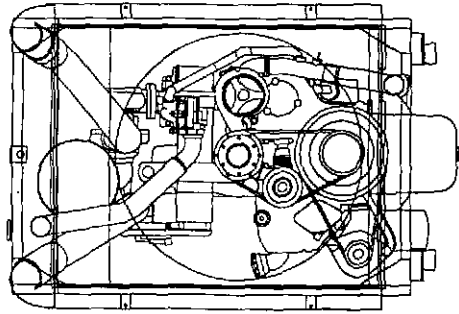
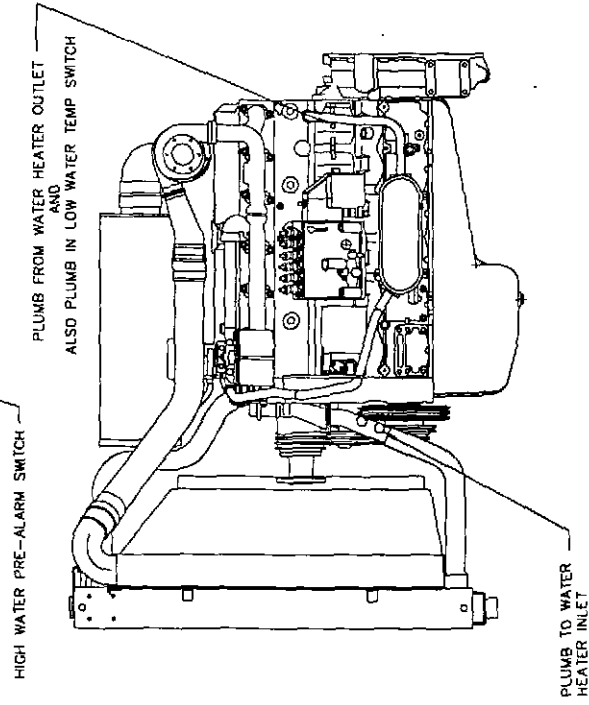
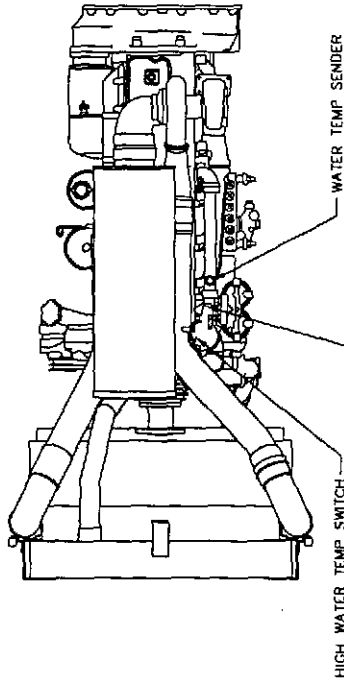


VOLVO
SENSOR &
SWITCH
LOCATIONS



KATOLIGHT
MANKATO, MINNESOTA

TWD610G WATER HEATER PLUMBING & SENDER LOCATIONS	
SIZE	DWG NO
B	F:\DWG\ENGINE\TWD610G
SCALE	PART NO
NONE	DWG BY LJS
	SHEET 1 OF 1



KATOLIGHT

MANKATO, MINNESOTA

TAD730G WATER HEATER PLUMBING & SENDER LOCATIONS

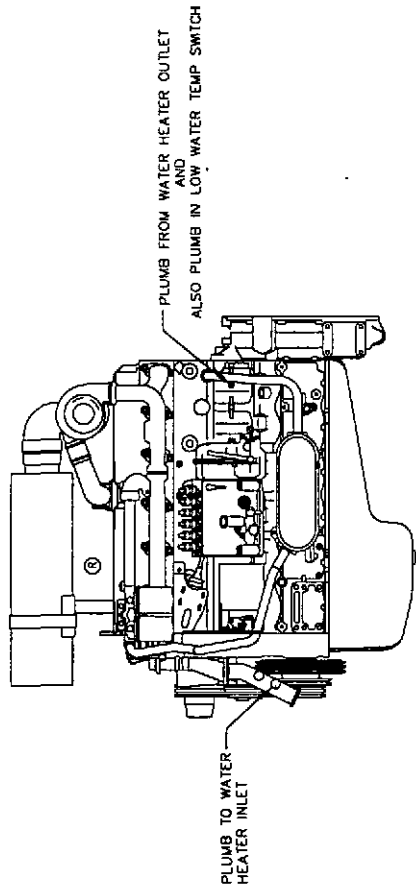
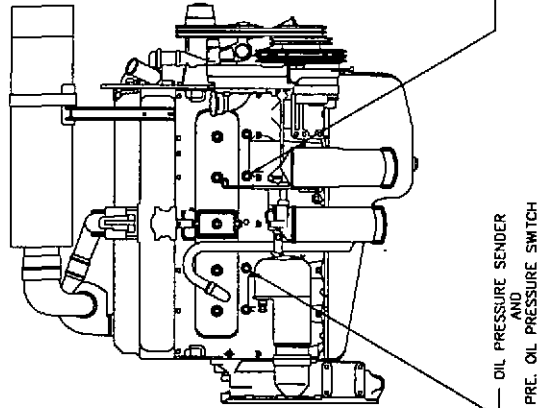
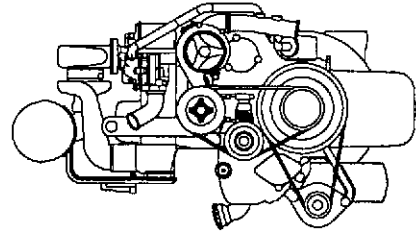
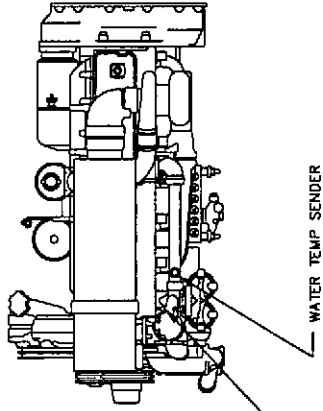
SIZE DATE DWG NO F:\DWG\ENGINE\TAD730G

B 9-8-98

SCALE NONE PART NO

DRAWN BY LJS SHEET 1 OF 1

REVISION: 1. MOVED WATER INLET AND OUTLET LOCATION 9-16-98 LJS



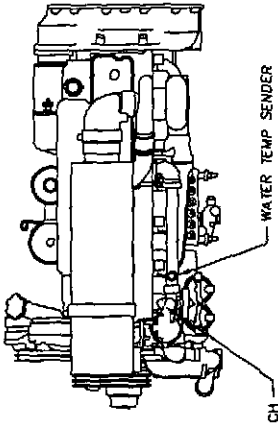
KATOLIGHT

MINNETONKA, MINNESOTA

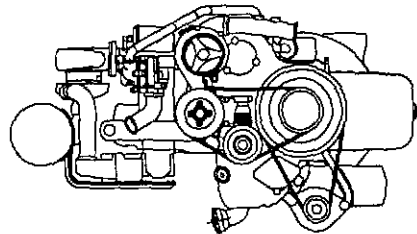
TD710G WATER HEATER PLUMBING & SENDER LOCATIONS

SIZE CAT. 9-8-98 DWG NO. F:\DWG\ENGINE\TD710G

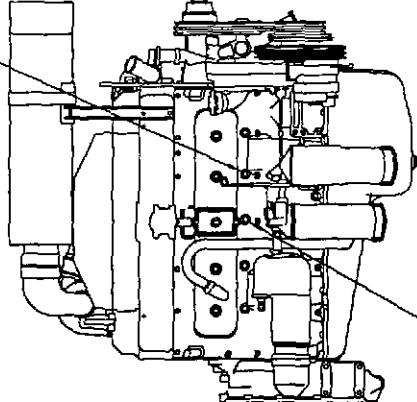
SCALE NONE PART NO. DWN BY LJS SHEET 1 OF 1



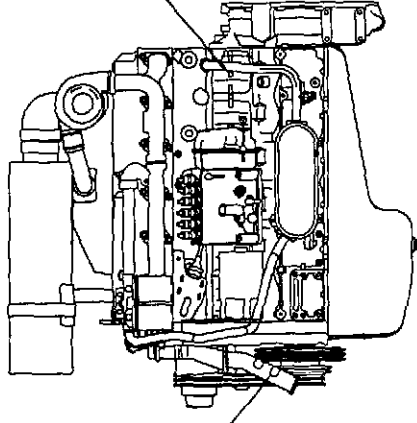
— WATER TEMP SENDER
 HIGH WATER PRE-ALARM SWITCH
 AND
 HIGH WATER TEMP SWITCH



— LOW OIL PRESSURE SWITCH



— OIL PRESSURE SENDER
 AND
 PRE. OIL PRESSURE SWITCH



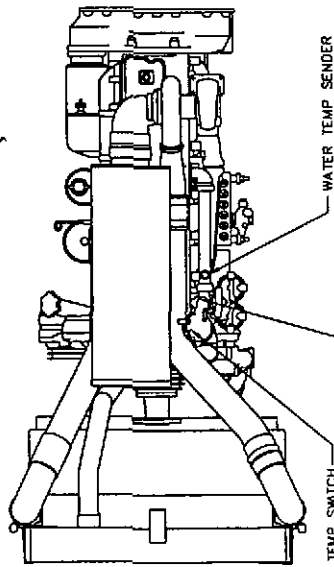
PLUMB FROM WATER HEATER OUTLET
 AND
 ALSO PLUMB IN LOW WATER TEMP SWITCH

PLUMB TO WATER
 HEATER INLET

KATOLIGHT
 MINNAPTO, MINNESOTA

TWD710G WATER HEATER PLUMBING & SENDER LOCATIONS

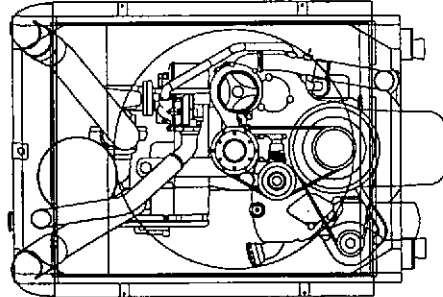
SIZE	DATE	DWG NO	F:\DWG\ENGINE\TWD710G
B	9-8-98		
SCALE	NONE	PART NO	DWP BY LJS SHEET 1 OF 1



WATER TEMP SENDER

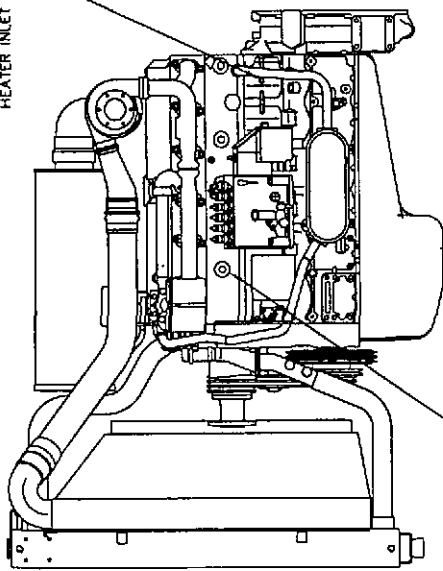
HIGH WATER TEMP SWITCH

LOW OIL PRESSURE SWITCH



OIL PRESSURE SENDER AND PRE. OIL PRESSURE SWITCH

PLUMB TO WATER HEATER INLET



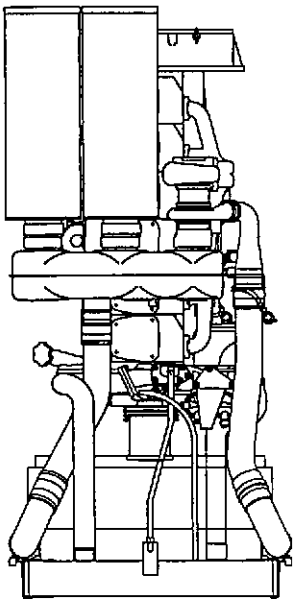
PLUMB FROM WATER HEATER OUTLET AND ALSO PLUMB IN LOW WATER TEMP SWITCH

KATOLIGHT

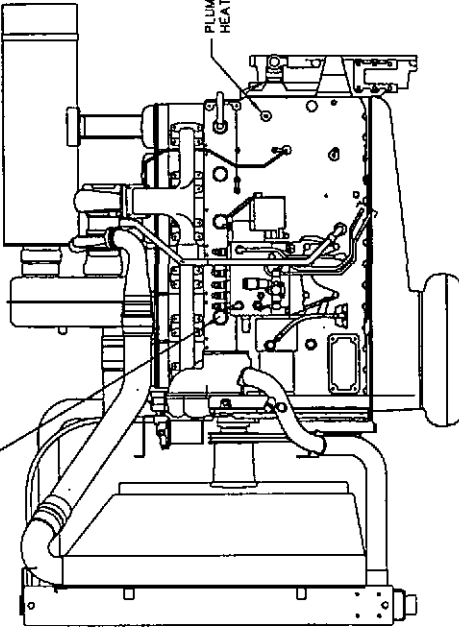
WANKATO, MINNESOTA

TAD730G WATER HEATER PLUMBING & SENDER LOCATIONS

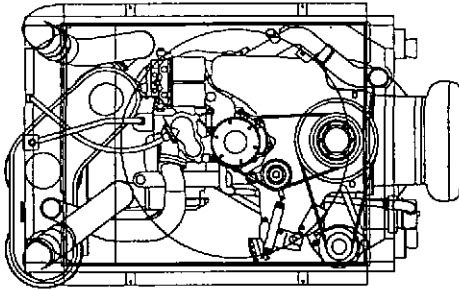
SIZE	DATE	DWG NO	OWN BY	SHEET
B	9-8-98	F:\DWG\ENGINE\TAD730G	LJS	1 OF 1
SCALE	NONE	PART NO		



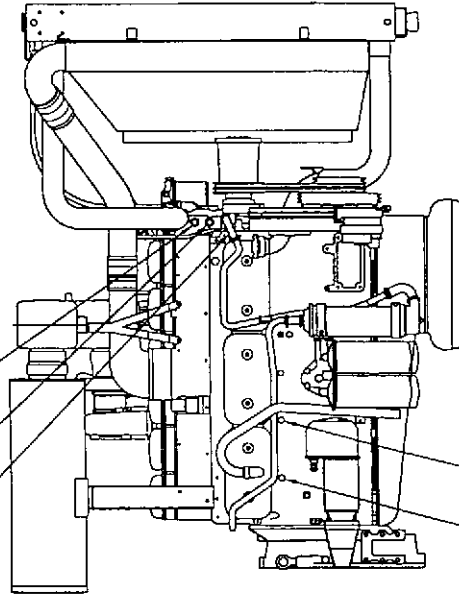
PLUMB FROM WATER HEATER OUTLET
AND
ALSO PLUMB IN LOW WATER TEMP SWITCH



PLUMB TO WATER
HEATER INLET



WATER TEMP SENDER
HIGH WATER PRE-ALARM SWITCH
HIGH WATER TEMP SWITCH



OIL PRESSURE SENDER
AND
PRE. OIL PRESSURE SWITCH

LOW OIL PRESSURE SWITCH

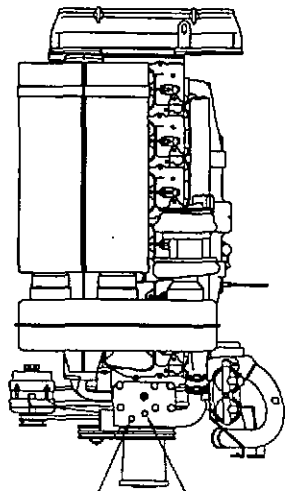
KATOLIGHT

HANKATO, MINNESOTA

TAD1030CE WATER HEATER PLUMBING & SENDER LOCATIONS

SIZE DATE 9-8-98 DWG NO F:\DWG\ENGINE\TAD1030CE

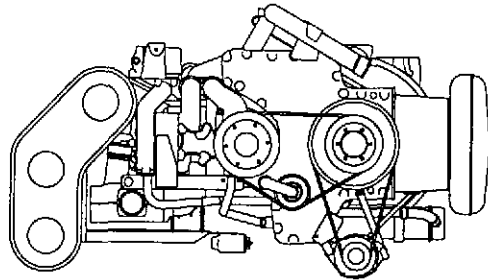
SCALE NONE PART NO DWN BY LJS SHEET 1 OF 1



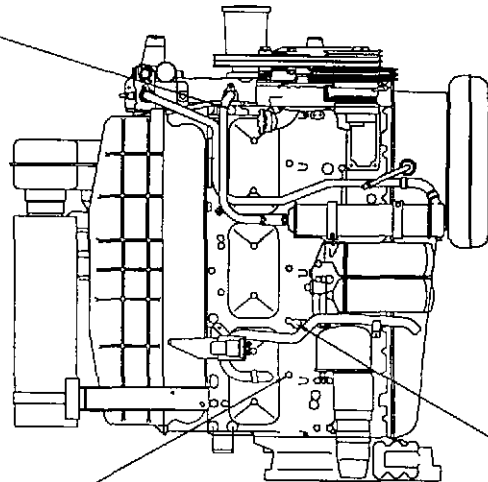
HIGH WATER TEMP SWITCH

HIGH WATER PRE-ALARM SWITCH

PLUMB FROM WATER HEATER OUTLET AND ALSO PLUMB IN LOW WATER TEMP SWITCH



WATER TEMP SENDER



LOW OIL PRESSURE SWITCH

OIL PRESSURE SENDER AND PRE. OIL PRESSURE SWITCH

PLUMB TO WATER HEATER INLET

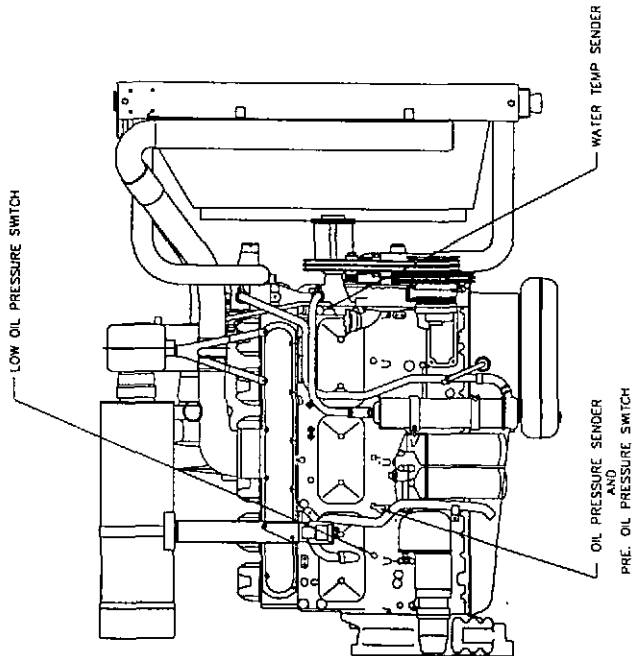
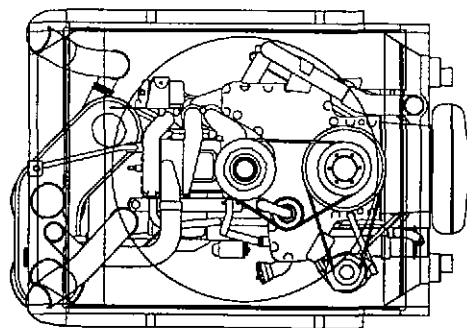
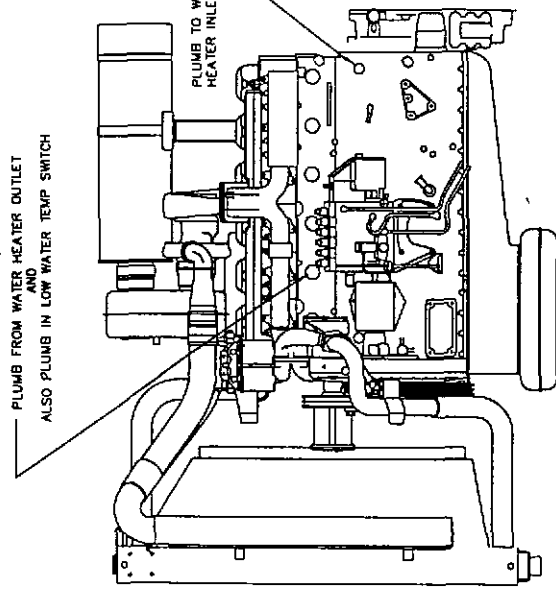
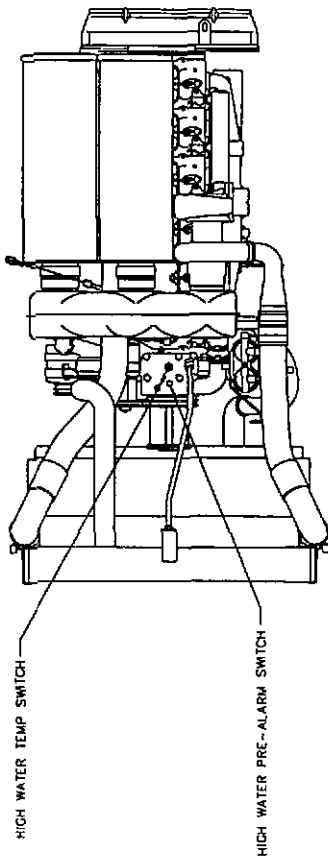
KATOLIGHT

MANKATO, MINNESOTA

TWD1211G WATER HEATER PLUMBING & SENDER LOCATIONS

DATE: 9-8-98 DWG NO: F:\DWG\ENGINE\TWD1211G

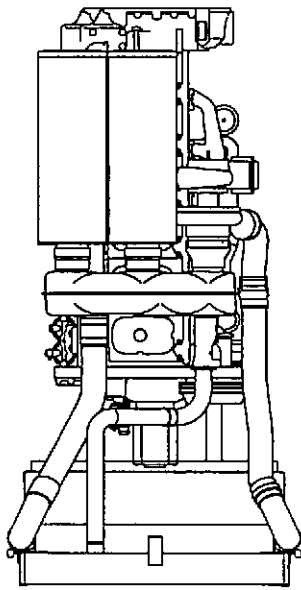
SCALE: NONE PART NO: DWN BY: LJS SHEET 1 OF 1



KATOLIGHT
MANKATO, MINNESOTA

TAD1232CE WATER HEATER PLUMBING & SENDER LOCATIONS	
SIZE	DWG NO
B	F:\DWG\ENGINE\TAD1232CE
DATE	9-8-98
SCALE	NONE
DRAWN BY	LJS
SHEET	1 OF 1

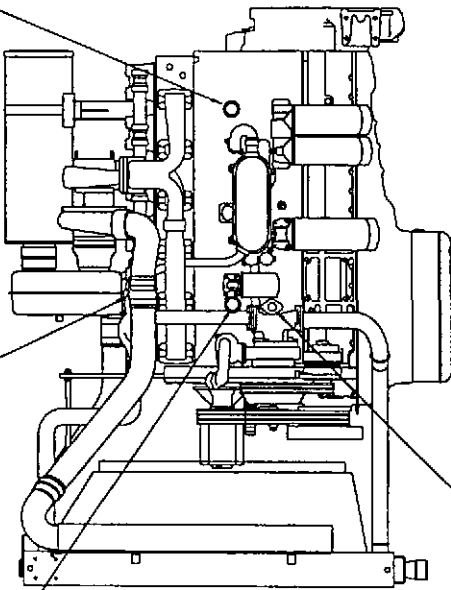
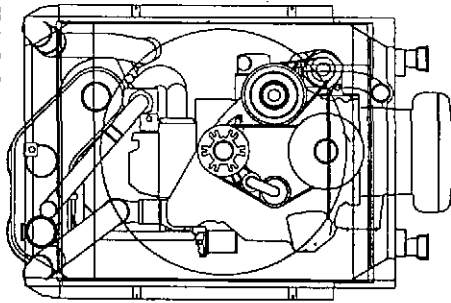
< IF PRE-SHUTDOWN IS REQUIRED >
 NOTE: IF PRE-SHUTDOWN IS REQUIRED KATOLIGHT WILL
 HAVE TO REMOVE SHUTDOWN FURNISHED BY VOLVO
 AND ADD A KATOLIGHTS BULB SHUTDOWN



WATER TEMP SENDER
 AND
 HIGH WATER TEMP SWITCH
 AND
 HIGH WATER PRE-ALARM SWITCH

PLUMB FROM WATER HEATER OUTLET
 ALSO PLUMB IN LOW WATER TEMP SWITCH

PLUMB TO WATER
 HEATER INLET



OIL PRESSURE SENDER
 AND
 PRE. OIL PRESSURE SWITCH
 AND
 LOW OIL PRESSURE SWITCH

KATOLIGHT

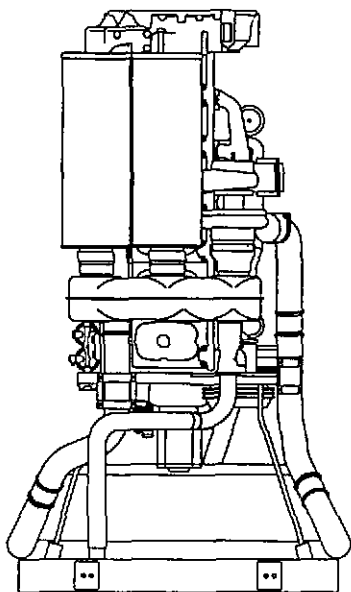
MINNETONKA, MINNESOTA

TAD1630GE AND TWD1630GEG
 WATER HEATER PLUMBING & SENDER LOCATIONS

SIZE (DIN) B 9-8-98 DWG NO. F:\DWG\ENGINE\TAD1630GE

SCALE NONE PART NO. DWG BY LJS SHEET 1 OF 1

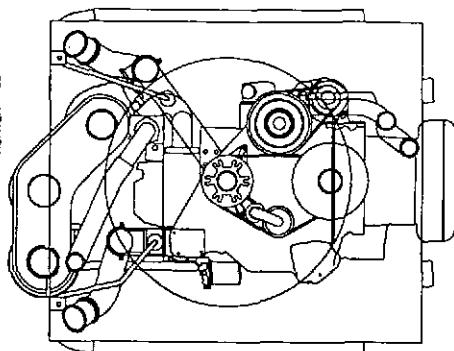
(IF PRE-SHUTDOWN IS REQUIRED)
 NOTE: IF PRE-SHUTDOWN IS REQUIRED KATOLIGHT WILL
 HAVE TO REMOVE SHUTDOWN FURNISHED BY VOLVO
 AND ADD A KATOLIGHTS DUAL SHUTDOWN



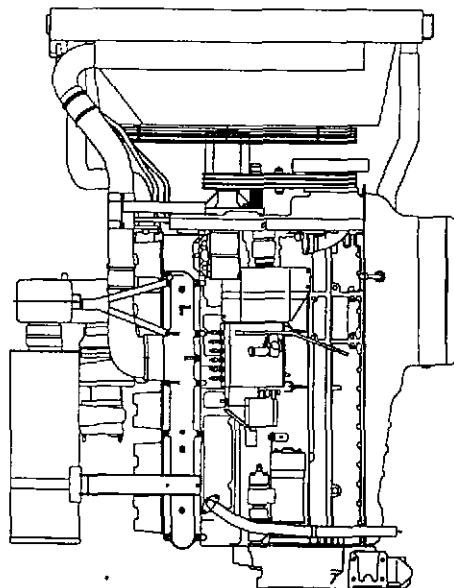
PLUMB FROM WATER HEATER OUTLET
 AND
 ALSO PLUMB IN LOW WATER TEMP SWITCH

WATER TEMP SENDER
 AND
 HIGH WATER TEMP SWITCH
 AND
 HIGH WATER PRE-ALARM SWITCH

PLUMB TO WATER
 HEATER INLET



OIL PRESSURE SENDER
 AND
 PRE. OIL PRESSURE SWITCH
 AND
 LOW OIL PRESSURE SWITCH



KATOLIGHT

MINNETONKA, MINNESOTA

TAD1631GE

WATER HEATER PLUMBING & SENDER LOCATIONS

SIZE 6

DATE 9-8-98

DWG NO.

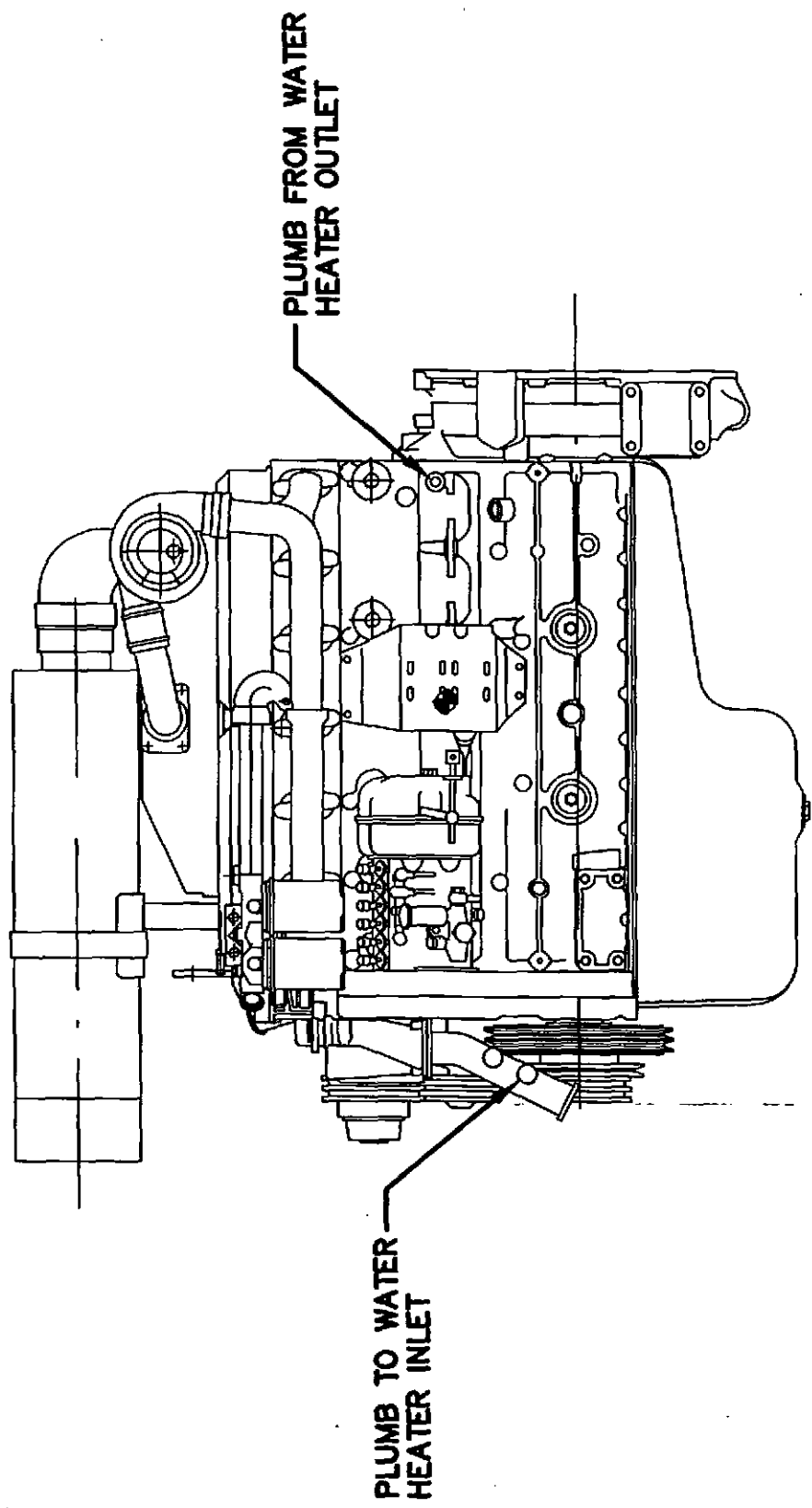
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SCALE NONE

PART NO.

DWN BY LJS

SHEET 1 OF 1

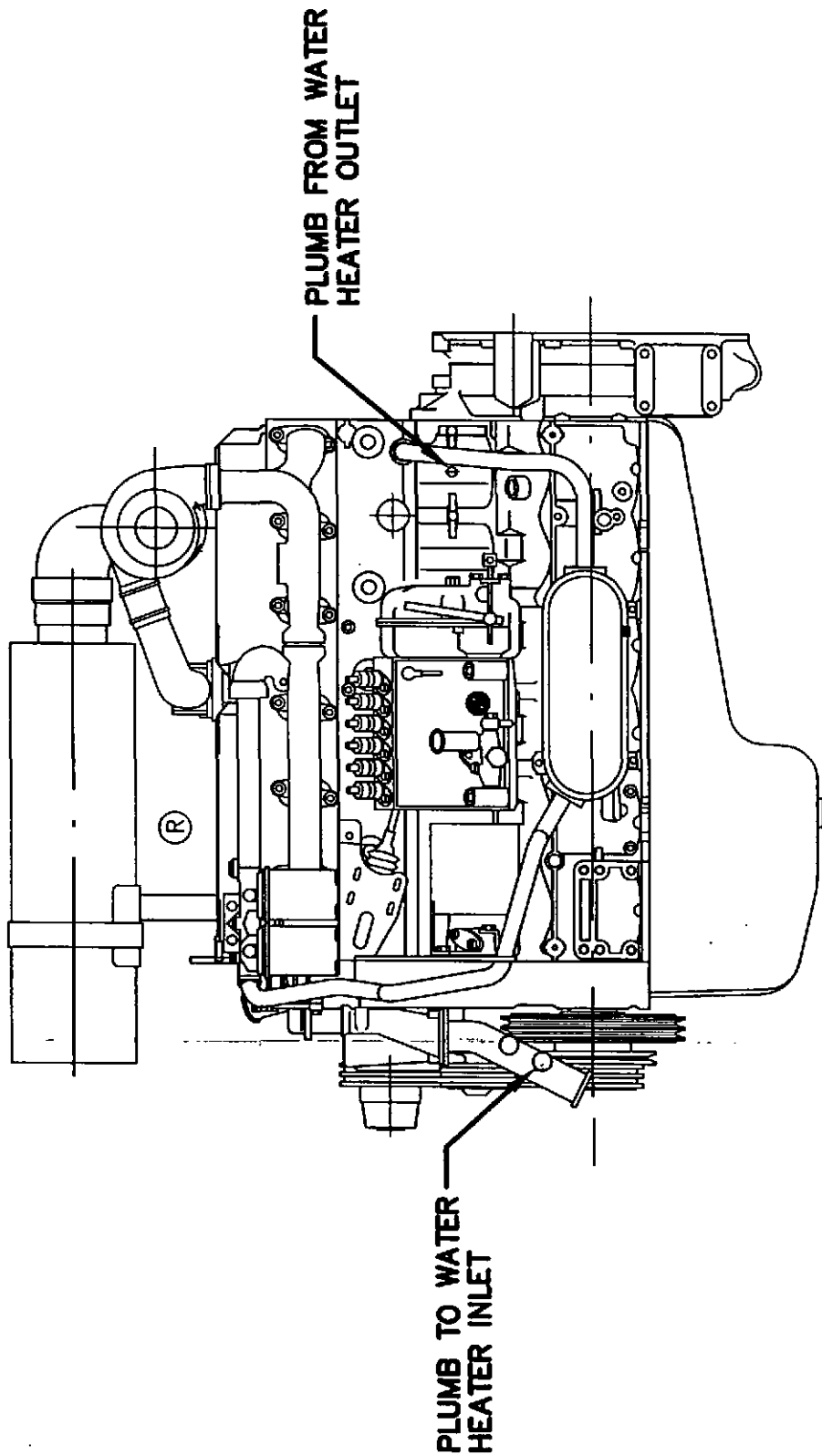


KATOLIGHT

MANKATO, MINNESOTA

WATER HEATER PLUMBING LOCATIONS

SIZE	DATE	DWG NO	F:\DWG\ENGINE\TWD610G
A	7-29-98		
SCALE	NONE	PART NO	DWN BY LJS SHEET 1 OF 1



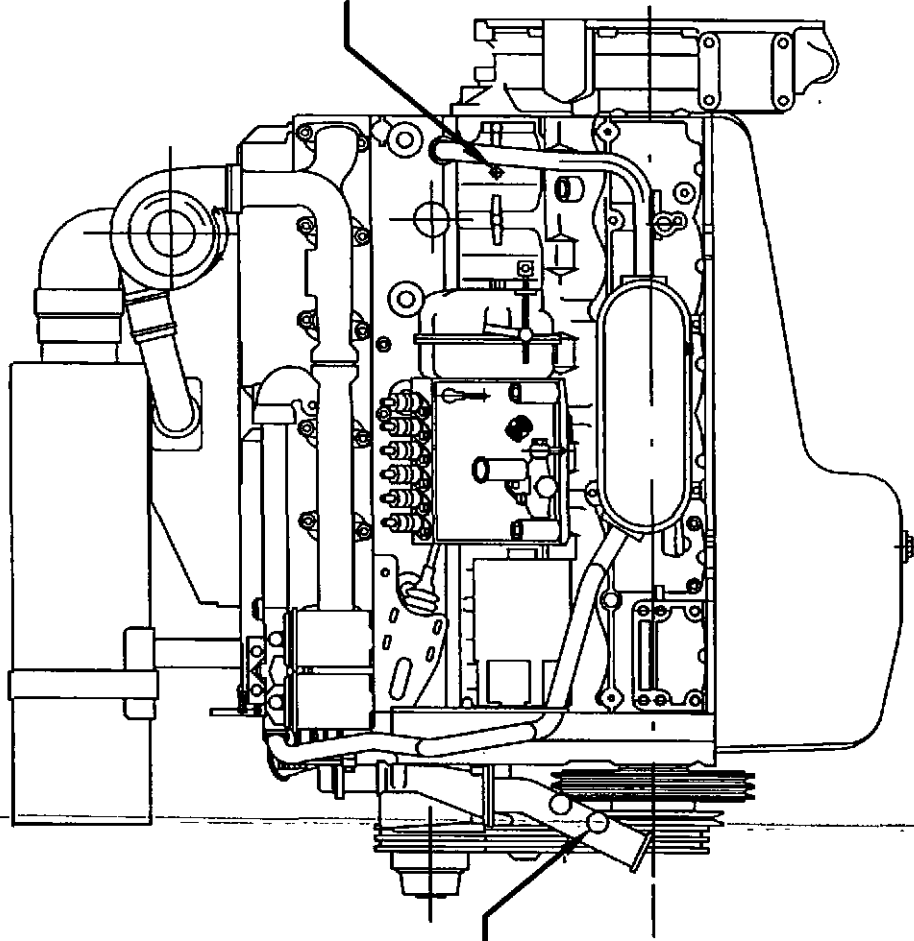
KATOLIGHT

MANKATO, MINNESOTA

WATER HEATER PLUMBING LOCATIONS

SIZE	DATE	DWG NO	F:\DWG\ENGINE\TD710G
A	7-29-98		

SCALE	NONE	PART NO	DWN BY LJS	SHEET 1 OF 1
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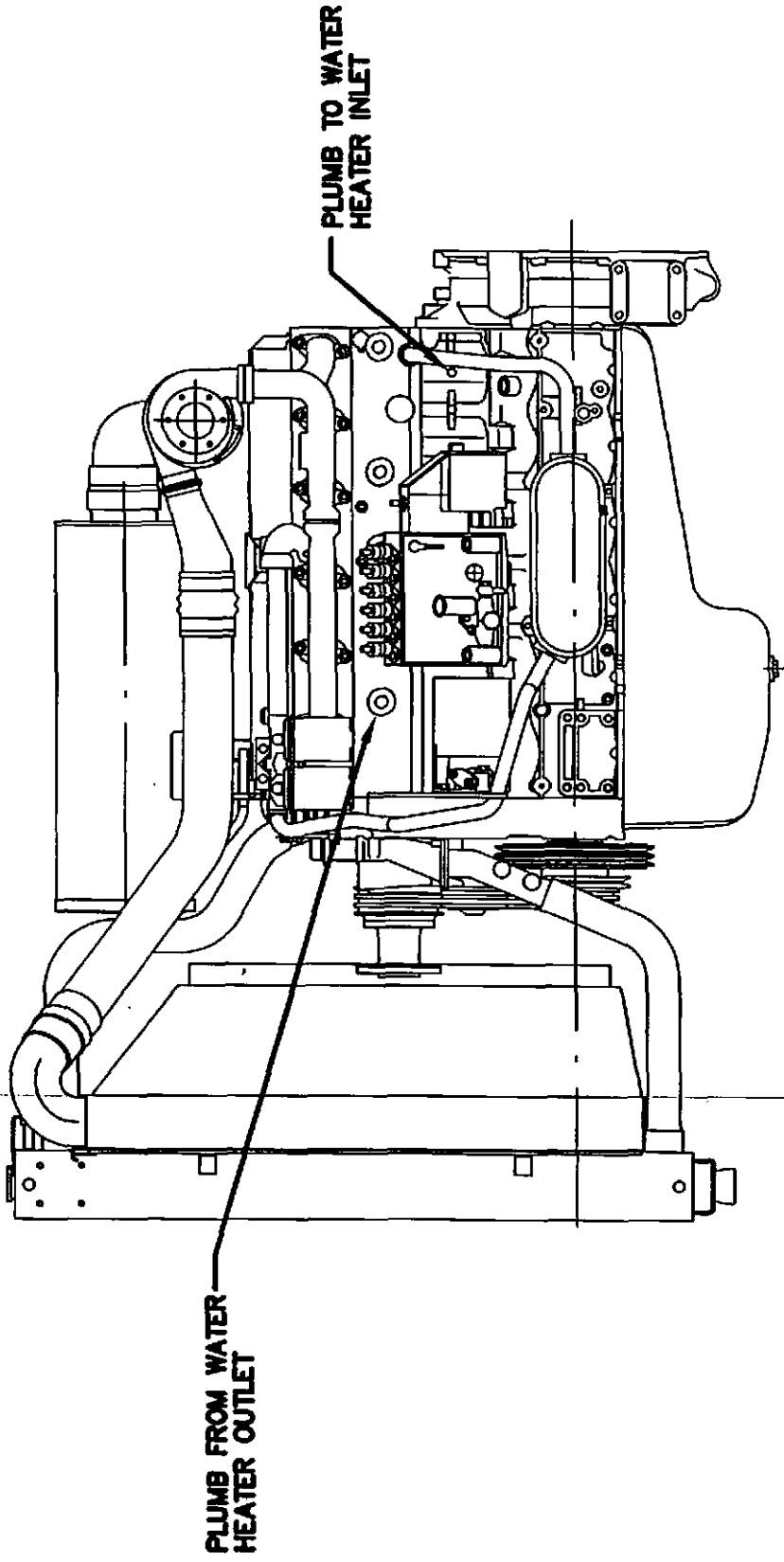


KATOLIGHT

MANKATO, MINNESOTA

WATER HEATER PLUMBING LOCATIONS

SIZE	DATE	DWG NO	F:\DWG\ENGINE\TWD710G
A	7-29-98		
SCALE	NONE	PART NO	DWN BY LJS SHEET 1 OF 1



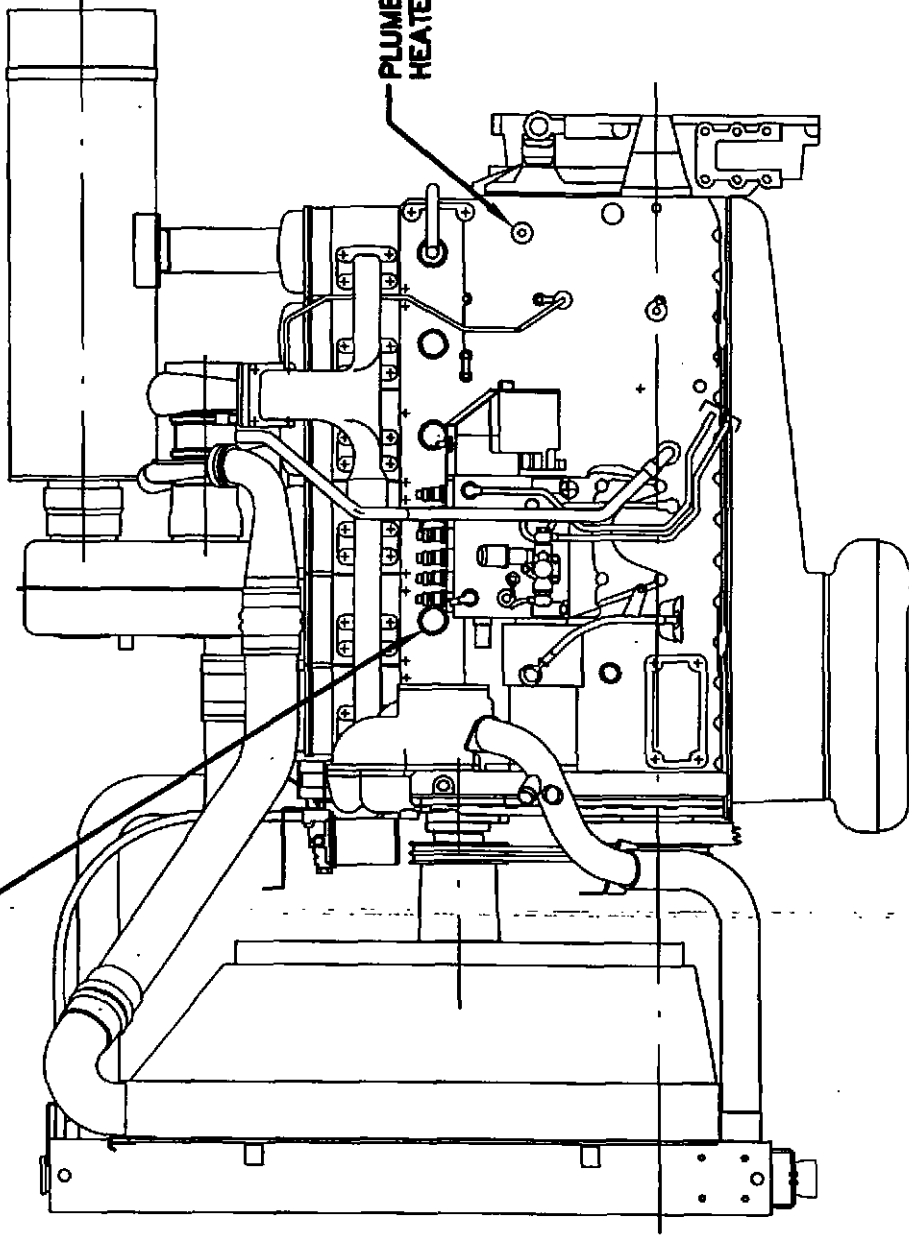
KATOLIGHT

MANKATO, MINNESOTA

WATER HEATER PLUMBING LOCATIONS

SIZE	DATE	DWG NO	F:\DWG\ENGINE\TAD730G
A	7-29-98		
SCALE	NONE	PART NO	DWN. BY LJS SHEET 1 OF 1

PLUMB FROM WATER
HEATER OUTLET



PLUMB TO WATER
HEATER INLET

KATOLIGHT

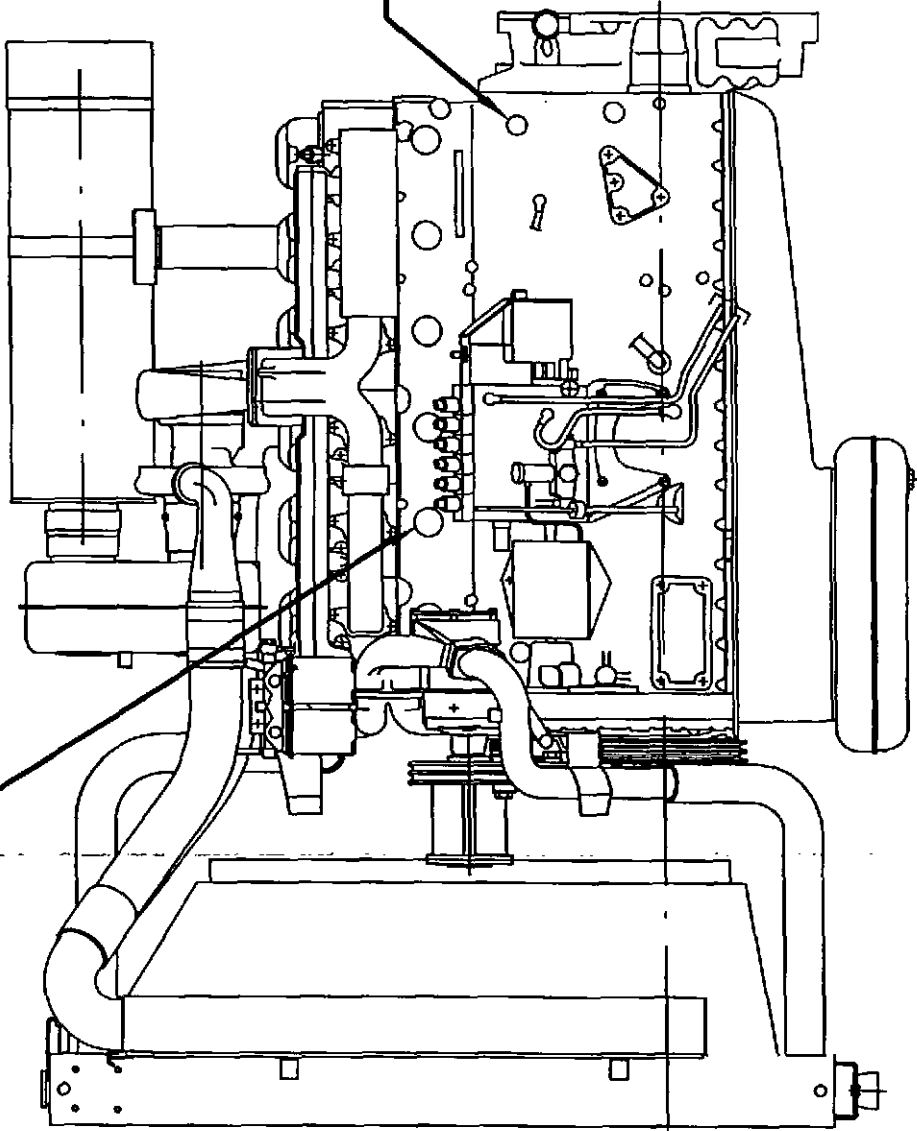
MANKATO, MINNESOTA

WATER HEATER PLUMBING LOCATIONS

SIZE	DATE	DWG NO
A	7-29-98	F:\DWG\ENGINE\TAD1030GE

SCALE	NONE	PART NO	DWN BY	LJS	SHEET	1 OF 1
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PLUMB FROM WATER
HEATER OUTLET



PLUMB TO WATER
HEATER INLET

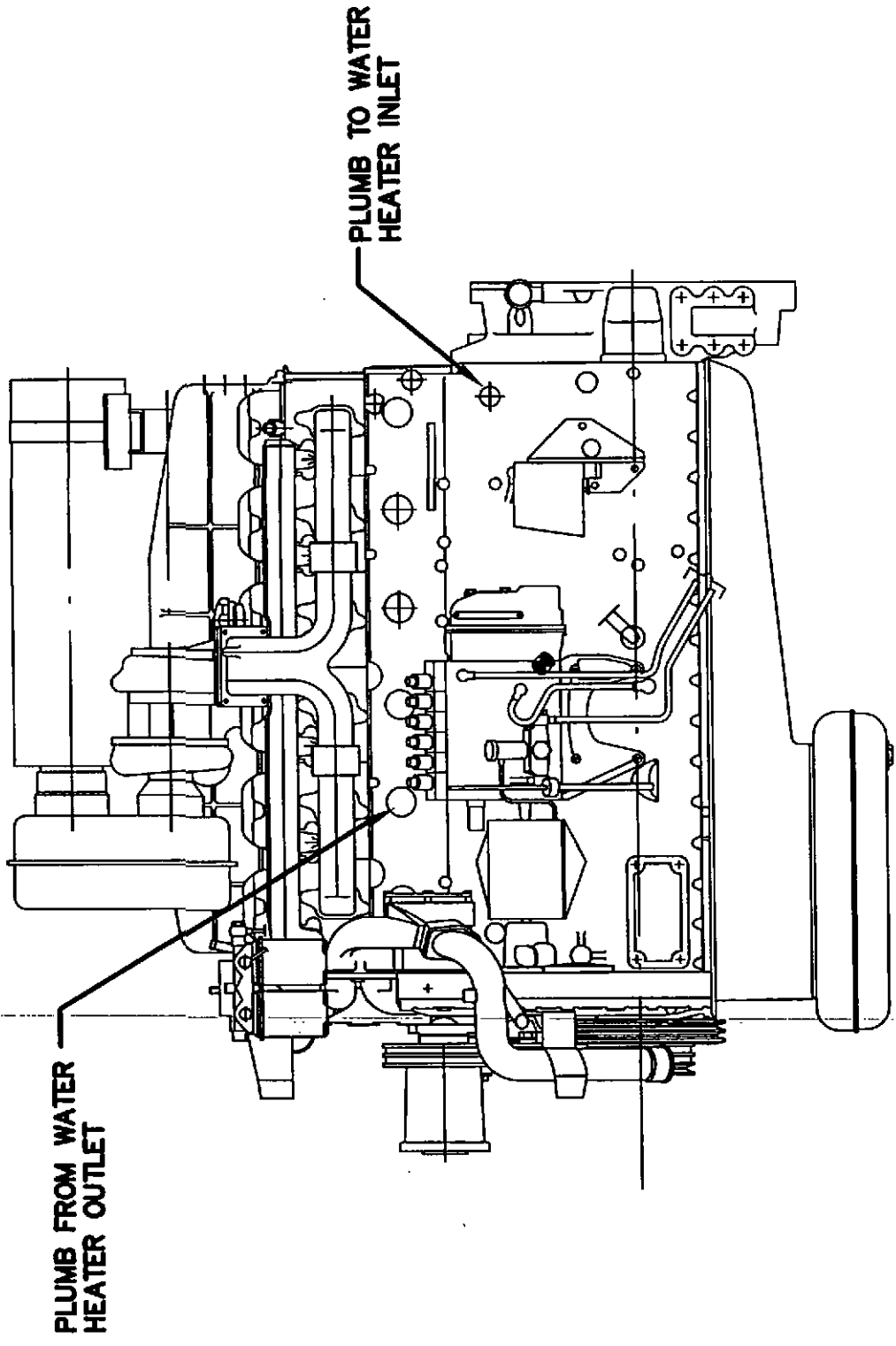
KATOLIGHT

MANKATO, MINNESOTA

WATER HEATER PLUMBING LOCATIONS

SIZE DATE DWG NO
A 7-29-98 F:\DWG\ENGINE\TAD1232GE

SCALE NONE PART NO DWN BY LJS SHEET 1 OF 1



PLUMB FROM WATER
HEATER OUTLET

PLUMB TO WATER
HEATER INLET

KATOLIGHT

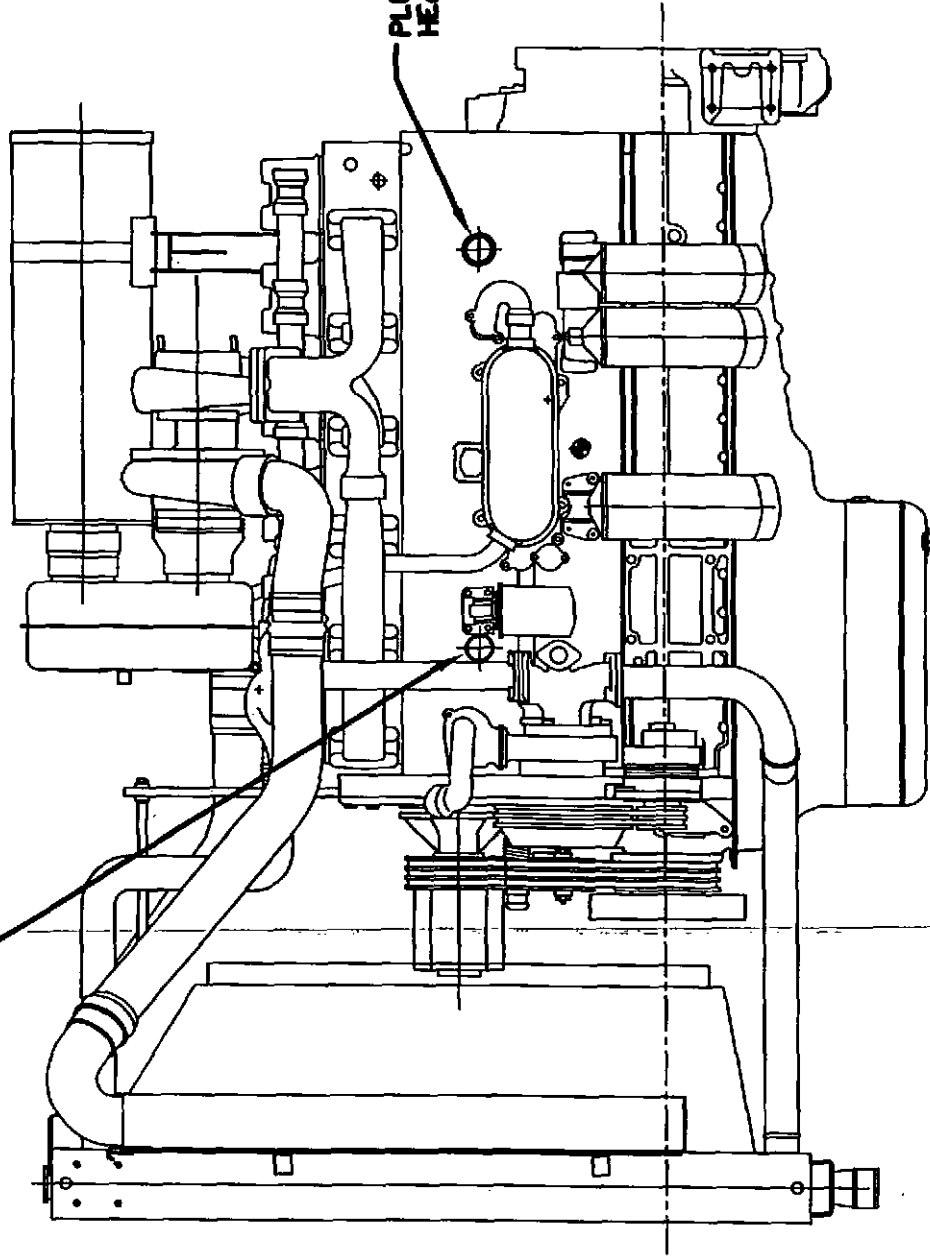
MANKATO, MINNESOTA

WATER HEATER PLUMBING LOCATIONS

SIZE	DWG NO.
A	F:\DWG\ENGINE\TWD1211GE
DATE	
7-29-98	

SCALE	PART NO	DWN BY	SHEET
NONE		LJS	1 OF 1

PLUMB TO WATER
HEATER INLET



PLUMB FROM WATER
HEATER OUTLET

KATOLIGHT

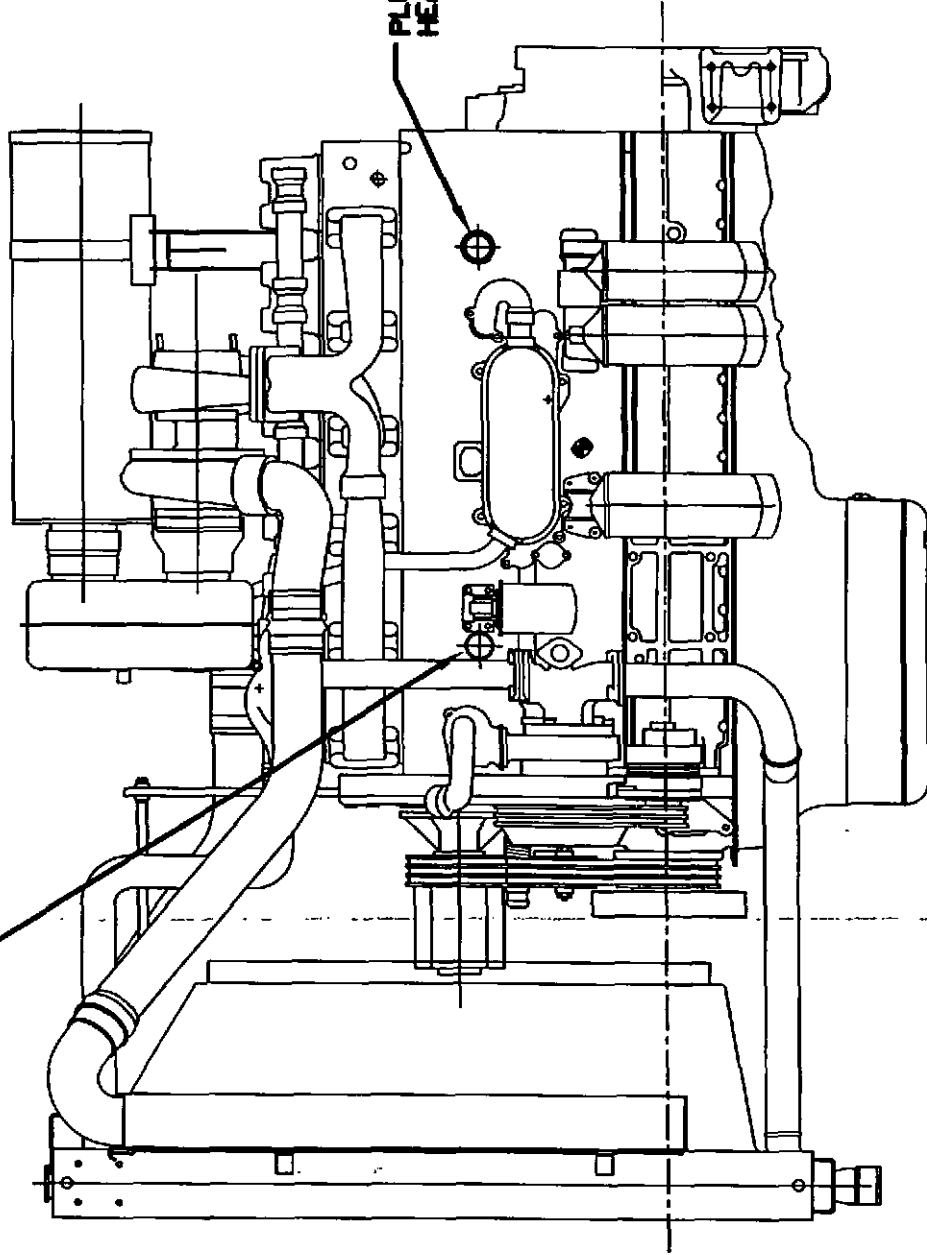
MANIKATO, MINNESOTA

WATER HEATER PLUMBING LOCATIONS

SIZE	DWG NO	DWG NO
A	7-29-98	F:\DWG\ENGINE\TAD1630GE

SCALE	PART NO	DWN BY	SHEET
NONE		LJS	1 OF 1

PLUMB TO WATER
HEATER INLET



PLUMB FROM WATER
HEATER OUTLET

KATOLIGHT

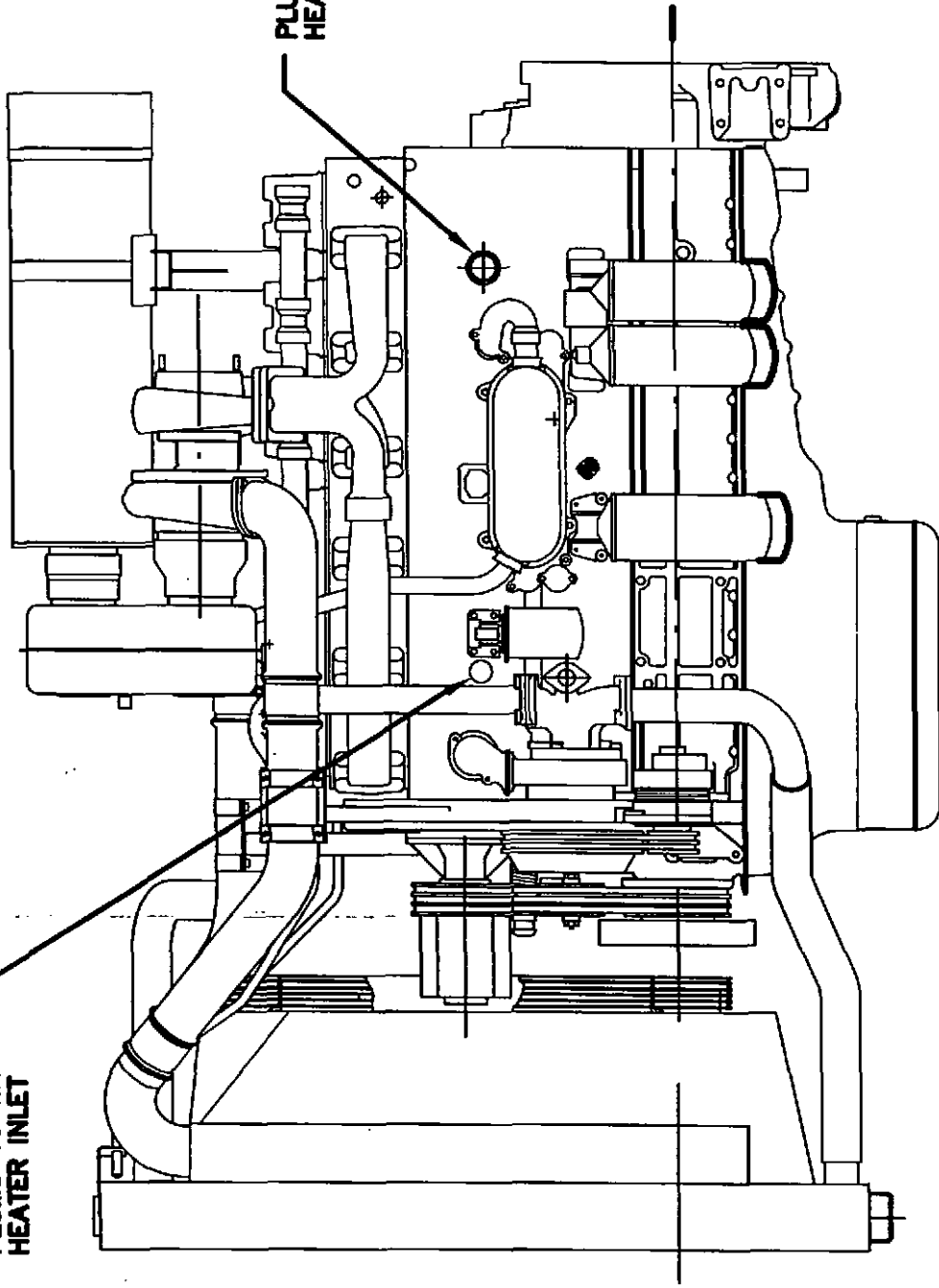
MANKATO, MINNESOTA

WATER HEATER PLUMBING LOCATIONS

SIZE	DATE	DWG NO
A	7-29-98	F:\DWG\ENGINE\TWD1630G

SCALE	NONE	PART NO	DWN BY	LJS	SHEET	1 OF 1
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PLUMB TO WATER
HEATER INLET



PLUMB FROM WATER
HEATER OUTLET

KATOLIGHT

MANKATO, MINNESOTA

WATER HEATER PLUMBING LOCATIONS

SIZE	DATE	DWG NO	F:\DWG\ENGINE\TAD1631GE
A	7-29-98		

SCALE	NONE	PART NO	DWN BY LJS	SHEET 1 OF 1
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Leon Sieberg

From: Dave Kammerer
Sent: Thursday, May 28, 1998 1:21 PM
To: Bruce Prange; Jeff Scholten; Leon Sieberg; Matt Lade; Reed Allis; Mike Dauffenbach
Subject: FW: Block Heater Plumbing

Hello,

Richard Woody has reviewed the drawings that we had sent to him and here are his recommendations.

Any questions or comments, please let me know.

Dave Kammerer

-----Original Message-----

From: RICHARD WOODY [SMTP:VP.WOODY@MEMO.VOLVO.SE]
Sent: Thursday, May 28, 1998 12:40 PM
To: DAVEK@KATOLIGHT.com
Subject: Block Heater Plumbing

--- Received from VP.WOODY 757 436 2800

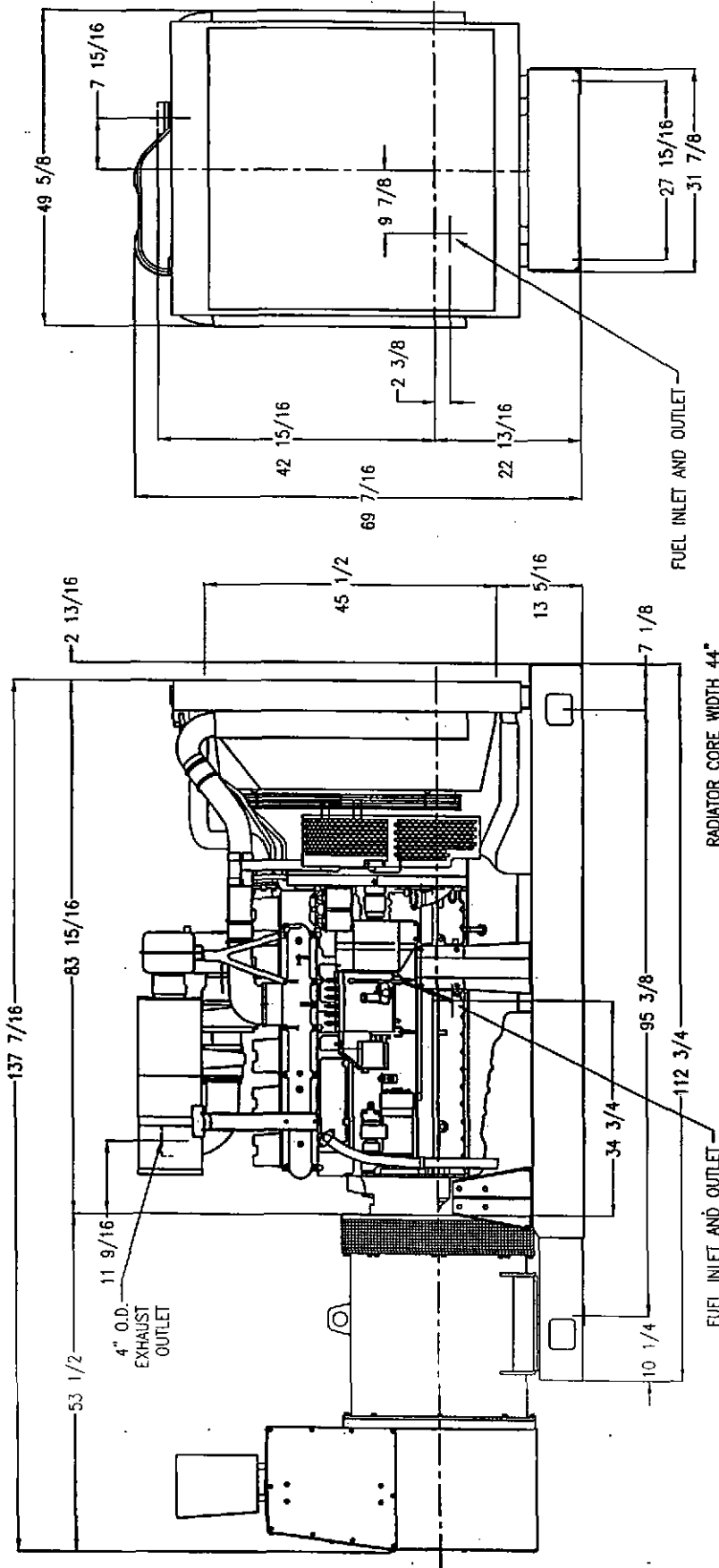
98-05-28 19:40

Dear Dave,

The 16 liter engines again look good. I was talking with several people in Sweden in reference to this and they say they have been plumbing them the way it shows in the book for years. The ones in P.A. were not plumbed as per the book. Let's leave the 16 liter engines as they are. The 12 liter engines I would like to take water from plug "C" on the drawing which is the block drain. Then I would like to return it to the big frost plug on the block. There are 6 of these on these engines. pick the one closest to the front of the engine that we can have access to. I would like to do the same with the 1030GE engines. Use "C" on the drawing which is the block drain and return big frost plug at the front of the block, as close to the front as we can get. The TAD 730G we can take water from "C" and return it as close to the front at the big frost plugs as we can get. The TWD 710 G we should take water from the drain, "C" and go back to the inlet pipe on the circulation pump. I think this will resolve our block heater problems. I want to see the block temperatures at 120°. If we put an engine in a colder region we may need to go over the 2000 w. recommendation. If you have any questions please call, fax, or memo me.

Best Regards
Rich

----- 98-05-28 19:40 ----- Sent to -----
-> DAVEK(a)KATOLIGHT.com



RADIATOR CORE WIDTH 44"

FUEL INLET AND OUTLET

FUEL INLET AND OUTLET

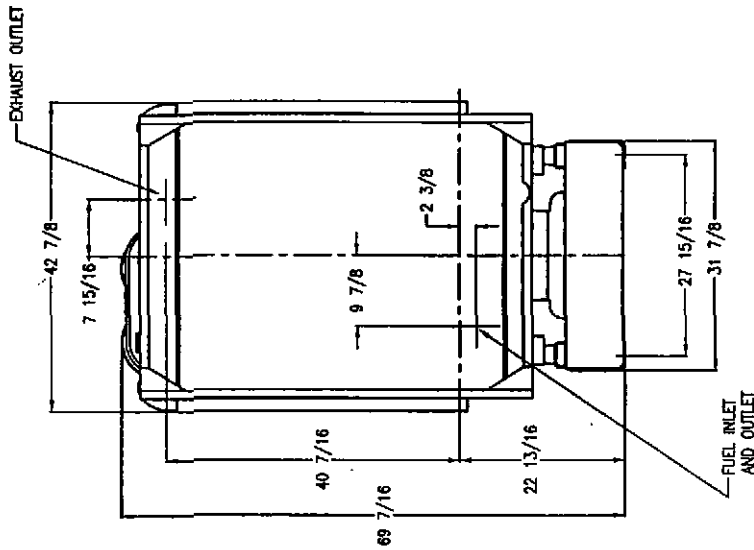
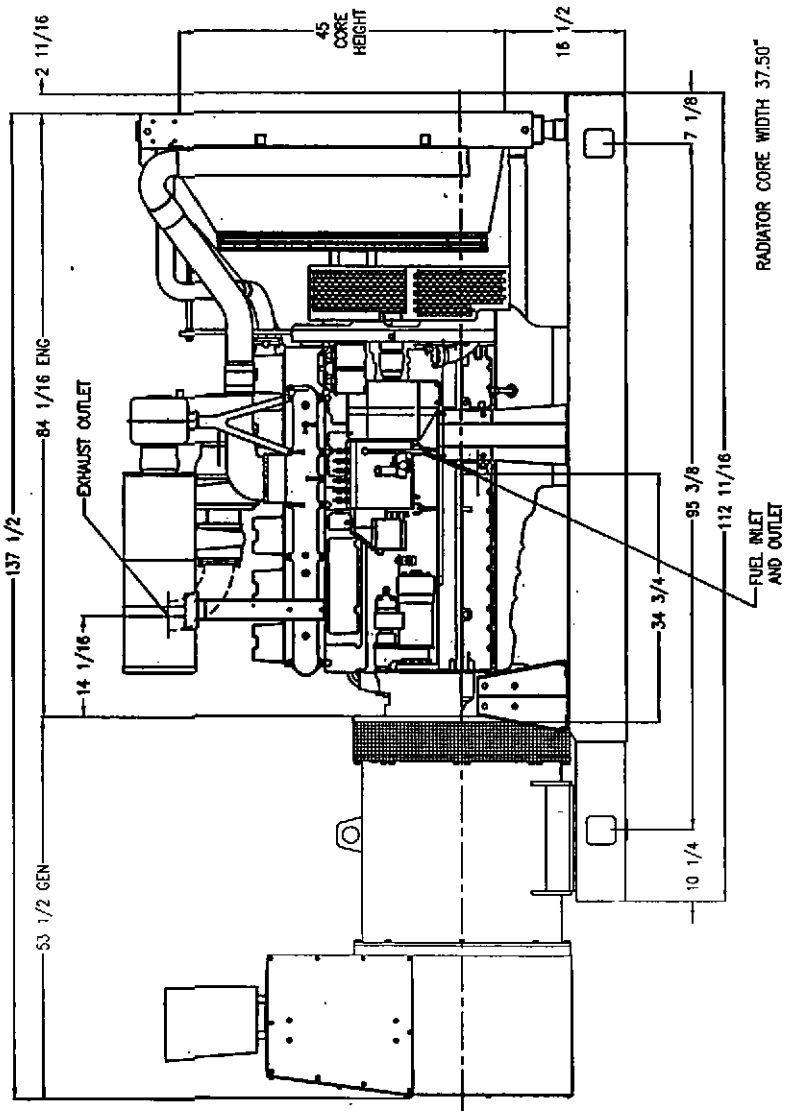
KATOLIGHT

WABCO, MINNESOTA

ENGINE	GENERATOR	RADIATOR	MODEL
TAD1631CEP	572 RSL	STD W/ENG	D500FV4
SIZE	DATE	DWG NO	
B	10-2-97	100-777	
SCALE .077=1	PART NO	DWG BY MRL SHEET 1 OF 1	

ORIGINAL

REVISION: 1. UPDATED DWG WITH NEW FLOOR MTG LOCATIONS 5-21-98 LJS

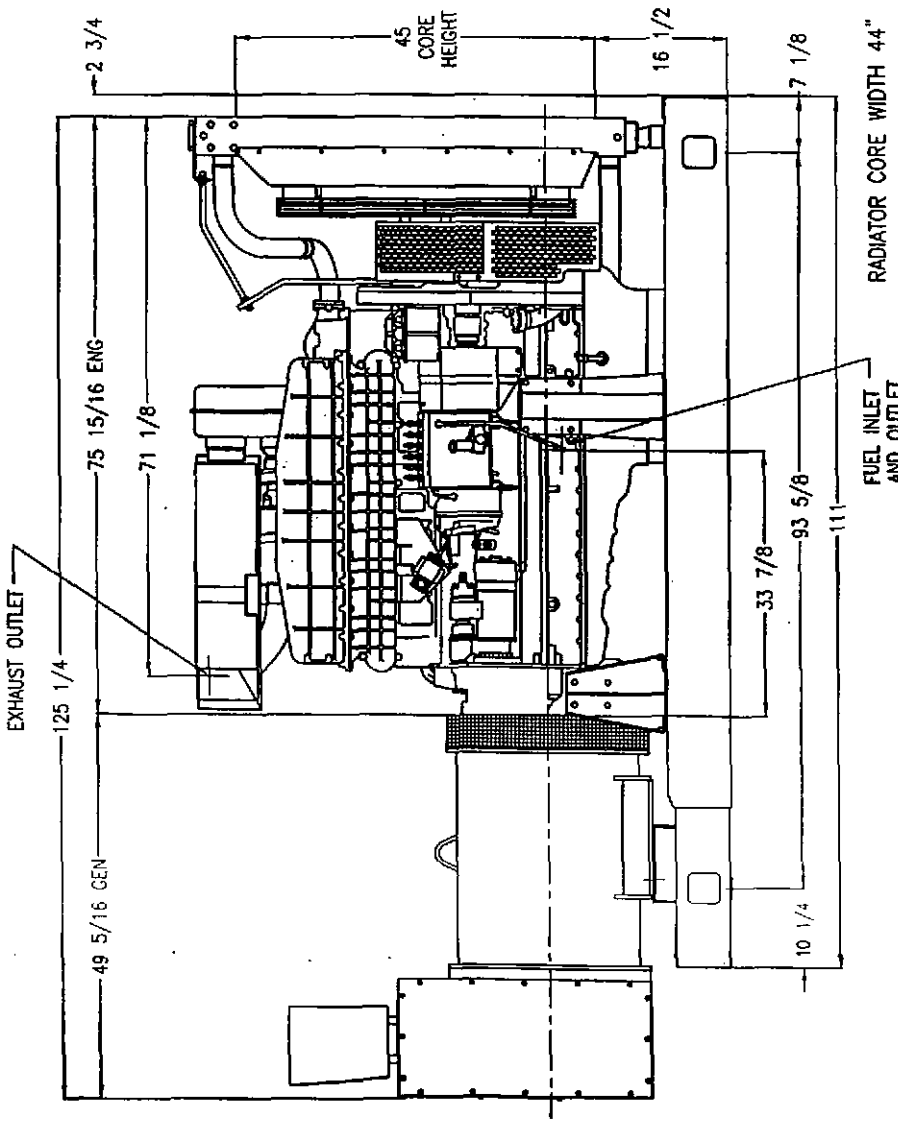
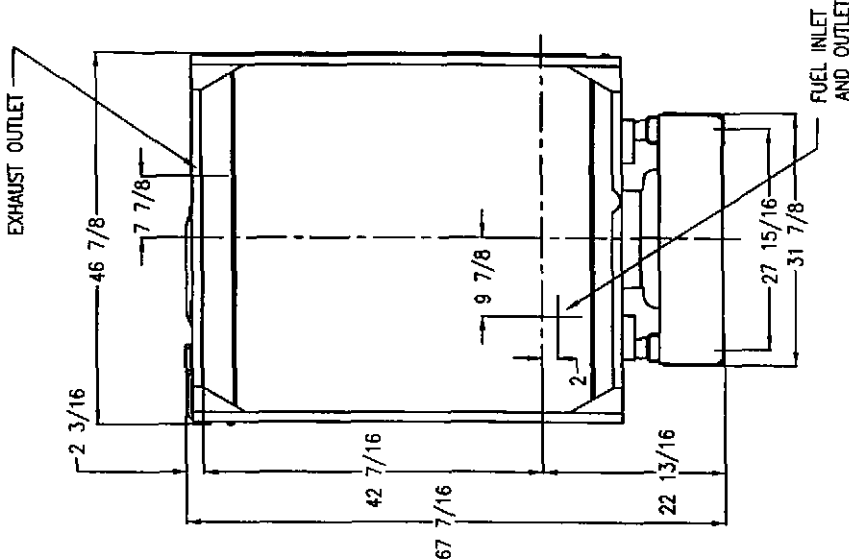


KATOLIGHT

MARKKATO, MINNESOTA

ENGINE	GENERATOR	RADIATOR	MODEL
TAD1630GEP	572 RSL	STD W/ENG	D450F*V4
SIZE	DATE	DWG NO	
B	5-21-98	100-776	
SCALE .077=1	PART NO	DWG BY LJS SHEET 1 OF 1	

ORIGINAL



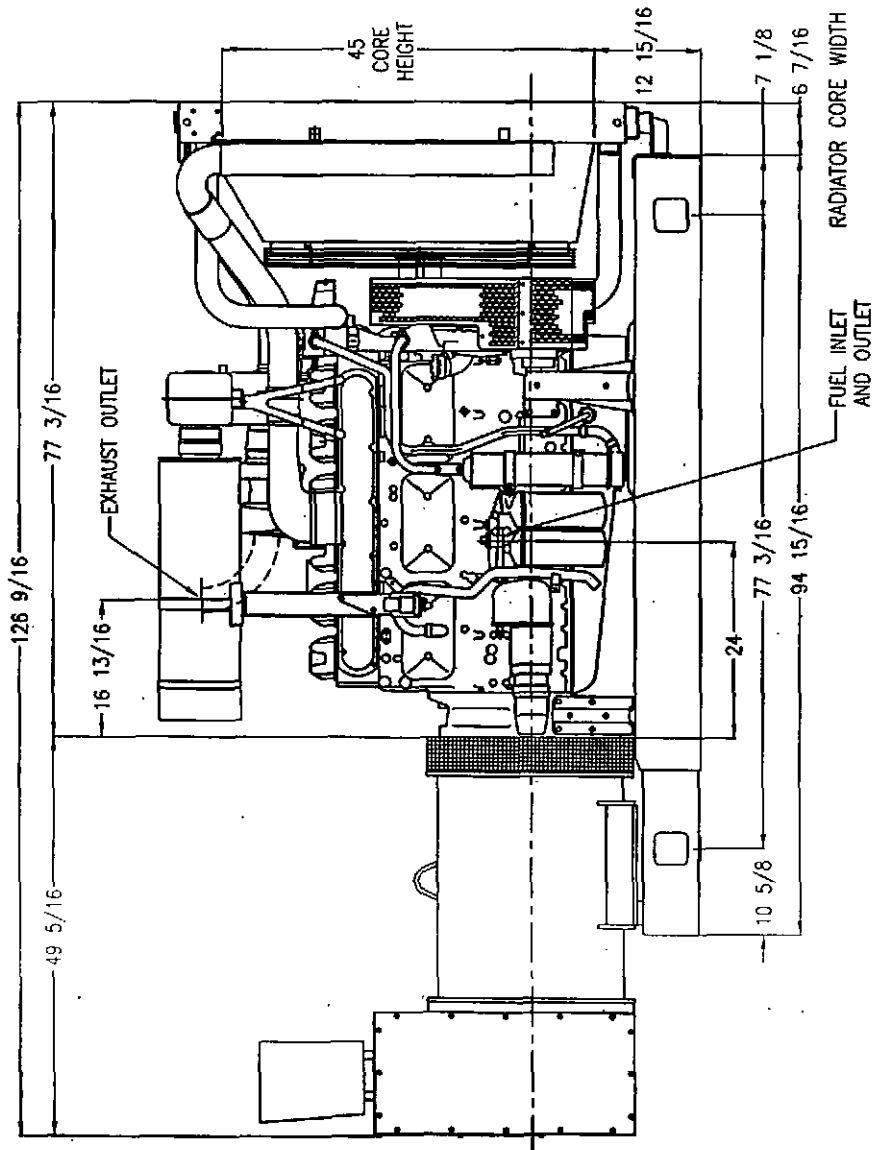
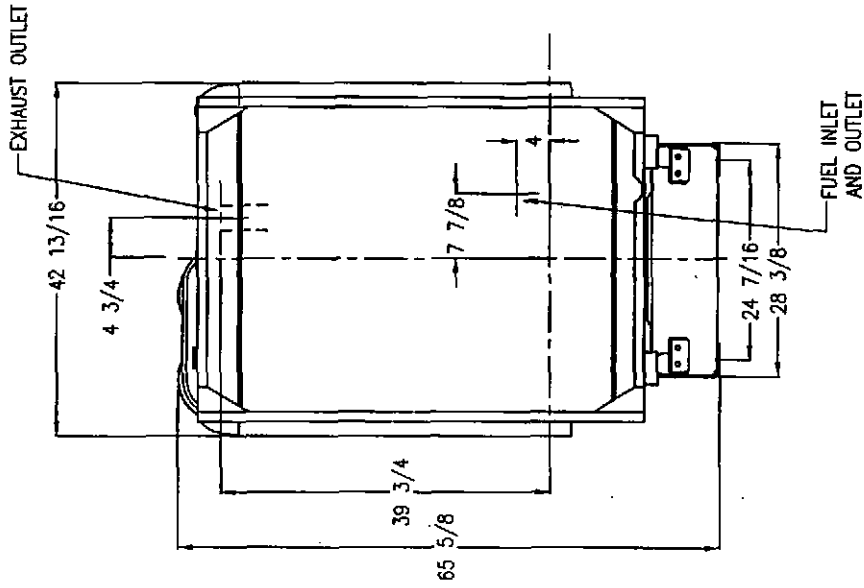
KATOLIGHT

MAUKATO, MINNESOTA

ENGINE	GENERATOR	RADIATOR	MODEL
TWD1630GP	433 PSL	STD W/ENG	D400FV4
SIZE	DATE	DWG NO	100-775
B	11-14-97		
SCALE .077=1		PART NO	
		DWG BY MRL	
		SHEET 1 OF 1	

ORIGINAL

- REVISION: 1. ADDED EXHAUST OUTLET 1-20-98 LJS
 2. CHANGED GENERATOR MOUNTING CHANNEL 3-4-98 LJS
 3. UPDATE DWG WITH NEW FLOOR MTG LOCATIONS 5-21-98



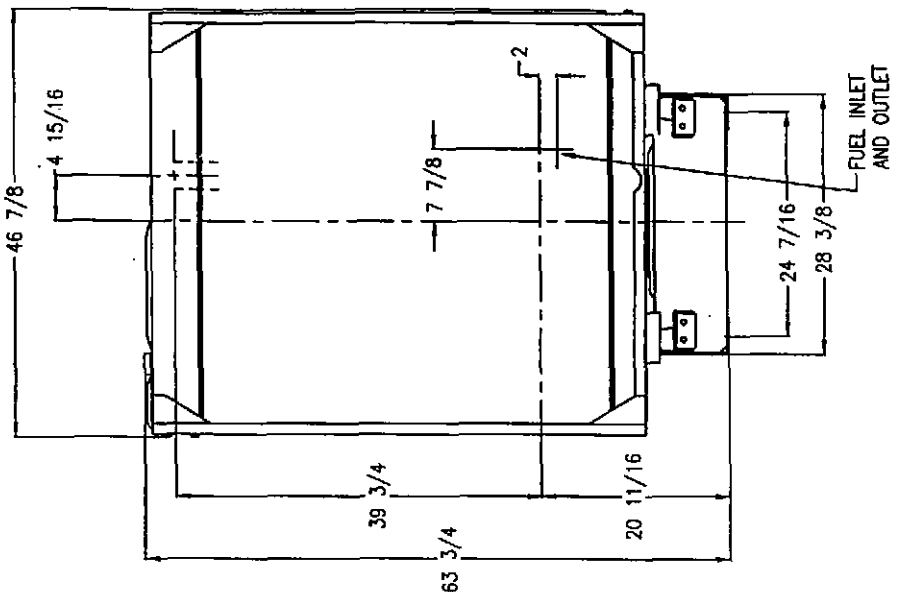
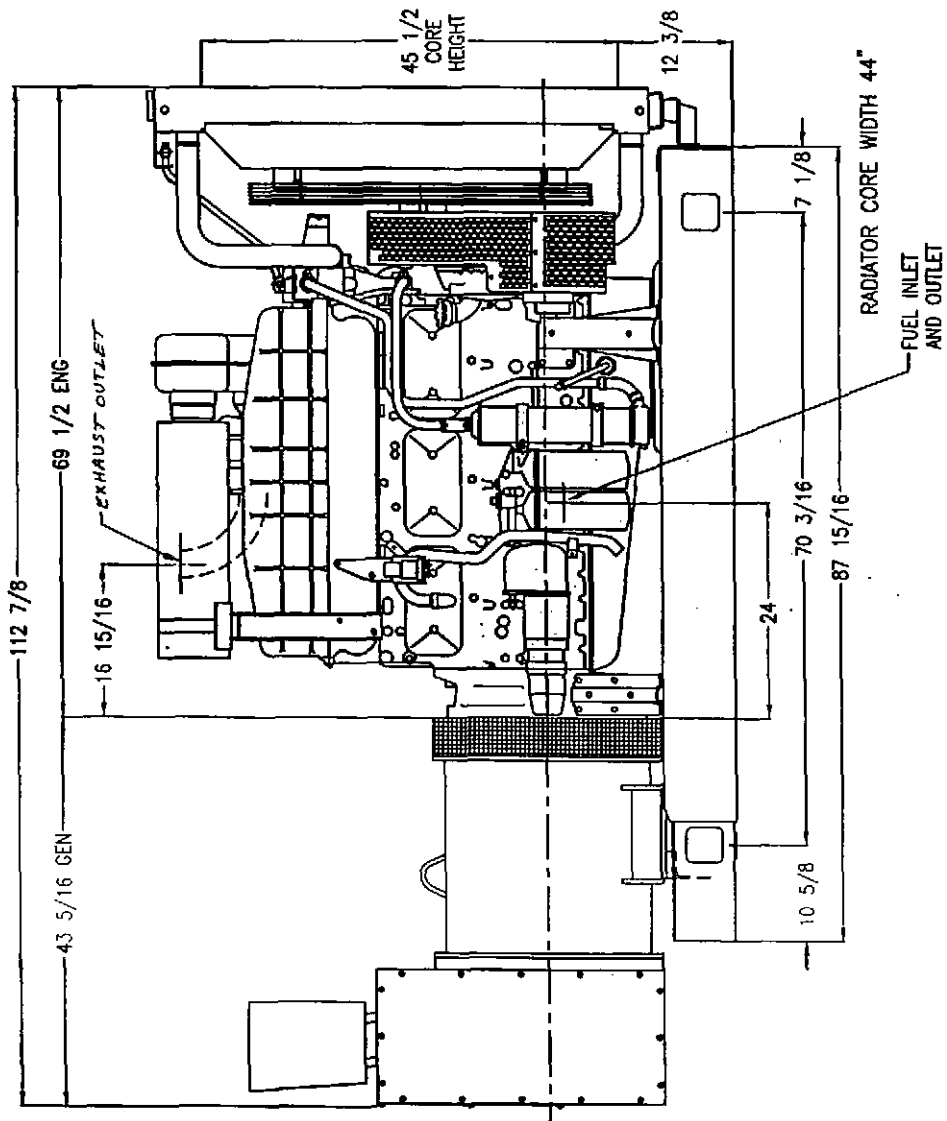
KATOLIGHT

MARKATO, MINNESOTA

ENGINE	GENERATOR	RADIATOR	MODEL
TWD1232SEP	433 PSL	STD W/ENG	D300F*V4
SIZE	DATE	DWG NO	
B	8-26-97	100-774	
SCALE .077=1	PART NO	OWN BY MRL SHEET 1 OF 1	

GENERAL

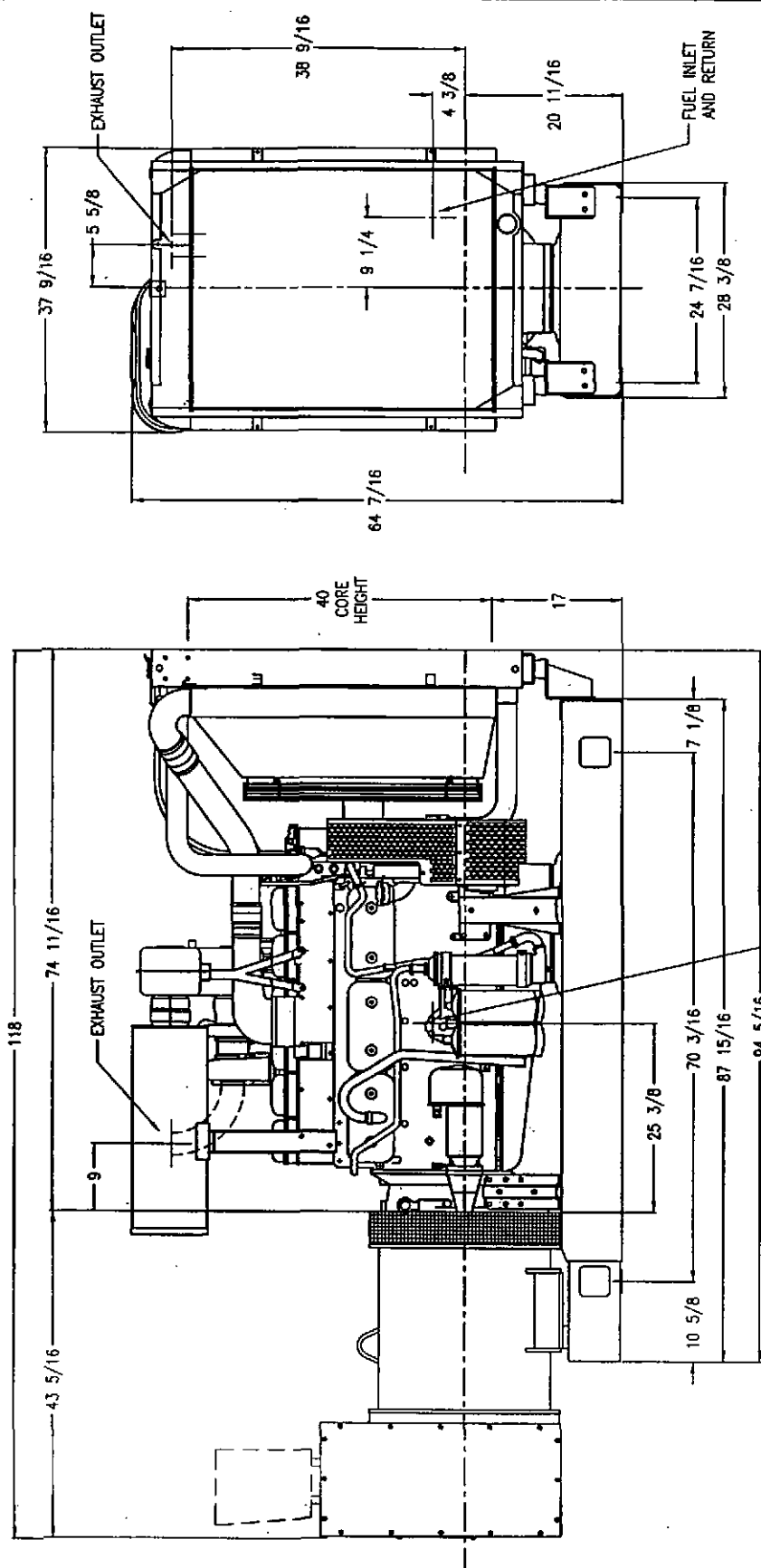
REVISION: 1. UPDATED DWG WITH NEW FLOOR MTG LOCATIONS 5-21-98 LJS



KATOLIGHT
 MARKATO, MINNESOTA

ENGINE	GENERATOR	RADIATOR	MODEL
TWD1211GP	432 PSL	STD W/ENG	D300P*V4
SIZE	DATE	DWG NO	
B	5-21-98	100-773	
SCALE .077=1		PART NO	DWN BY LJS
			SHEET 1 OF 1

ORIGINAL

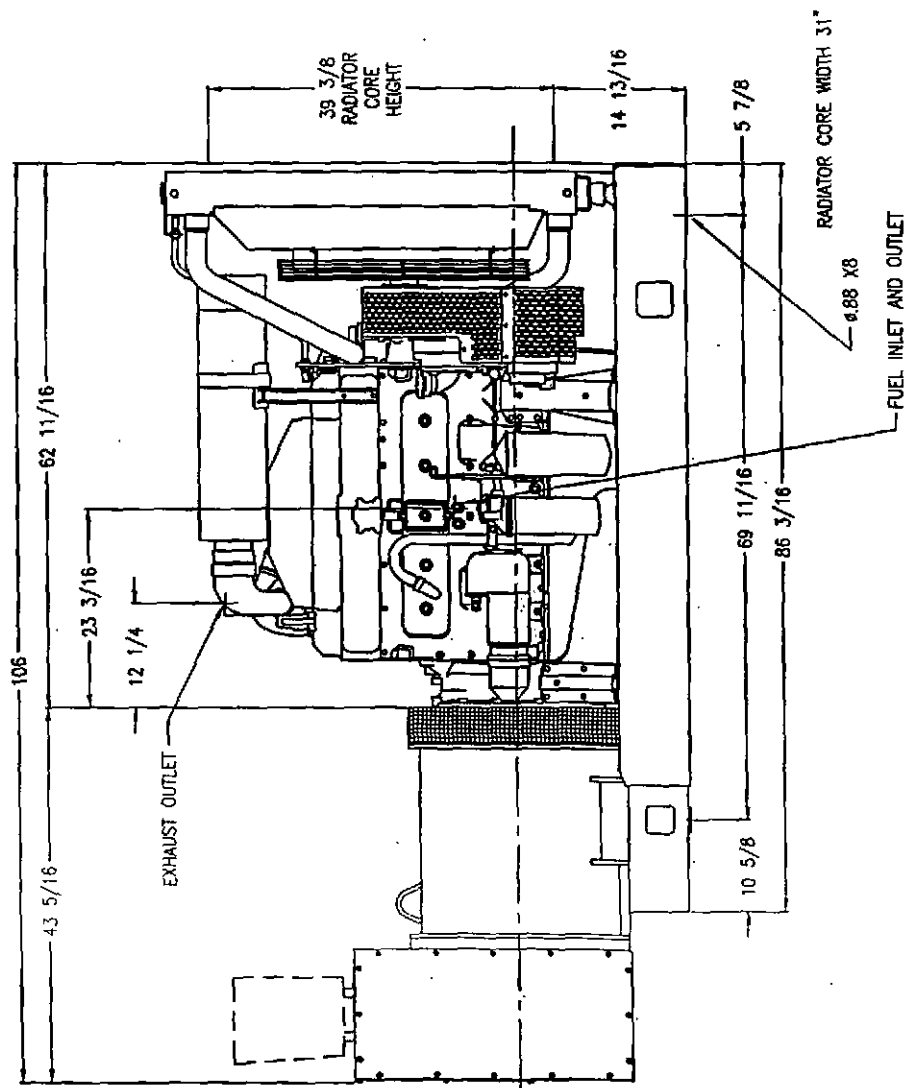
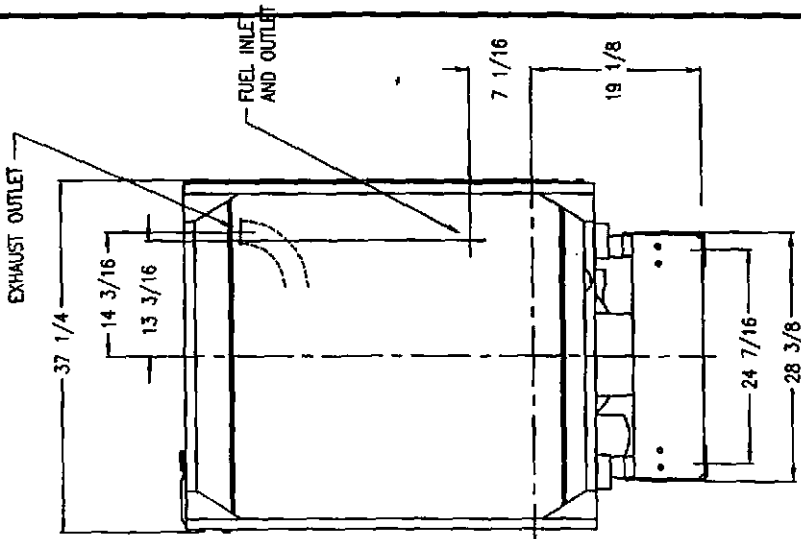


KATOLIGHT
MANKATO, MINNESOTA

ENGINE	GENERATOR	RADIATOR	HOUSING
TAD1030CEP	432 RSL	STD W/ENG	OPU
SIZE	DATE	DWG NO	
B	1-13-98	100-772	
SCALE .04=1 PART NO		DWG BY LIS	SHEET 1 OF 1

ORIGINAL

REVISION: 1. UPDATED DWG WITH NEW FLOOR MTG LOCATIONS 5-21-98 LIS



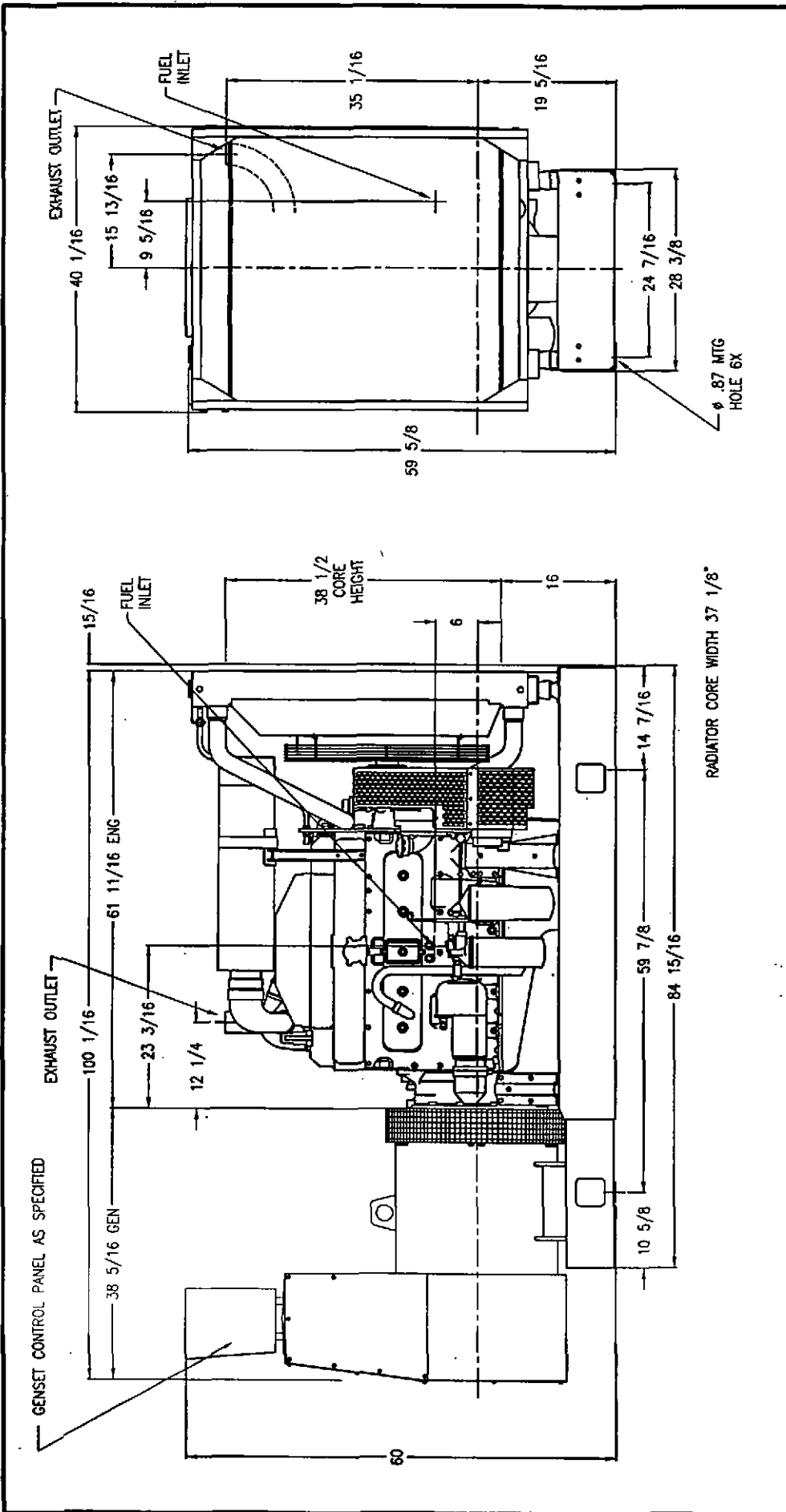
KATOLIGHT

MANKATO, MINNESOTA

ENGINE	GENERATOR	RADIATOR	HOUSING
TAD730GP	432 PSL	STD W/ENG	OPU
SIZE	DATE	DWG NO	
B	4-28-98	100-771	
SCALE	.04=1	PART NO	DWN BY LJS
			SHEET 1 OF 1

ORIGINAL

REVISION: 1. UPDATED DWG WITH NEW FLOOR MTG LOCATIONS 5-20-98 LJS



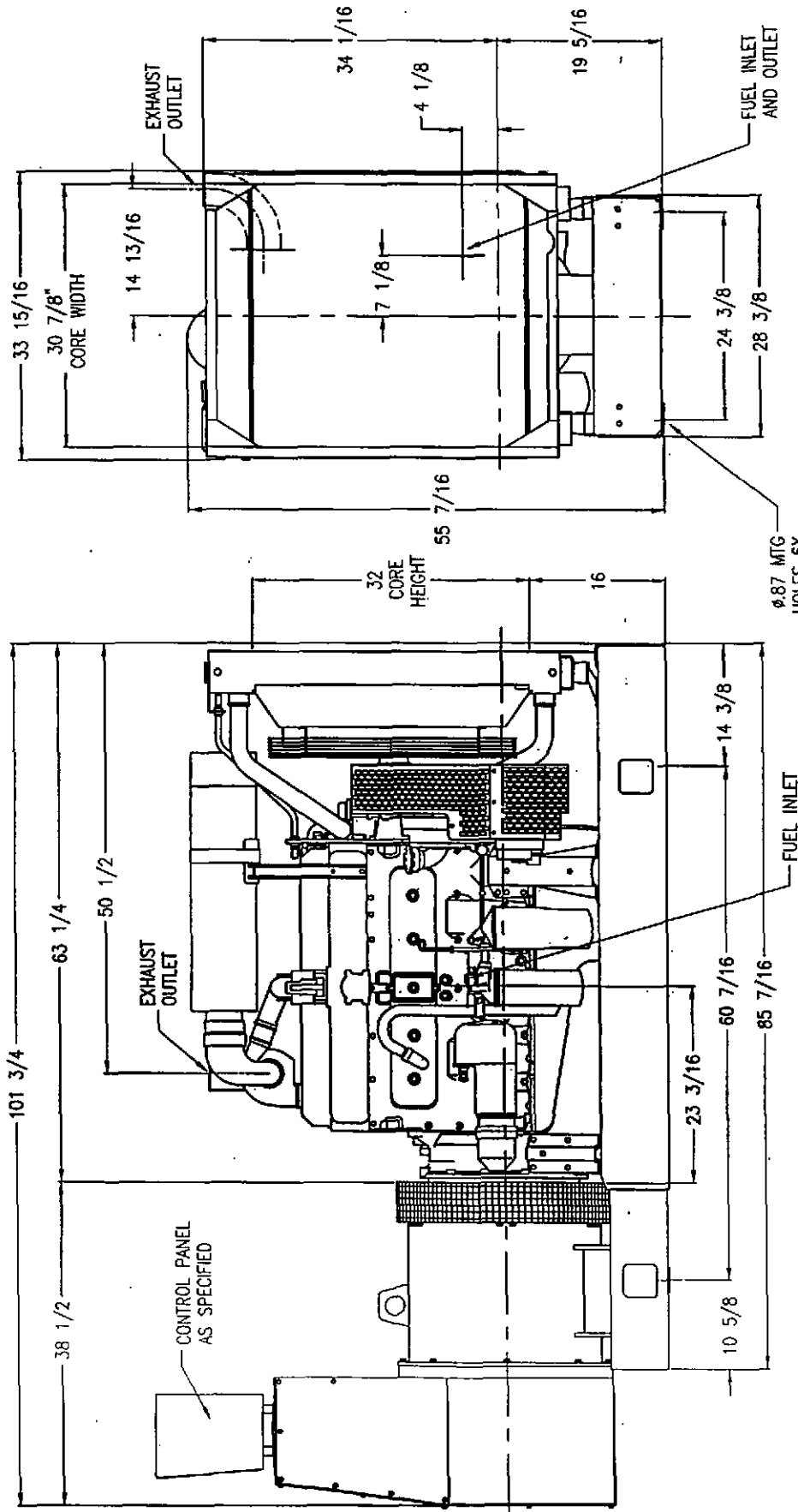
KATOLIGHT

MANIKATO, MINNESOTA

ENGINE	GENERATOR	RADIATOR	HOUSING
TWD710GP	431 RSL	STD W/ENG	OPU
SIZE	DATE	DWG NO	100-770
B	4-16-98	PART NO	DWN BY LJS
SCALE .05=1	SHEET 1 OF 1		

REVISION: 1. UPDATED DWG WITH NEW FLOOR MTG LOCATIONS 5-20-98 LJS

ORIGINAL

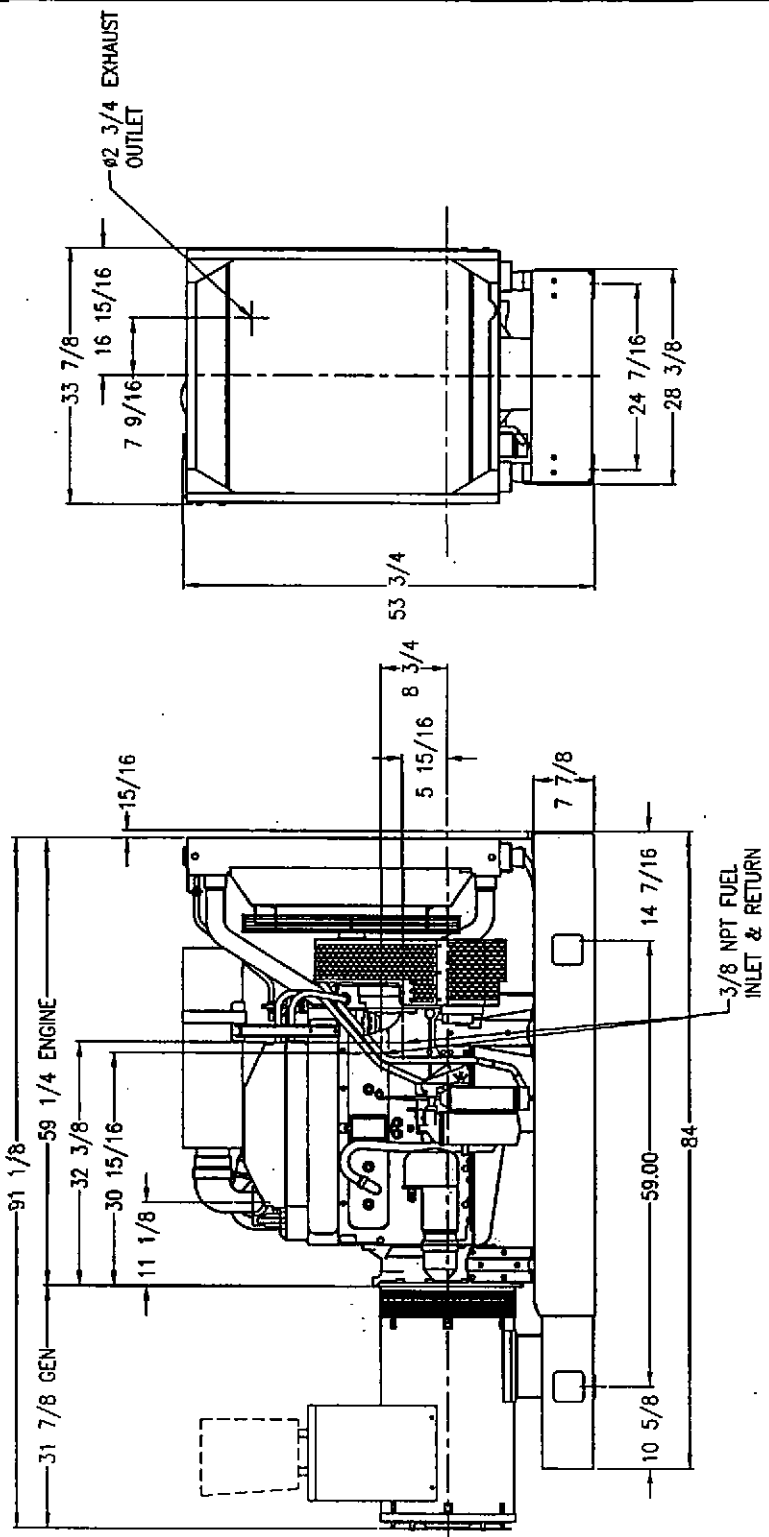


KATOLIGHT
MARSHFIELD, MINNESOTA

ENGINE	GENERATOR	RADIATOR	FRASING
TD710GP	431 RSL	STD W/ENG	OPU
SIZE	DATE	DWG NO	100-769
B	11-12-97	DWN BY	LJS
SCALE	.06=1	PART NO	SHEET 1 OF 1

ORIGINAL

REVISION: 1. CHANGED FLOOR MTG HOLE LOCATIONS 5-20-98 LJS

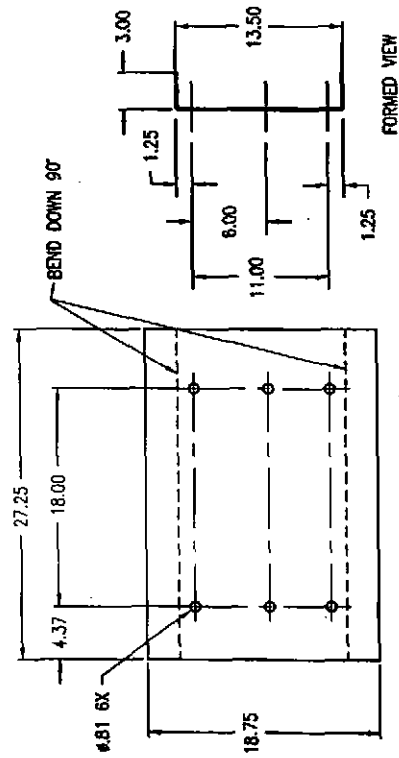
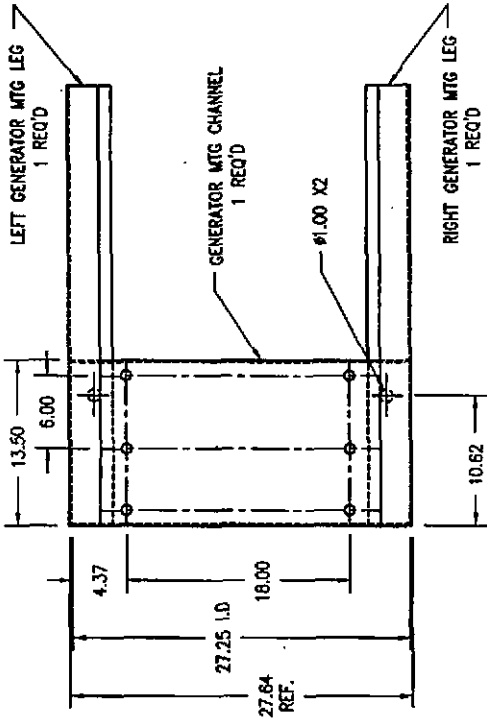


KATOLIGHT
 HAWKETS, MINNESOTA

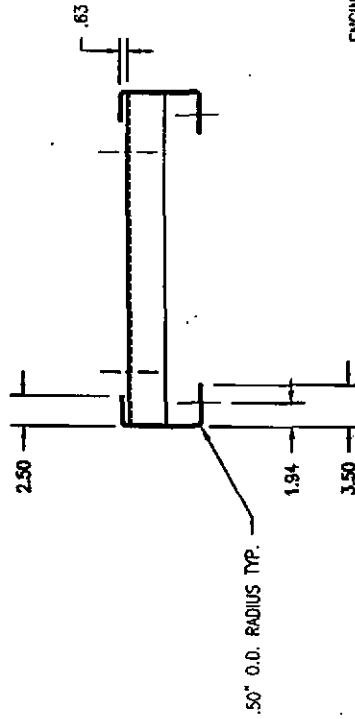
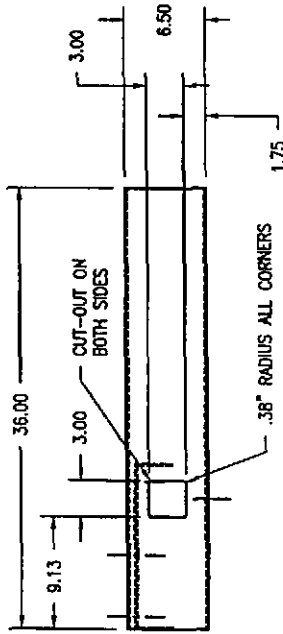
ENGINE	GENERATOR	HOUSING
TWD610G	STD W/ENG 363 PSL	OPU
SIZE	DATE	DWG NO
B	12-18-97	100-768
SCALE	.15=1	PART NO
		DWN BY LJS
		SHEET 1 OF 1

ORIGINAL

REVISION: 1. UPDATED DWG WITH NEW FLOOR MTG LOCATIONS 5-20-98 LJS



GENERATOR MTG CHANNEL
1 REQ'D



ENGINE: TWD610
TWD710G
TAD730G

GEN FRAME: 430

ORIGINAL

NOTE:
1. MATERIAL: 7 GA. CFS
2. ALL BENDS 90° UNLESS NOTED

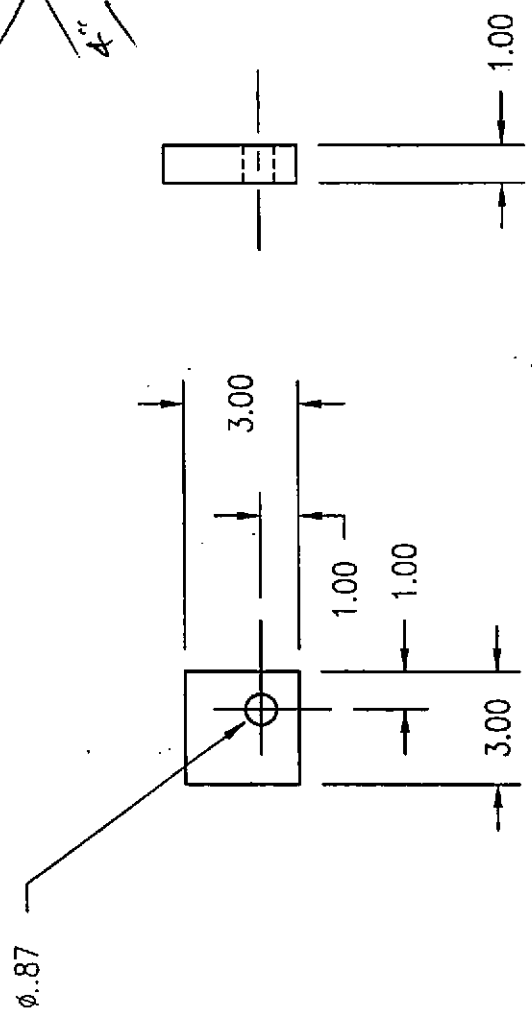
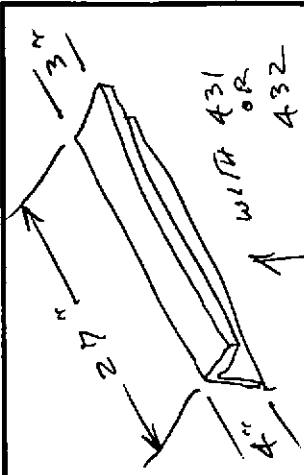
REVISION: 1. CHANGED CUT SIZE OF GEN. CHANNEL 1-12-98 LJS
2. MOVED MOUNTING TO NEW LOCATION 15.50" 1-28-98 LJS
3. MOVED FLOOR MOUNTING HOLE TO 10.63" 5-21-98 LJS

KATOLIGHT
MANKATO, MINNESOTA

VOLVO GEN MOUNTING KIT

SIZE DATE 12-29-97 DWF NO 105-1562

SCALE .08=1 PART NO. F59366 DRN BY LJS SHEET 1 OF 1



GENERATOR MOUNTING SPACERS

ORIGINAL

ENGINE: TAD1030GE GEN FRAME: 430
 TWD1211G
 TAD1232GE

KATOLIGHT

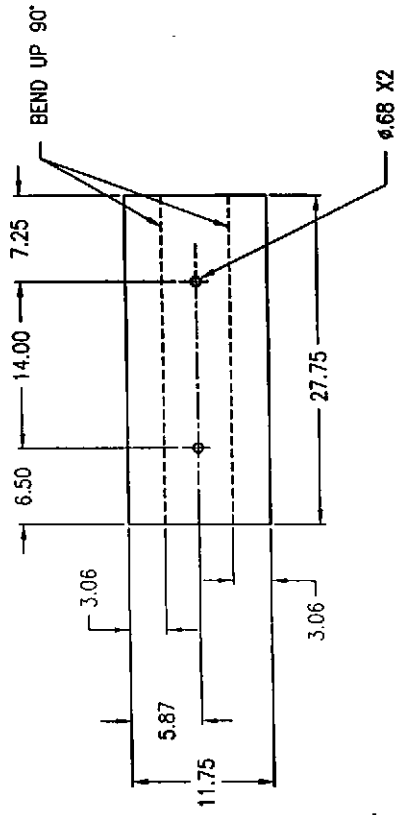
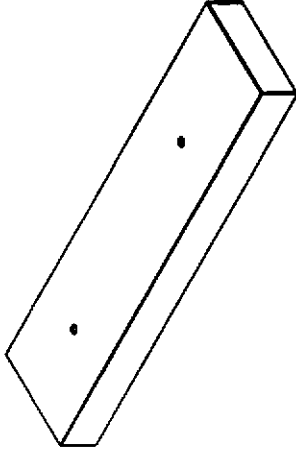
MINNETONKA, MINNESOTA

VOLVO GEN MOUNTING KIT

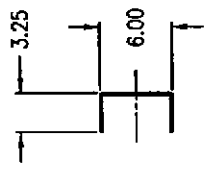
SIZE	DATE	DWG NO	105-1563
B	1-2-98		
SCALE .08=1			PART NO. 57370
			DWN BY LJS
			SHEET 1 OF 1

NOTE:
 1. MATERIAL: 1.00" FLAT CRS

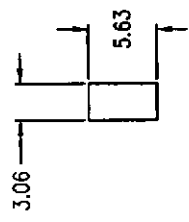
REVISION: 1. MOVED HOLE LOCATION 1-22-98 LJS



GENERATOR MOUNTING CHANNELS
1 REQ'D
7 GA C.R.S



FORMED VIEW



CHANNEL END CAPS
2 REQ'D
7 GA C.R.S

ENGINE: TWD610GP
ID710G
TWD710GP

GENERATOR: 360 FRAME GEN

ORIGINAL

KATOLIGHT

LANCASHIRE, MINNESOTA

GEN CHANNEL FOR OPU

DWG NO 105-1539

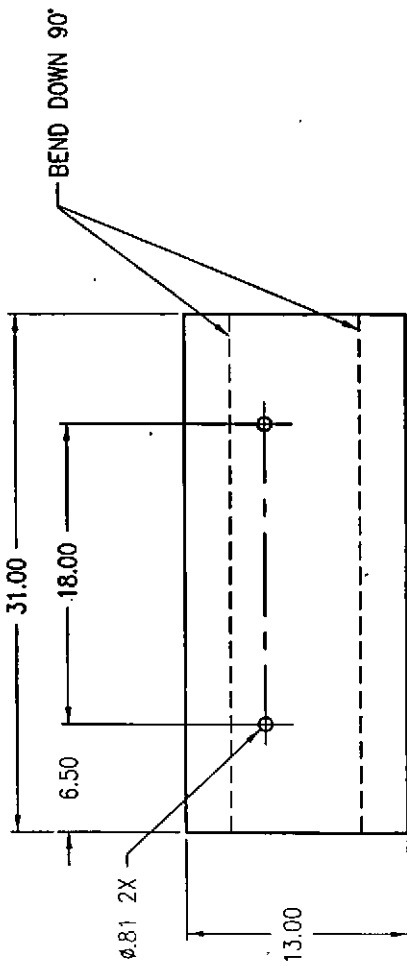
DATE 11-11-97

SCALE .09=1

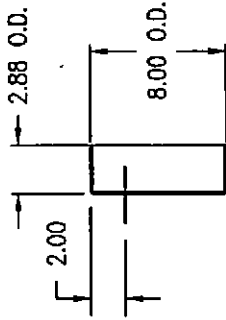
DWN BY LJS

PART NO

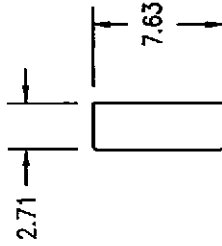
SHEET 1 OF 1



GENERATOR MTG CHANNEL
1 REQ'D



FORMED VIEW




CHANNEL END CAP
2 REQ'D

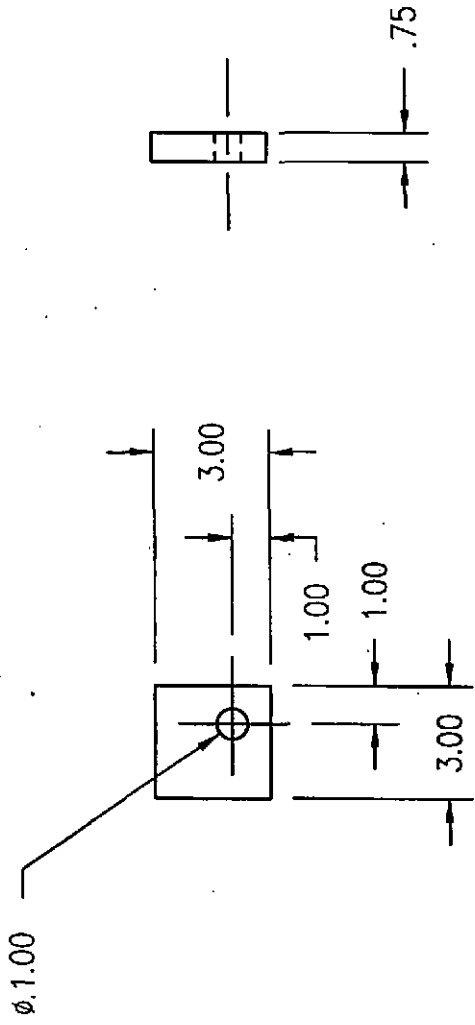
ORIGINAL

ENGINE: TWD1630CP
TAD1630GEP
TAD1631GEP

NOTE:
1. MATERIAL: 7 GA. CRS
2. ALL BENDS 90° UNLESS NOTED

REVISION: 1. CHANGED OVERALL DESIGN OF CHANNEL 3-4-98 LJS

 MANATEE, FLORIDA		VOLVO GEN MOUNTING KIT	
		SIZE / DATE B / 1-2-98	DWG NO 105-1565
SCALE 08-1	PART NO.	DWN BY LJS SHEET 1 OF 1	



GENERATOR MOUNTING SPACERS

ORIGINAL

KATOLIGHT MARGATE, INDIANAPOLIS	
VOLVO GEN MOUNTING KIT	
SIZE DATE B 1-2-98	DWG NO 105-1564
SCALE .08-1 PART NO. 59367 DRAWN BY LJS SHEET 1 OF 1	

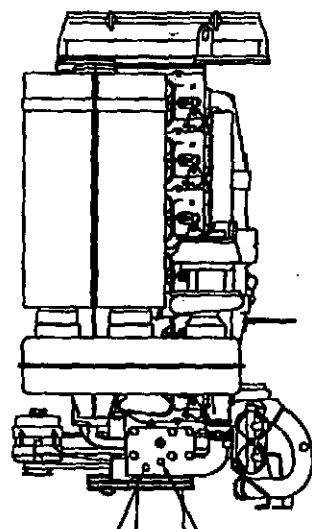
ENGINE: IWD1630GP
TAD1630GEP
TAD1631GEP

GEN FRAME: 570

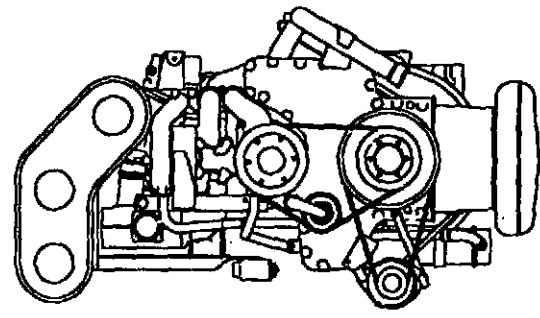
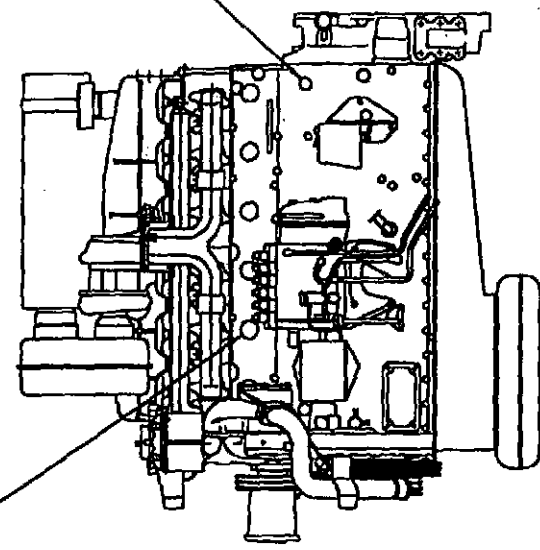
NOTE:
1. MATERIAL: .75" FLAT CRS

REVISION: 1. MOVED HOLE LOCATION 1-22-98 LJS

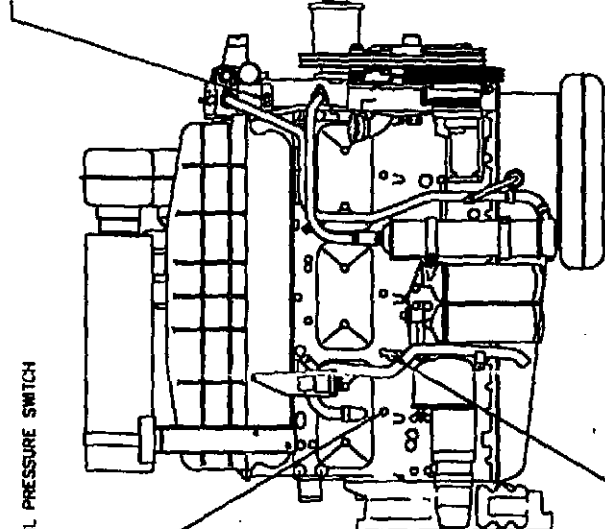
<u>Value Fwh</u>	<u>MODEL</u>	<u>BATTERIES</u>
125KW	TW0610GP	(2) 4D'S
150KW	TD710GP	(2) 4D'S
175 KW	TW0710GP	(2) 4D'S
200KW	TAD730GP	(2) 4D'S
250KW	TAD1030GP	(2) 4D'S
300KW	TW0721 GP	(2) 8D'S
350KW	TAD1232GP	(2) 8D'S
400KW	TW01630GP	(2) 8D'S
450KW	TAD1630GP	(2) 8D'S
500KW	TAD1631GP	(2) 8D'S



PLUMB FROM WATER HEATER OUTLET AND ALSO PLUMB IN LOW WATER TEMP SWITCH



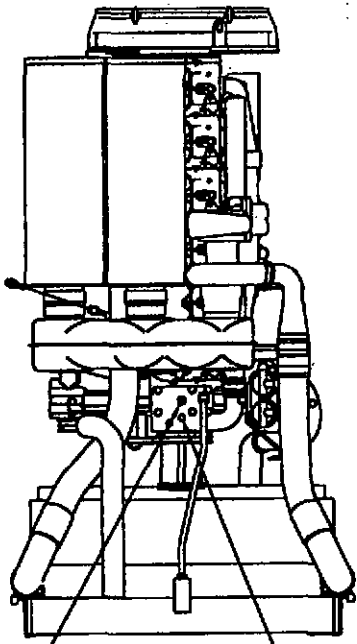
WATER TEMP SENDER



KATOLIGHT
MINNAPOTA, MINNESOTA

TWD1211G WATER HEATER PLUMBING & SENDER LOCATIONS	
REV. DATE	REV. NO.
B	9-8-98
F:\DWG\ENGINE\TWD1211G	
SONS NONE	PART NO.
	DATE BY LJS
	SHEET 1 OF 1

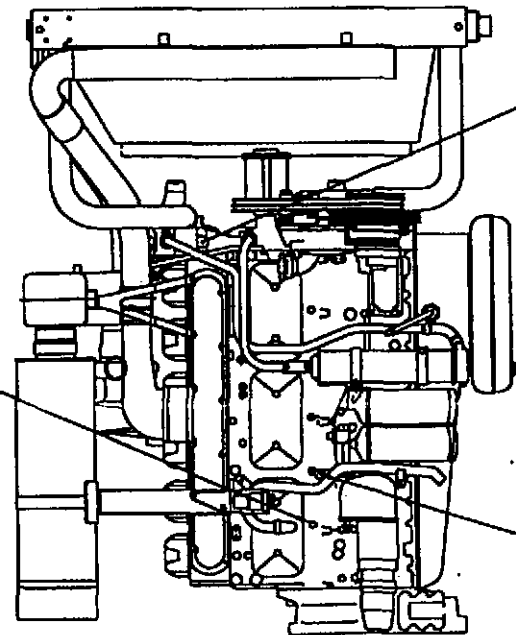
REVISIONS:
1. RELOCATED WATER TEMP SENDER 8-20-00 SAA



HIGH WATER TEMP SWITCH

HIGH WATER PRE-ALARM SWITCH

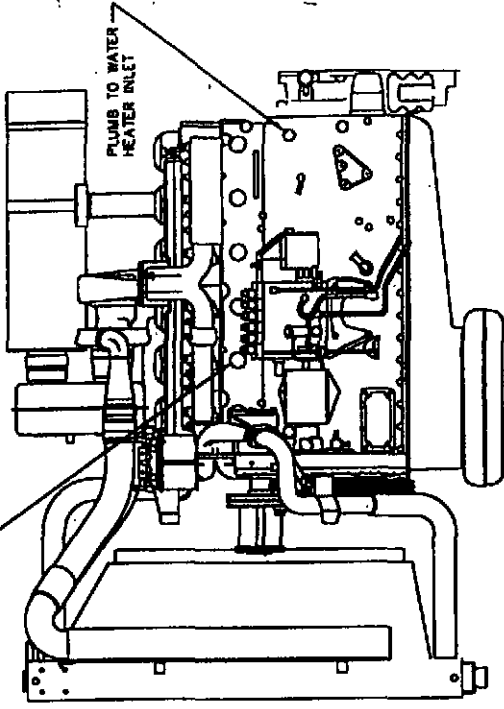
LOW OIL PRESSURE SWITCH



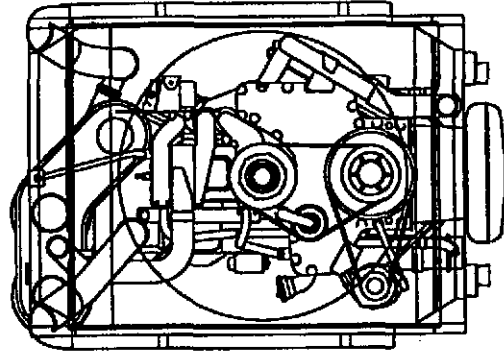
OIL PRESSURE SENDER AND PRE OIL PRESSURE SWITCH

WATER TEMP SENDER

PLUMB FROM WATER HEATER OUTLET AND ALSO PLUMB IN LOW WATER TEMP SWITCH



PLUMB TO WATER HEATER INLET



KATOLIGHT
MINNETONKA, MINNESOTA

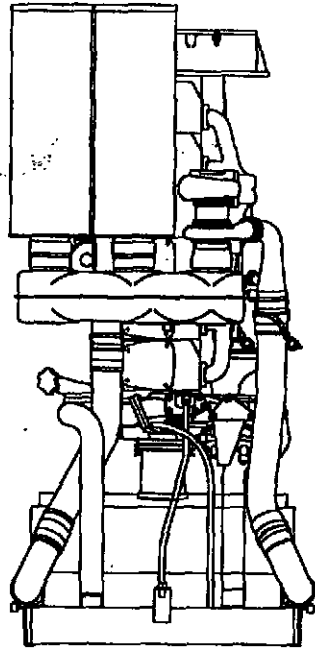
TAD1232GE WATER HEATER PLUMBING & SENDER LOCATIONS

SIZE DATE 9-8-98 DWG NO F:\DWG\ENGINE\TAD1232GE

SCALE NONE PART NO DWG BY LJS

SHEET 1 OF 1

REVISION:
1. RELOCATED WATER TEMP SENDER 6-20-00 SAA



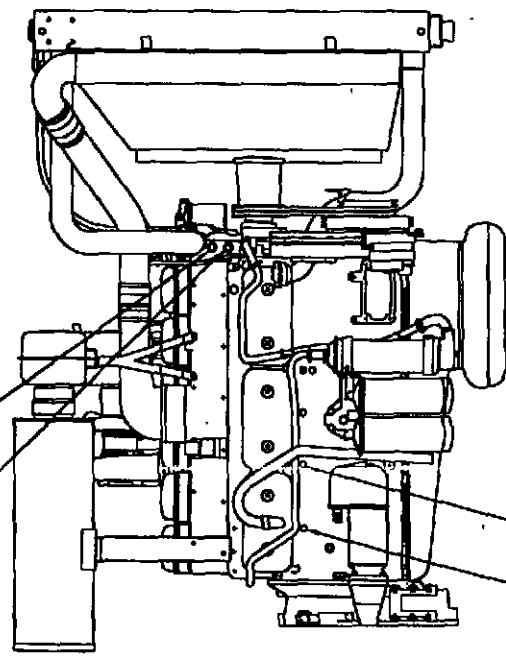
HIGH WATER PRE-ALARM SWITCH

HIGH WATER TEMP SWITCH

WATER TEMP SENDER
TEE OFF VENT LINE

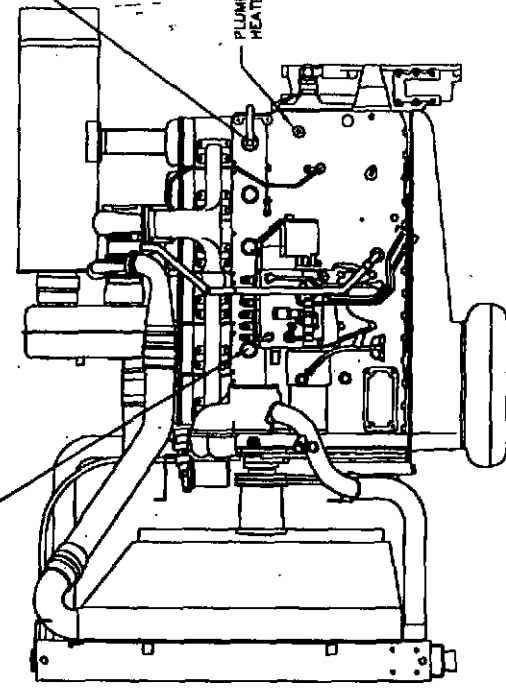
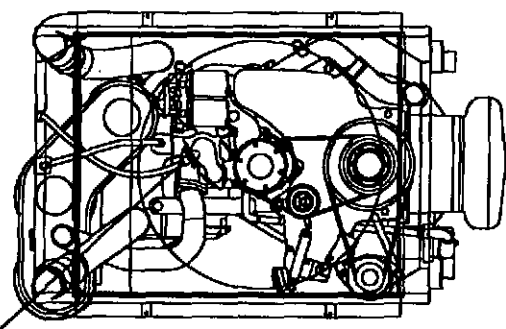
PLUMB FROM WATER HEATER OUTLET

ALSO PLUMB IN LOW WATER TEMP SWITCH



OIL PRESSURE SENDER
AND
PRE. OIL PRESSURE SWITCH

LOW OIL PRESSURE SWITCH



PLUMB TO WATER
HEATER INLET

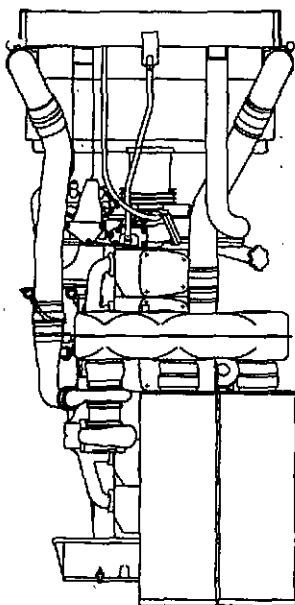
KATOLIGHT
MINNETONKA, MINNESOTA

TAD1030GE WATER HEATER PLUMBING & SENDER LOCATIONS

SIZE (DIA) 8 DWG NO F:\DWG\ENGINE\TAD1030GE

SCALE NONE PART NO DWG BY LJS SHEET 1 OF 1

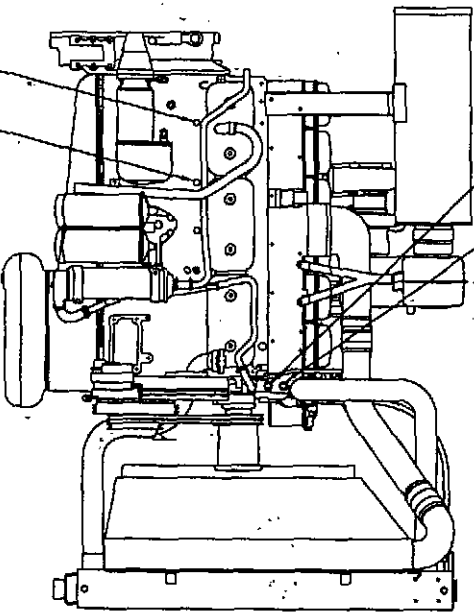
REVISIONS: 1. MOVED ONE SENSOR LOCATION 12-22-98 LJS
2. RELOCATED WATER TEMP SENDER 6-20-00 SAA



HIGH WATER PRE-ALARM SWITCH
 HIGH WATER TEMP SWITCH

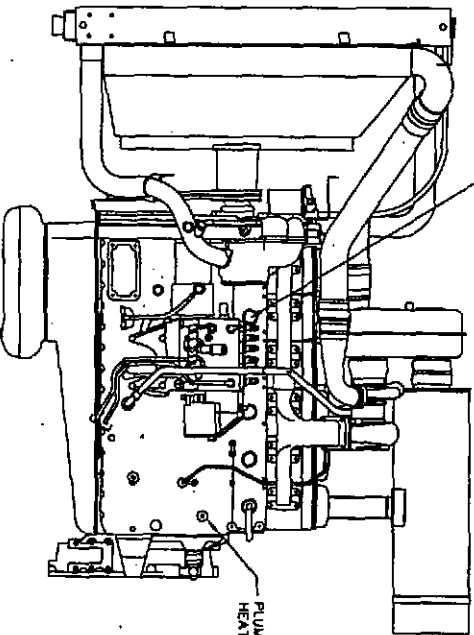
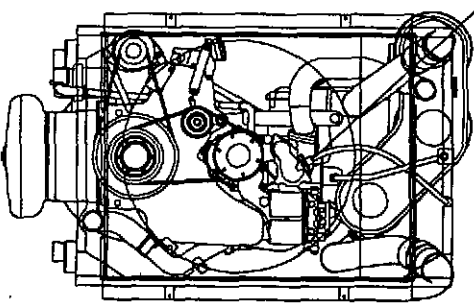
WATER TEMP SENDER
 TEE OFF OF VENT LINE

PLUMB FROM WATER HEATER OUTLET
 AND
 PLUMB IN LOW WATER TEMP SWITCH



OIL PRESSURE SENDER
 AND
 PRE-OIL PRESSURE SWITCH

LOW OIL PRESSURE SWITCH

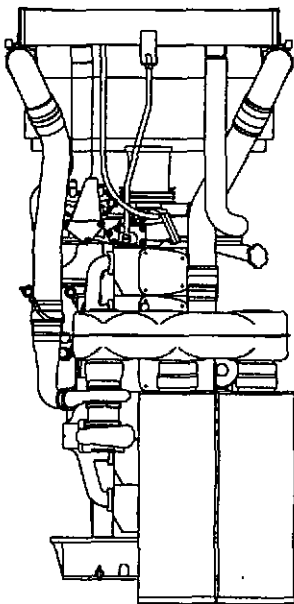


PLUMB TO WATER
 HEATER INLET

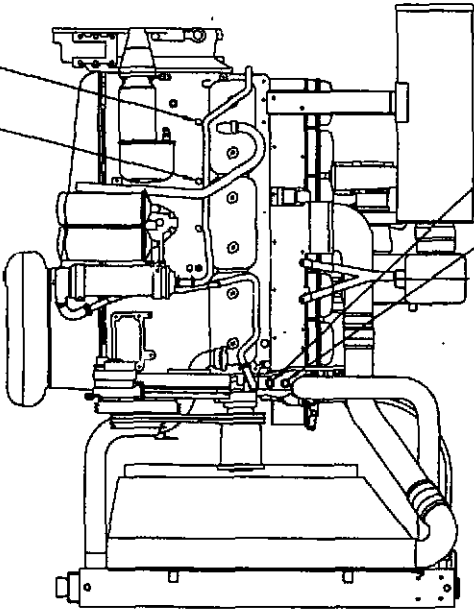
ORIGINAL

- REVISIONS:
 1. MOVED ONE SENSOR LOCATION 12-22-98 LJS
 2. MOVED LOW WATER TEMP SWITCH LOCATION 4-10-01 JAK

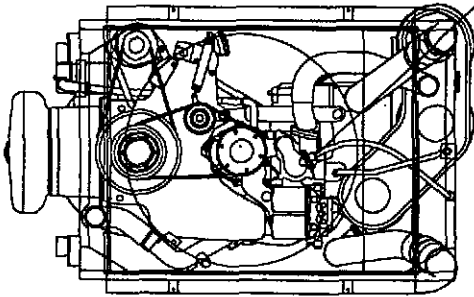
		MANKATO, MINNESOTA	
		TAD103065 WATER HEATER PLUMBING & SENDER LOCATIONS	
SIZE	PART	DWG NO	OWN BY
B	9-8-98	F:\0HWG\ENGINE\TAD103065	LJS
SCALE	NONE	PART NO	SHEET 1 OF 1



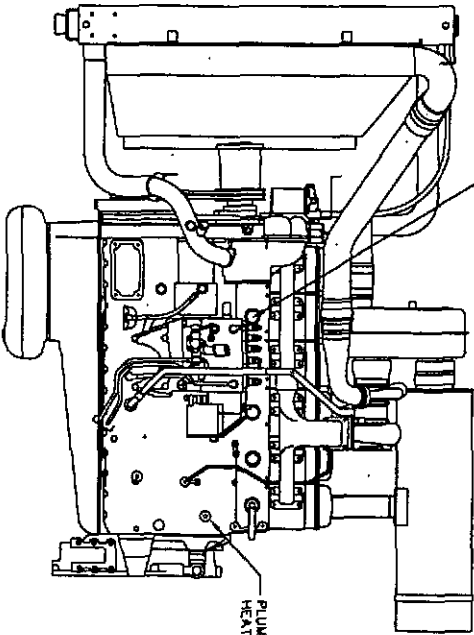
HIGH WATER PRE-ALARM SWITCH
HIGH WATER TEMP SWITCH
WATER TEMP SENDER TIE OFF OF VENT LINE



OIL PRESSURE SENDER AND PRE. OIL PRESSURE SWITCH
LOW OIL PRESSURE SWITCH



PLUMB FROM WATER HEATER OUTLET AND PLUMB IN LOW WATER TEMP SWITCH



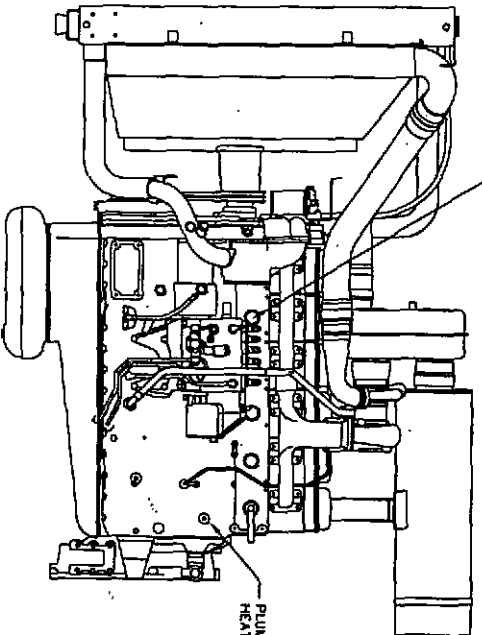
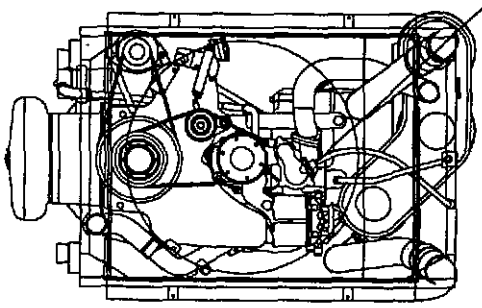
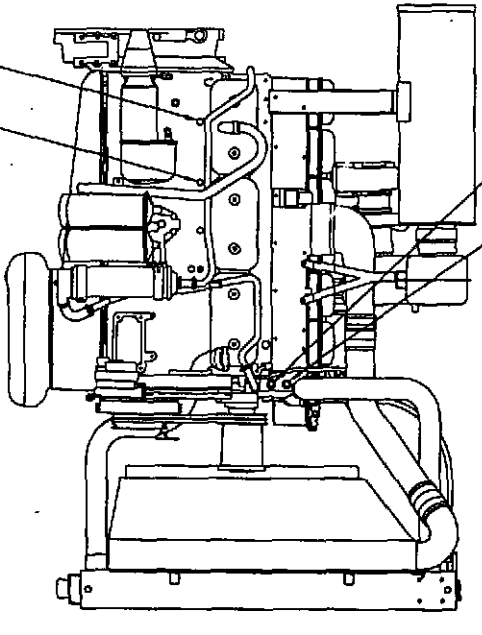
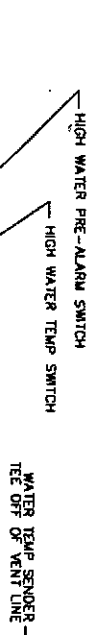
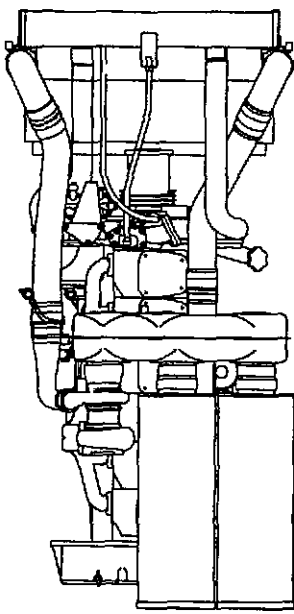
PLUMB TO WATER HEATER INLET

ORIGINAL

- REVISIONS:
1. MOVED ONE SENSOR LOCATION 12-22-98 LJS
2. MOVED LOW WATER TEMP SWITCH LOCATION 4-10-01 JAK

KATOLIGHT
MANKATO, MINNESOTA

TAD1030GE WATER HEATER PLUMBING & SENDER LOCATIONS			
SIZE	DATE	DWG NO	OWN DR LJS
B	9-8-98	F:\DWG\ENGINE\TAD1030GE	
SCALE	NONE	PART NO	OWN DR LJS
			SHEET 1 OF 1



HIGH WATER PRE-ALARM SWITCH

HIGH WATER TEMP SWITCH

WATER TEMP SENDER
TEE OFF OF VENT LINE

PLUMB FROM WATER HEATER OUTLET
AND
PLUMB IN LOW WATER TEMP SWITCH

PLUMB TO WATER
HEATER INLET

OIL PRESSURE SENDER
AND
PRE. OIL PRESSURE SWITCH

LOW OIL PRESSURE SWITCH

ORIGINAL

REVISIONS:
1. MOVED ONE SENSOR LOCATION 12-22-98 LJS
2. MOVED LOW WATER TEMP SWITCH LOCATION 4-10-01 JAK

KATOLIGHT		<small>MINNETONKA, MINNESOTA</small>	
TAD1030GE WATER HEATER PLUMBING & SENDER LOCATIONS			
SIZE	DATE	DWG NO.	DMW BY
8	9-8-98	F:\DWG\ENGINE\TAD1030GE	LJS
SCALE	NONE	PART NO.	SHEET 1 OF 1

Leon Sieberg

From: Dave Kammerer
Sent: Thursday, May 28, 1998 1:21 PM
To: Bruce Prange; Jeff Scholten; Leon Sieberg; Matt Lade; Reed Allis; Mike Dauffenbach
Subject: FW: Block Heater Plumbing

Hello,

Richard Woody has reviewed the drawings that we had sent to him and here are his recommendations.

Any questions or comments, please let me know.

Dave Kammerer

-----Original Message-----

From: RICHARD WOODY [SMTP:VP.WOODY@MEMO.VOLVO.SE]
Sent: Thursday, May 28, 1998 12:40 PM
To: DAVEK@KATOLIGHT.com
Subject: Block Heater Plumbing

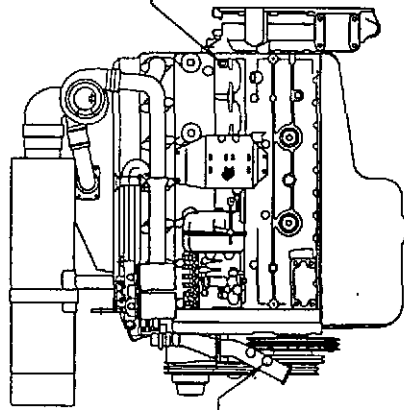
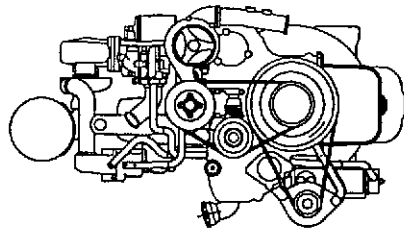
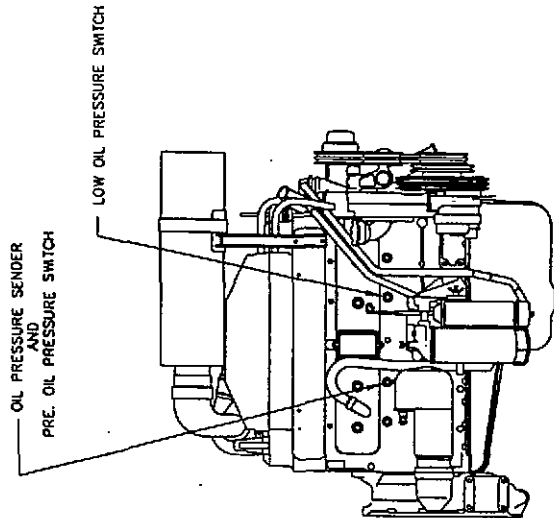
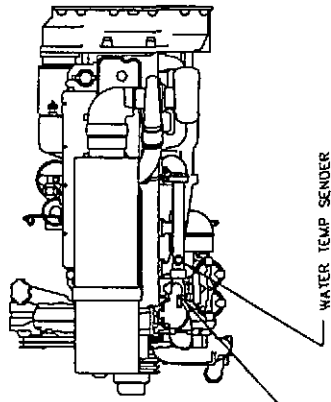
----- Received from VP.WOODY 757 436 2800 98-05-28 19:40 -----

Dear Dave,

The 16 liter engines again look good. I was talking with several people in Sweden in reference to this and they say they have been plumbing them the way it shows in the book for years. The ones in P.A. were not plumbed as per the book. Let's leave the 16 liter engines as they are. The 12 liter engines I would like to take water from plug "C" on the drawing which is the block drain. Then I would like to return it to the big frost plug on the block. There are 6 of these on these engines. pick the one closest to the front of the engine that we can have access to. I would like to do the same with the 1030GE engines. Use "C" on the drawing which is the block drain and return big frost plug at the front of the block, as close to the front as we can get. The TAD 730G we can take water from "C" and return it as close to the front at the big frost plugs as we can get. The TWD 710 G we should take water from the drain, "C" and go back to the inlet pipe on the circulation pump. I think this will resolve our block heater problems. I want to see the block temperatures at 120°. If we put an engine in a colder region we may need to go over the 2000 w. recommendation. If you have any questions please call, fax, or memo me.

Best Regards
Rich

----- 98-05-28 19:40 ----- Sent to _____
-> DAVEK(a)KATOLIGHT.com



KATOLIGHT

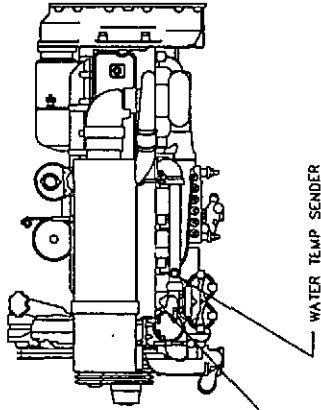
MANKATO, MINNESOTA

TWD610C WATER HEATER PLUMBING & SENDER LOCATIONS

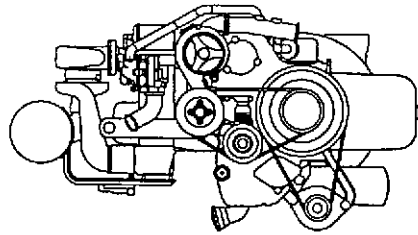
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SCALE NONE PART NO

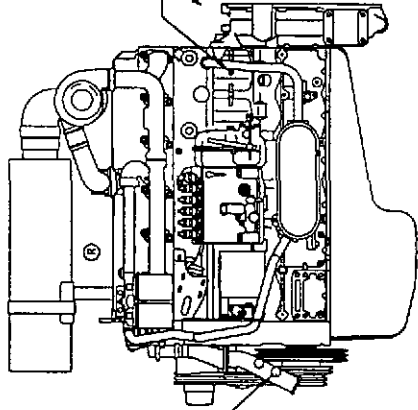
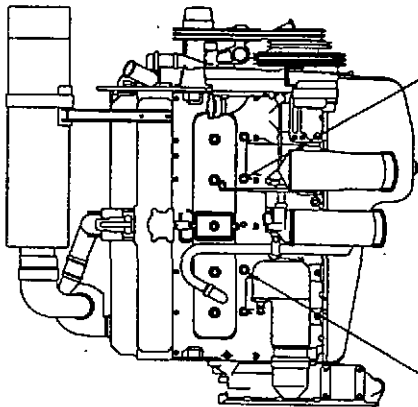
DWG BY LJS SHEET 1 OF 1



WATER TEMP SENDER



LOW OIL PRESSURE SWITCH



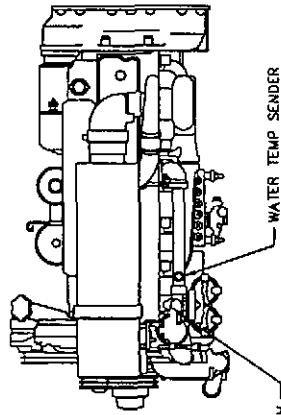
KATOLIGHT

MANKATO, MINNESOTA

1D710G WATER HEATER PLUMBING & SENDER LOCATIONS

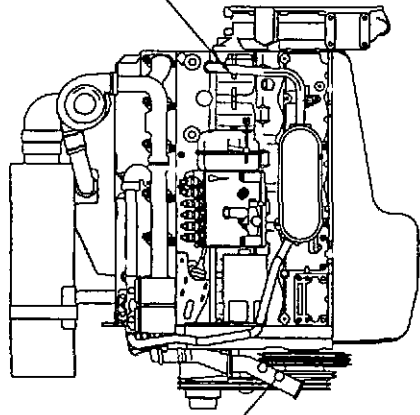
DATE: 9-8-98 DWG. NO. F:\DWG\ENGINE\1D710G

SCALE: NONE PART NO. DWN BY: LJS SHEET 1 OF 1



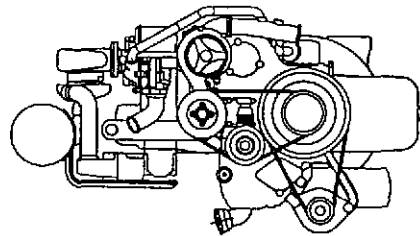
WATER TEMP SENDER

HIGH WATER PRE-ALARM SWITCH
AND
HIGH WATER TEMP SWITCH

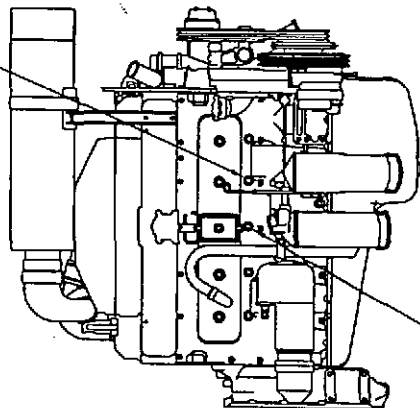


PLUMB FROM WATER HEATER OUTLET
AND
ALSO PLUMB IN LOW WATER TEMP SWITCH

PLUMB TO WATER
HEATER INLET



LOW OIL PRESSURE SWITCH



OIL PRESSURE SENDER
AND
PRE. OIL PRESSURE SWITCH

KATOLIGHT

MANCATO, MINNESOTA

TWD710G WATER HEATER PLUMBING & SENDER LOCATIONS

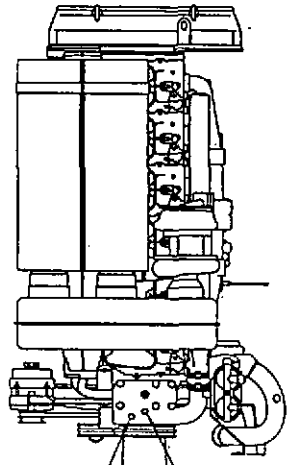
SIZE DATE
B 9-8-98

DWG NO
9-8-98

F:\DWG\ENGINE\TWD710G

SCALE NONE PART NO

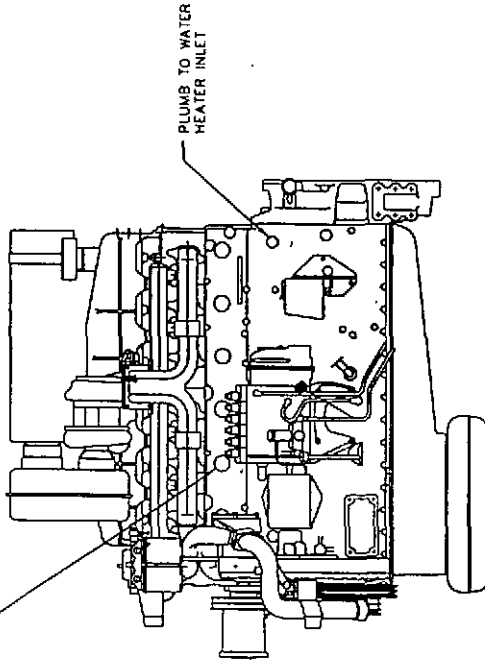
DWR BY LJS SHEET 1 OF 1



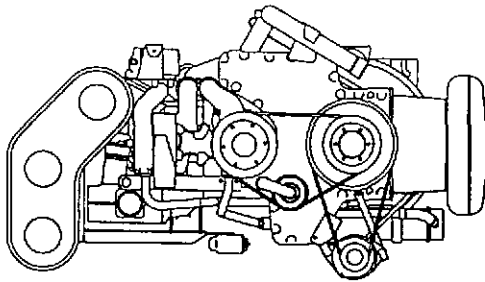
HIGH WATER TEMP SWITCH

HIGH WATER PRE-ALARM SWITCH

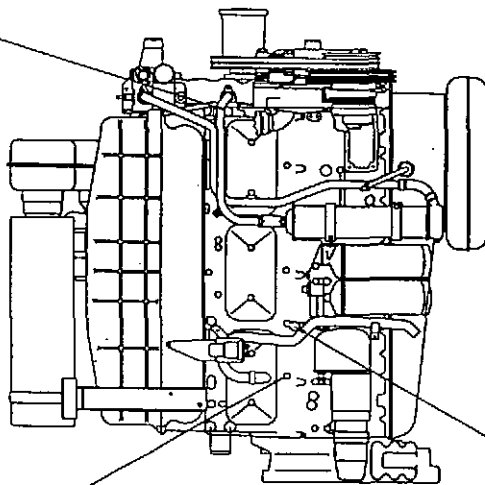
PLUMB FROM WATER HEATER OUTLET AND ALSO PLUMB IN LOW WATER TEMP SWITCH



PLUMB TO WATER HEATER INLET



WATER TEMP SENDER



LOW OIL PRESSURE SWITCH

OIL PRESSURE SENDER AND PRE. OIL PRESSURE SWITCH

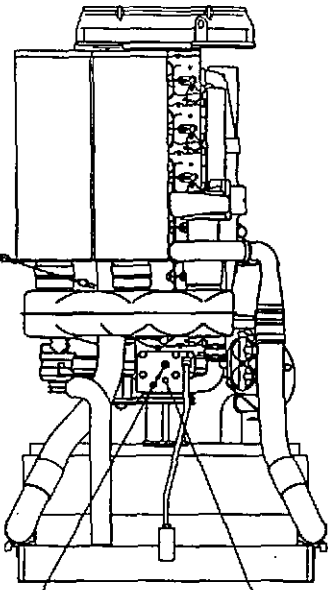
KATOLIGHT

WABATO, MINNESOTA

TWD1211C WATER HEATER PLUMBING & SENDER LOCATIONS

SIZE DATE B 9-8-98 DWG NO F:\DWG\ENGINE\TWD1211C

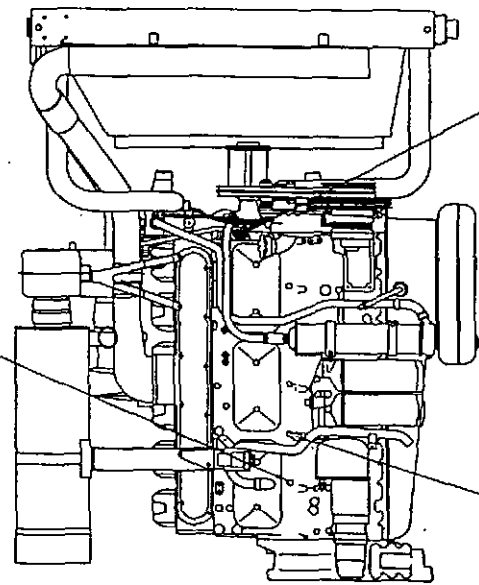
SCALE NONE PART NO OWN BY LJS SHEET 1 OF 1



HIGH WATER TEMP SWITCH

HIGH WATER PRE-ALARM SWITCH

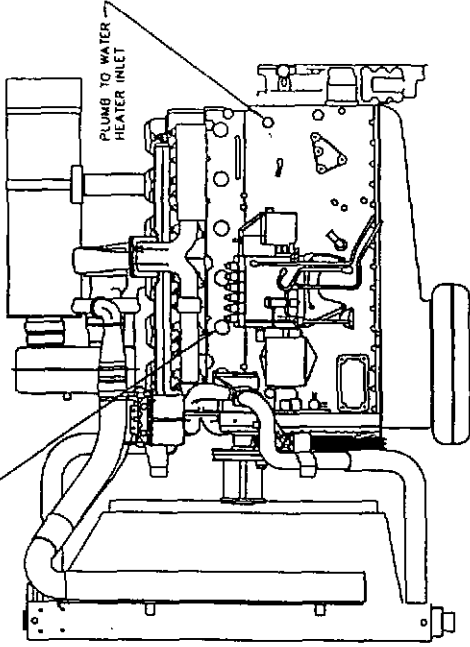
LOW OIL PRESSURE SWITCH



OIL PRESSURE SENDER AND PRE. OIL PRESSURE SWITCH

WATER TEMP SENDER

PLUMB FROM WATER HEATER OUTLET AND ALSO PLUMB IN LOW WATER TEMP SWITCH



PLUMB TO WATER HEATER INLET

KATOLIGHT

MANFAC. MINNESOTA

TA01232GE WATER HEATER PLUMBING & SENDER LOCATIONS

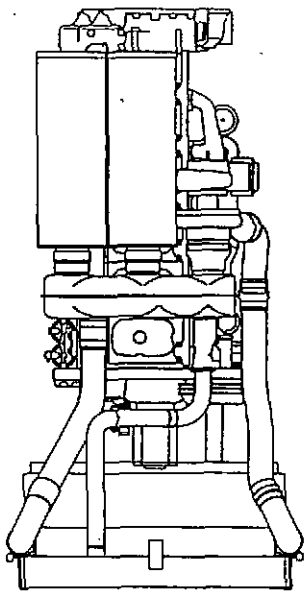
SIZE DATE DWG NO F:\DWG\ENGINE\TA01232GE

B 9-8-98

SCALE NONE PART NO

DRW BY LJS SHEET 1 OF 1

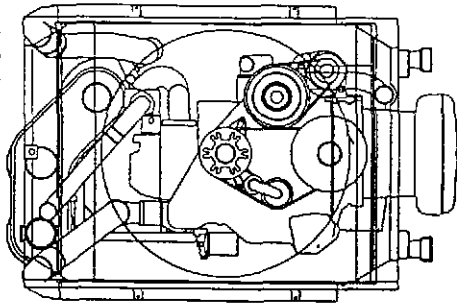
(IF PRE-SHUTDOWN IS REQUIRED)
 NOTE: IF PRE-SHUTDOWN IS REQUIRED KATOLIGHT WILL
 HAVE TO PRE-SHUT DOWN. FURNISHED BY VOLVO
 AND ADD A WATER LIGHTS DUAL SHUTDOWN



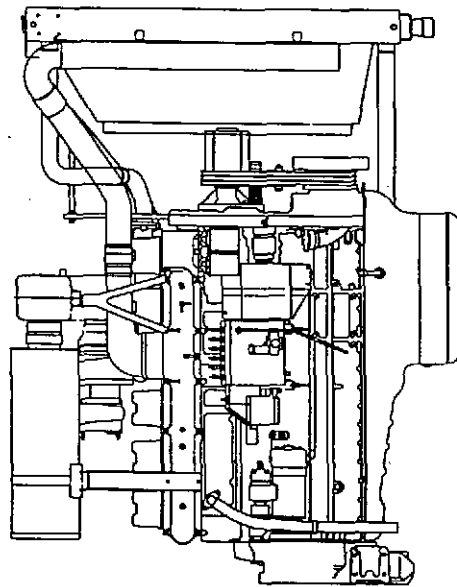
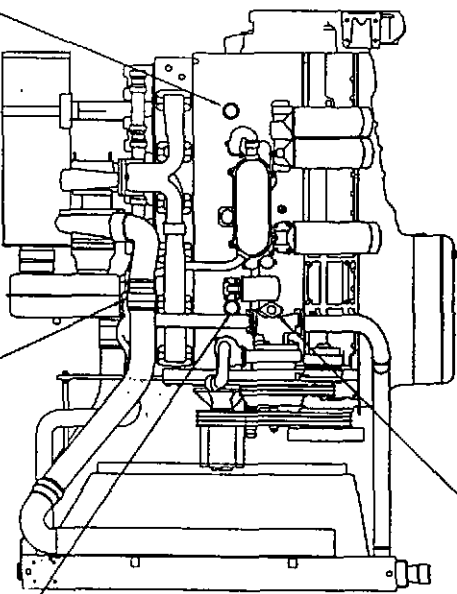
WATER TEMP SENDER
 HIGH WATER TEMP SWITCH
 AND
 HIGH WATER PRE-ALARM SWITCH

PLUMB FROM WATER HEATER OUTLET
 AND
 ALSO PLUMB IN LOW WATER TEMP SWITCH

PLUMB TO WATER
 HEATER INLET



OIL PRESSURE SENDER
 AND
 PRE. OIL PRESSURE SWITCH
 AND
 LOW OIL PRESSURE SWITCH



KATOLIGHT

WABASH, MINNESOTA

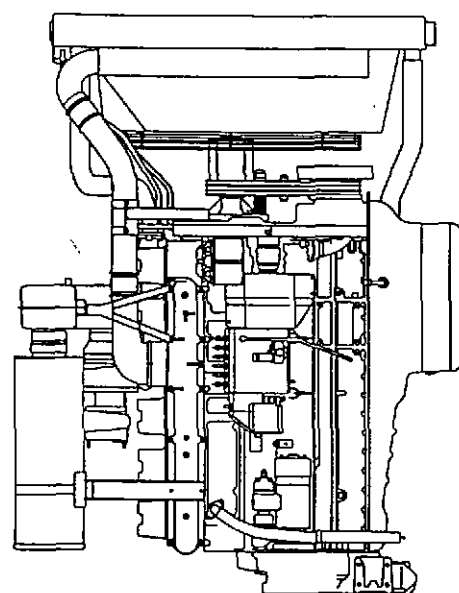
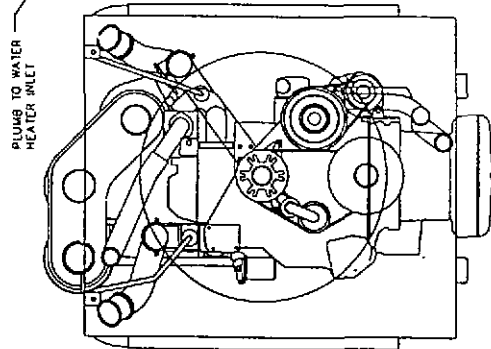
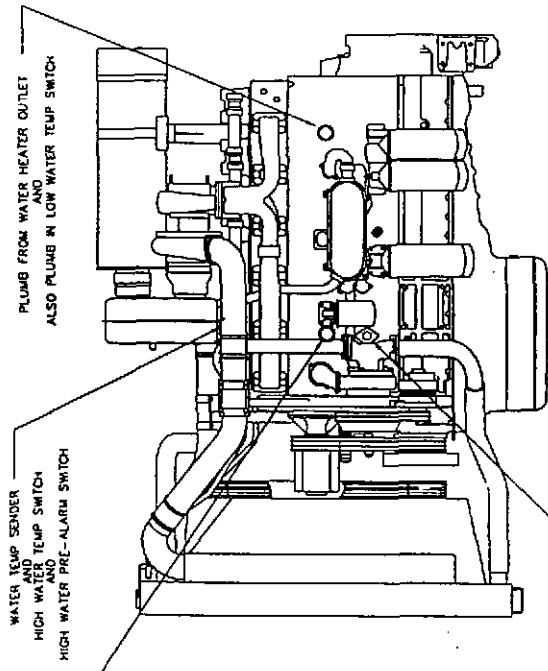
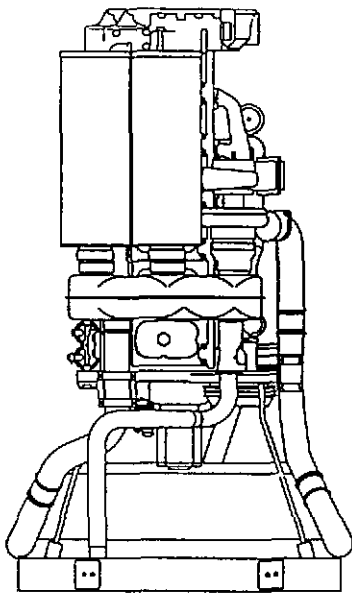
TAD1630GE AND TWO1630GEG

WATER HEATER PLUMBING & SENDER LOCATIONS

SIZE DATE 9-8-98 DWG NO. F:\DWG\ENGINE\TAD1630GE

SCALE NONE PART NO. DWN BY LJS SHEET 1 OF 1

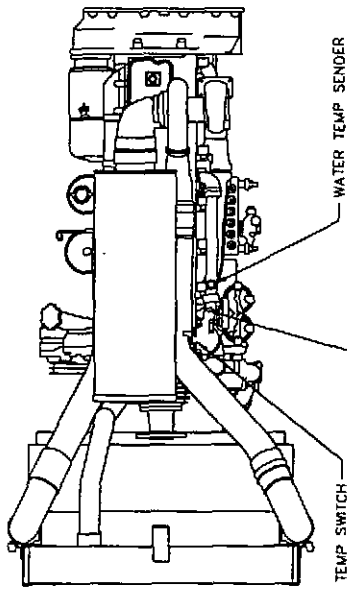
(IF PRE-SHUTDOWN IS REQUIRED)
 NOTE: IF PRE-SHUTDOWN IS REQUIRED KATOLIGHT WILL
 HAVE TO REMOVE SHUTDOWN FURNISHED BY VOLVO
 AND ADD A KATOLIGHTS DUAL SHUTDOWN



OIL PRESSURE SENDER
AND
PRE. OIL PRESSURE SWITCH
AND
LOW OIL PRESSURE SWITCH

KATOLIGHT
 MARSHFIELD, MINNESOTA

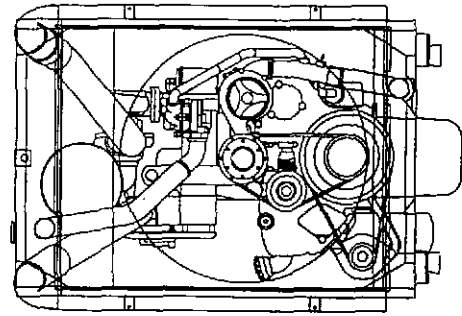
TAD1631GE	
WATER HEATER PLUMBING & SENDER LOCATIONS	
SIZE	DWG NO
B	F:\DWG\ENGINE\TAD1631GE
SCALE	PART NO
NONE	DWN BY LJS SHEET 1 OF 1



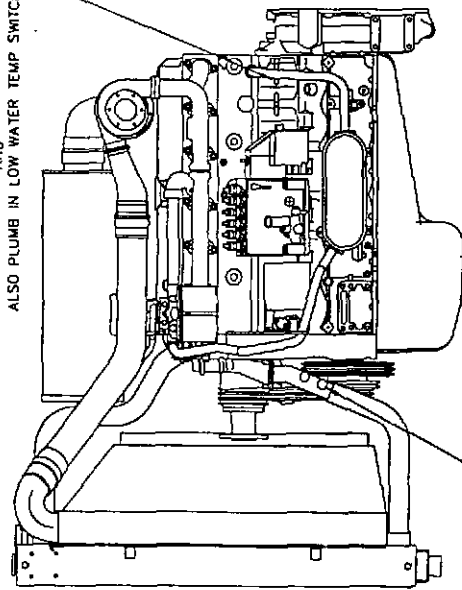
HIGH WATER TEMP SWITCH

WATER TEMP SENDER

LOW OIL PRESSURE SWITCH



PLUMB FROM WATER HEATER OUTLET AND ALSO PLUMB IN LOW WATER TEMP SWITCH



PLUMB TO WATER HEATER INLET

OIL PRESSURE SENDER AND PRE. OIL PRESSURE SWITCH

KATOLIGHT

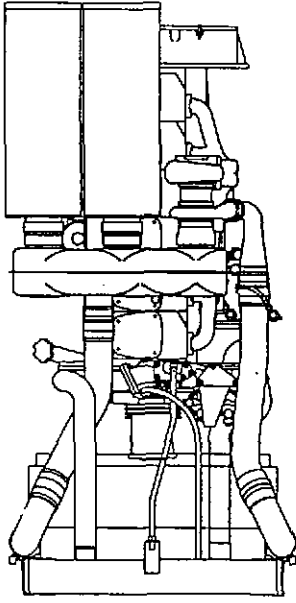
MAKATO, MINNESOTA

TAD730G WATER HEATER PLUMBING & SENDER LOCATIONS

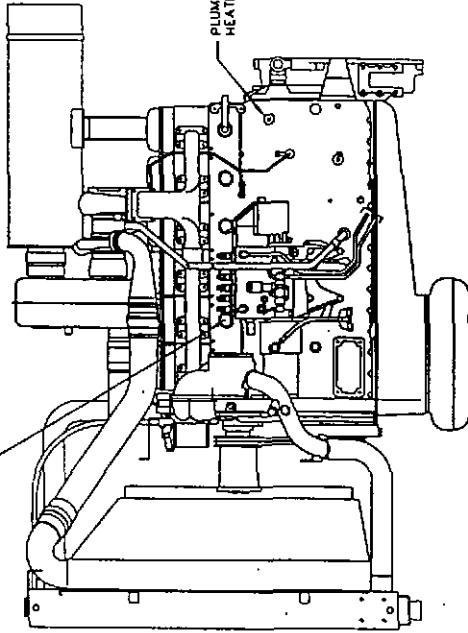
SIZE	DATE	DWG NO
B	9-8-98	F:\DWG\ENGINE\TAD730G

SCALE	NONE	PART NO	OWN BY	LJS	SHEET	1 OF 1
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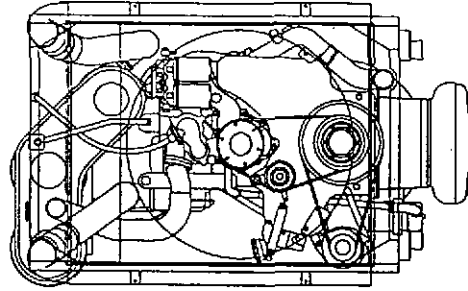
REVISION: 1. MOVED WATER INLET AND OUTLET LOCATION 9-16-98 LJS



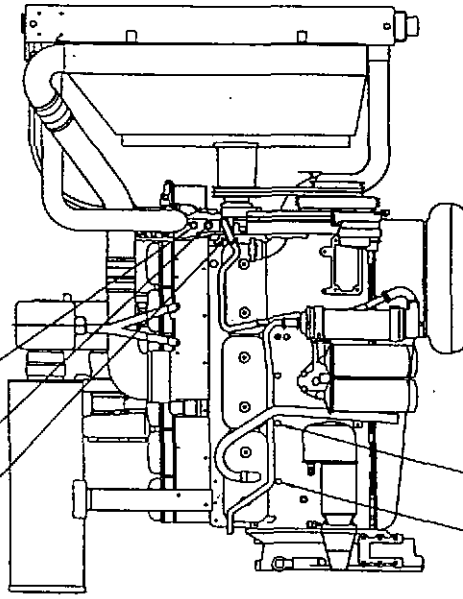
PLUMB FROM WATER HEATER OUTLET
AND
ALSO PLUMB IN LOW WATER TEMP SWITCH



PLUMB TO WATER
HEATER INLET



WATER TEMP SENDER
HIGH WATER PRE-ALARM SWITCH
HIGH WATER TEMP SWITCH



OIL PRESSURE SENDER
AND
PRE. OIL PRESSURE SWITCH
LOW OIL PRESSURE SWITCH

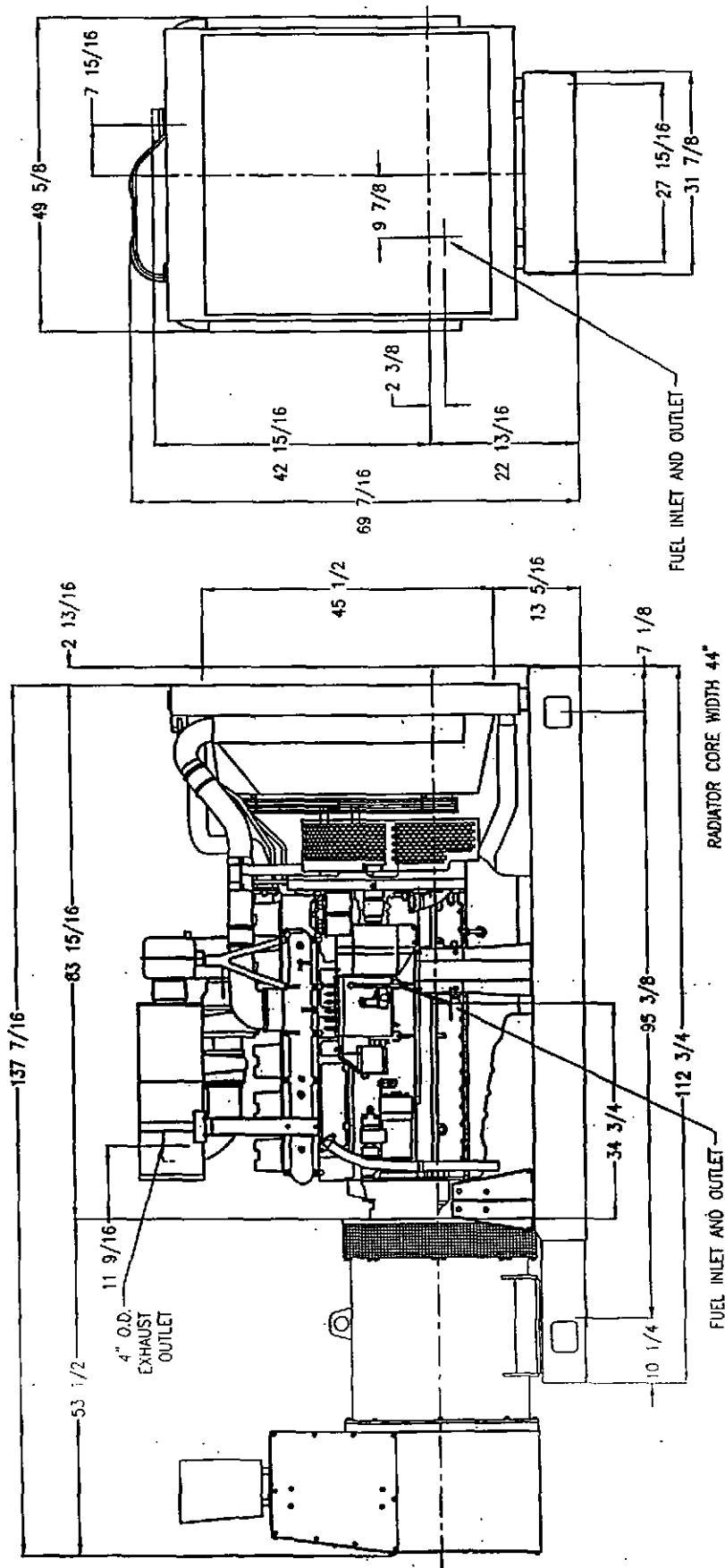
KATOLIGHT

MANIKATO, MINNESOTA

TAD1030GE WATER HEATER PLUMBING & SENDER LOCATIONS

SIZE DATE 9-8-98 DWG NO F:\DWG\ENGINE\TAD1030GE

SCALE NONE PART NO DWH BY LJS SHEET 1 OF 1

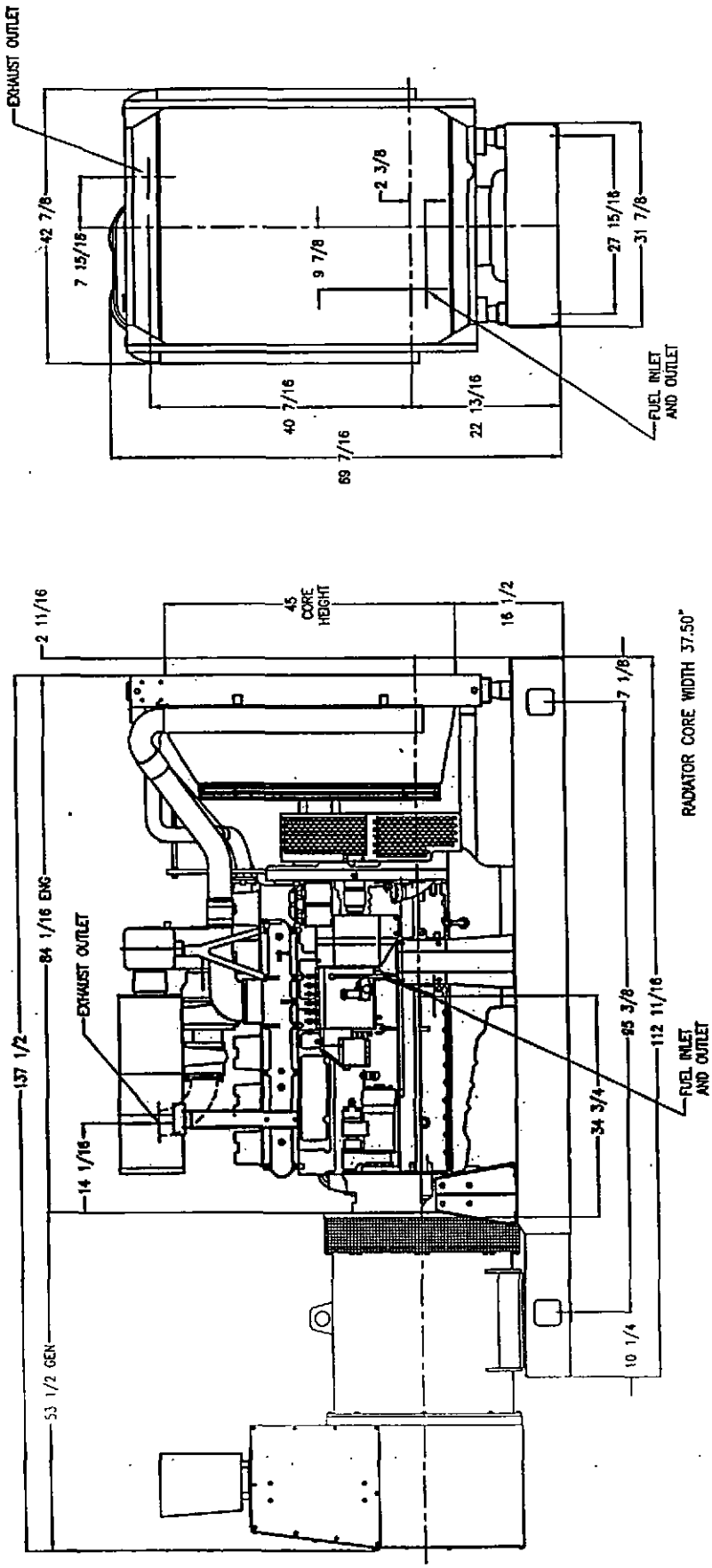


KATOLIGHT
MANKATO, MINNESOTA

ENGINE	GENERATOR	RADIATOR	MODEL
TAD1631CEP	572 RSL	STD W/ENG	D500FV4
SIZE	DATE	DWG NO	100-777
B	10-2-97		
SCALE .077=1		PART NO	DWG BY MRL
			SHEET 1 OF 1

ORIGINAL

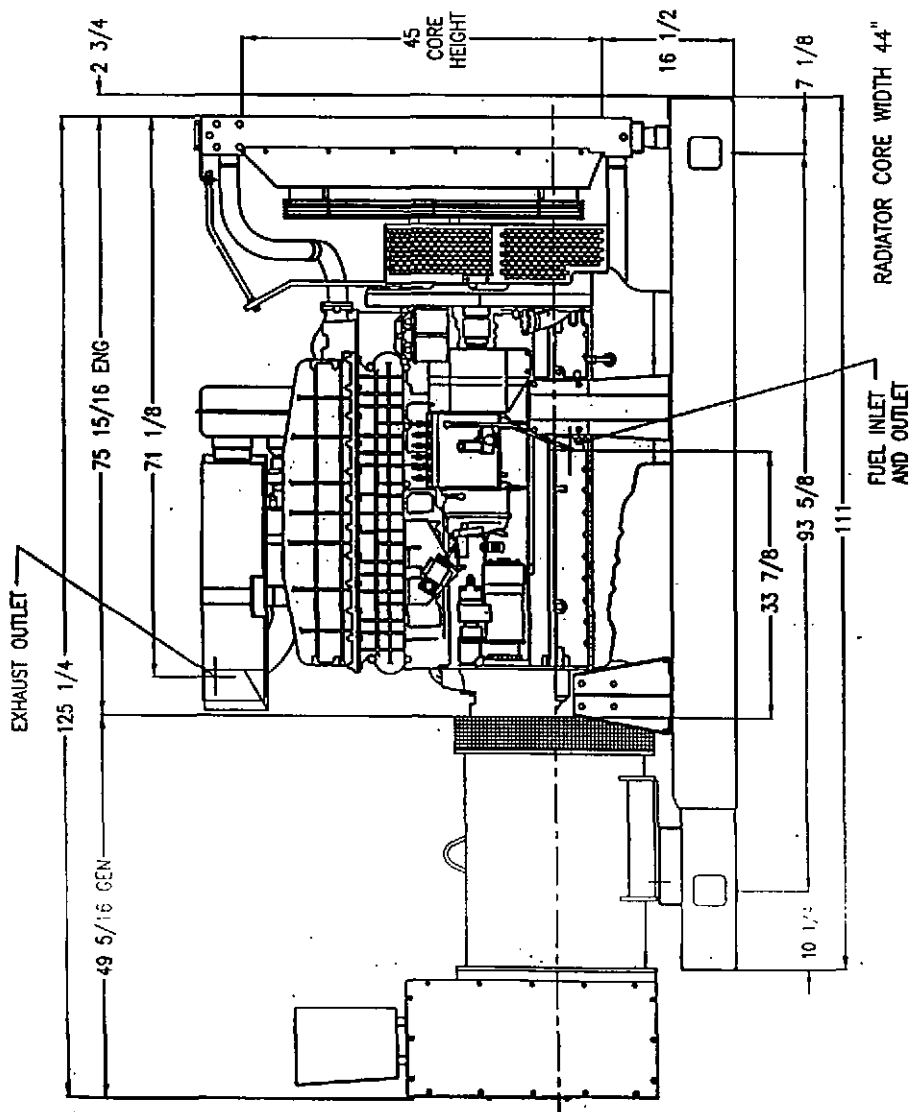
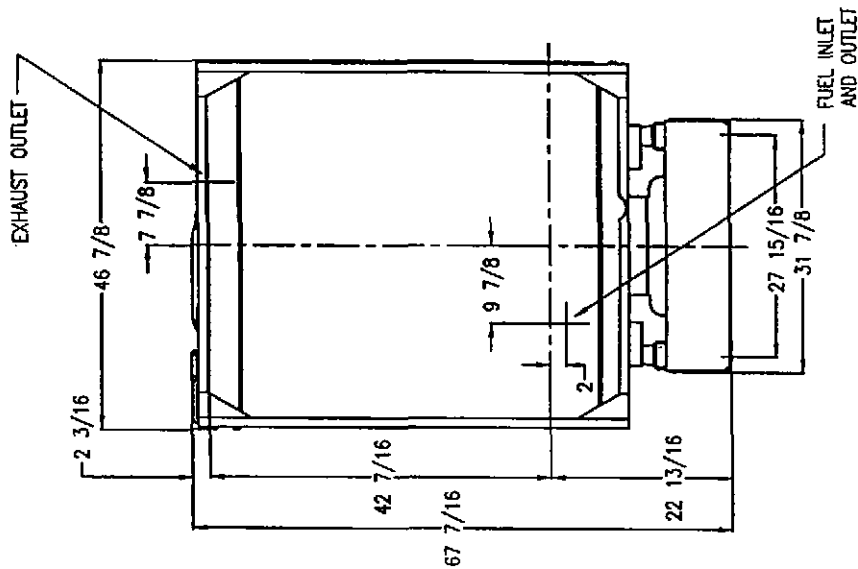
REVISION: 1. UPDATED DWG WITH NEW FLOOR MTG LOCATIONS 5-21-98 LJS



KATOLIGHT
 WANKATO, KANSAS

ENGINE	GENERATOR	RADIATOR	MODEL
TAD1630GEP	572 RSL	STD W/ENG	D450F*V4
SIZE	DATE	DRG NO	100-776
B	5-21-98		
SCALE .077=1	PART NO	DRN BY LJS	SHEET 1 OF 1

ORIGINAL



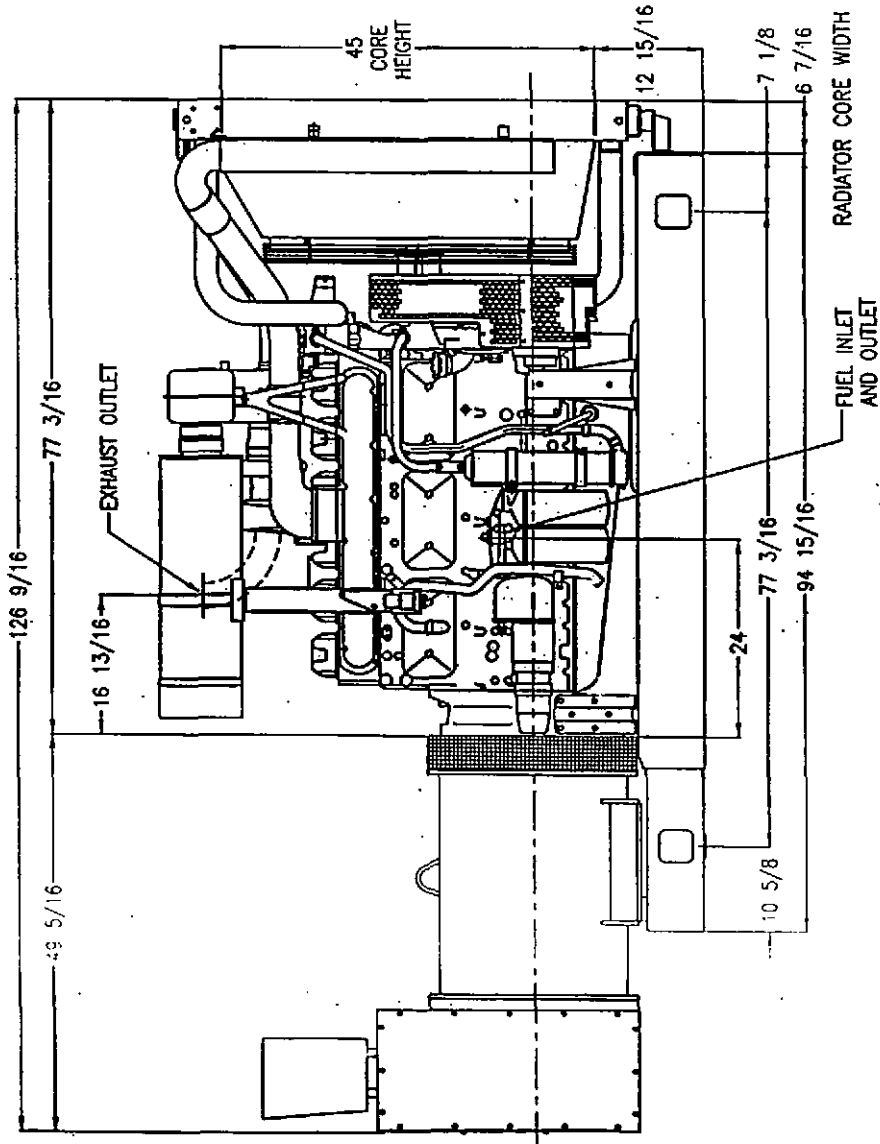
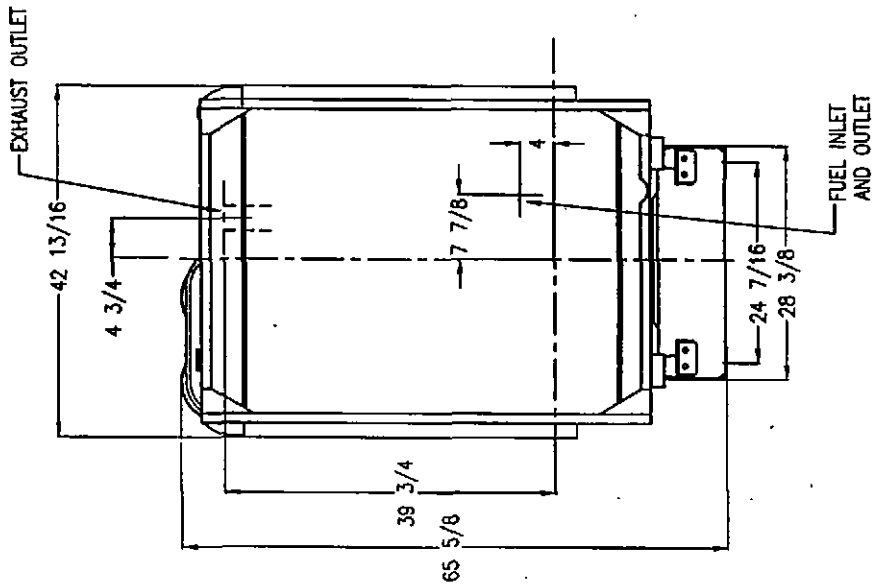
KATOLIGHT

MARKATO, MINNESOTA

ENGINE	GENERATOR	RADIATOR	MODEL
TWD1630CP	433 PSL	STD. W/ENG	D400F*V4
SIZE	DATE	DWG NO	100-775
B	11-14-97	PART NO	DWR BY MRL
SCALE .077=1	SHEET 1 OF 1		

ORIGINAL

- REVISION: 1. ADDED EXHAUST OUTLET 1-20-98 LJS
 2. CHANGED GENERATOR MOUNTING CHANNEL 3-4-98 LJS
 3. UPDATE DWG WITH NEW FLOOR MTG LOCATIONS 5-21-98

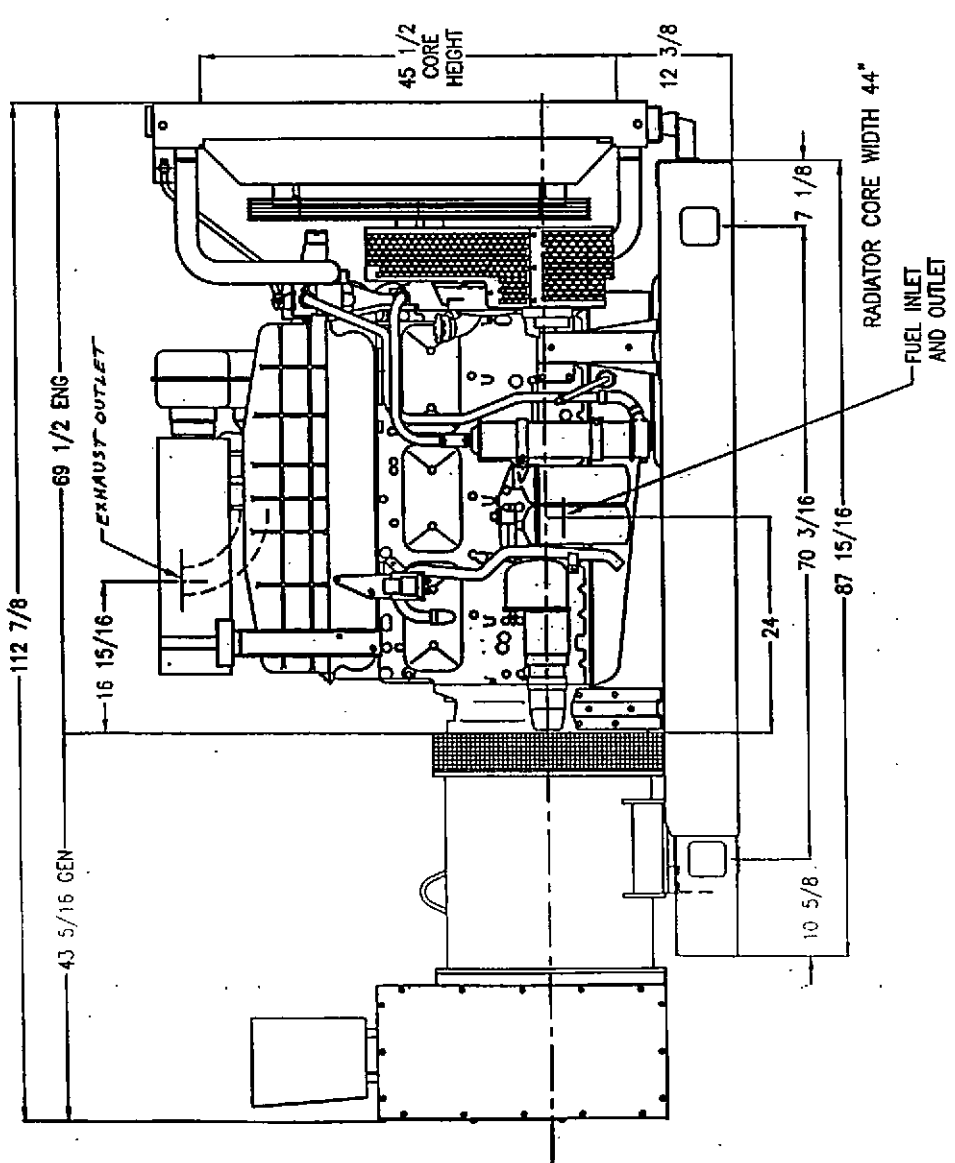
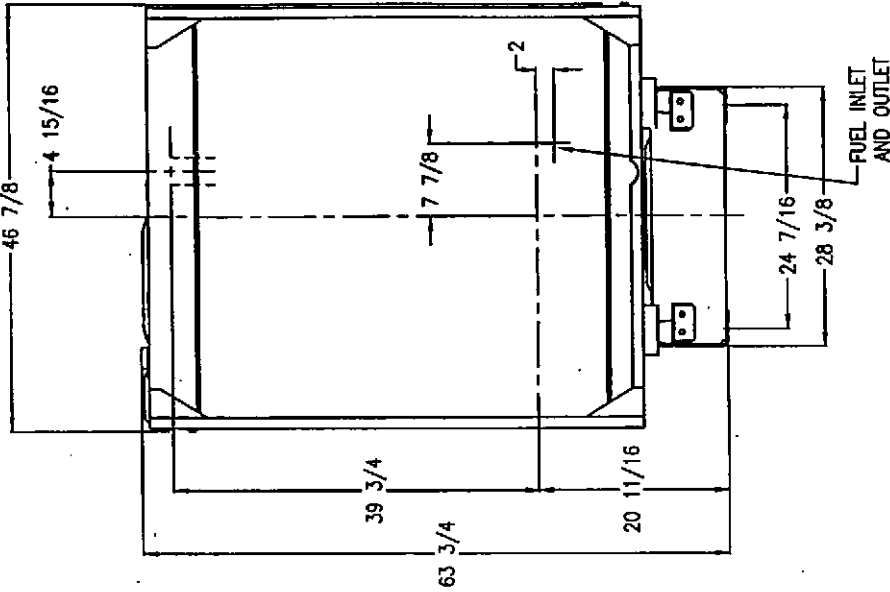


KATOLIGHT
MANKATO, MINNESOTA

ENGINE	GENERATOR	RADIATOR	MODEL
TWD123ZGP	433 PSL	STD W/ENG	D300FV4
SIZE	DWG NO	100-774	
B	8-26-97		
SCALE .077=1 PART NO			DWN BY MRL SHEET 1 OF 1

G. J. GILM

REVISION: 1. UPDATED DWG WITH NEW FLOOR MFG LOCATIONS 5-21-98 LJS

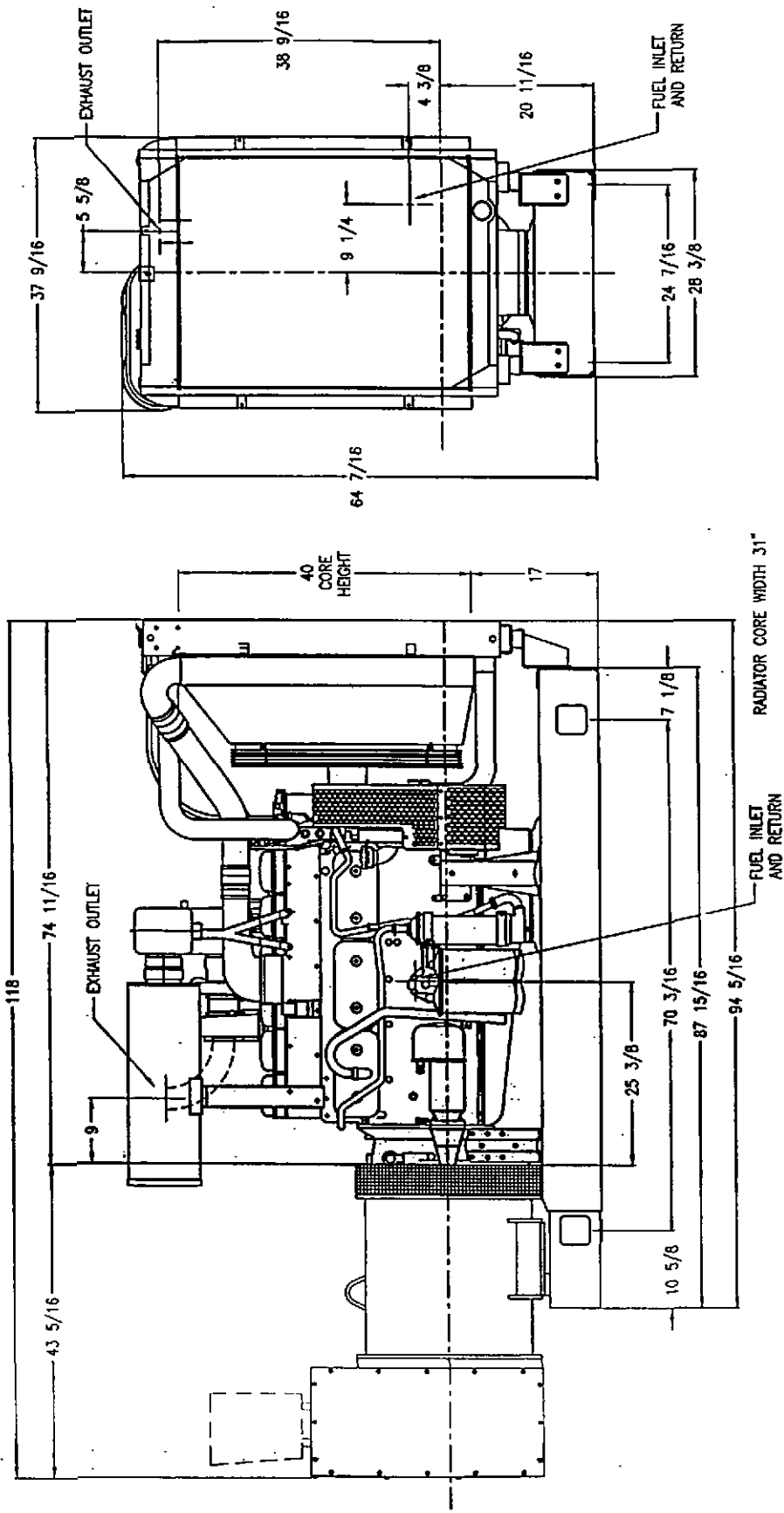


KATOLIGHT

MARQUET, MINNESOTA

ENGINE	GENERATOR	RADIATOR	MODEL
TYD1211CP	432 PSL	STD W/ENG	D300FW4
SIZE	DATE	DWG NO	
B	5-21-98	100-773	
SCALE .077=1 PART NO			DWN BY LJS SHEET 1 OF 1

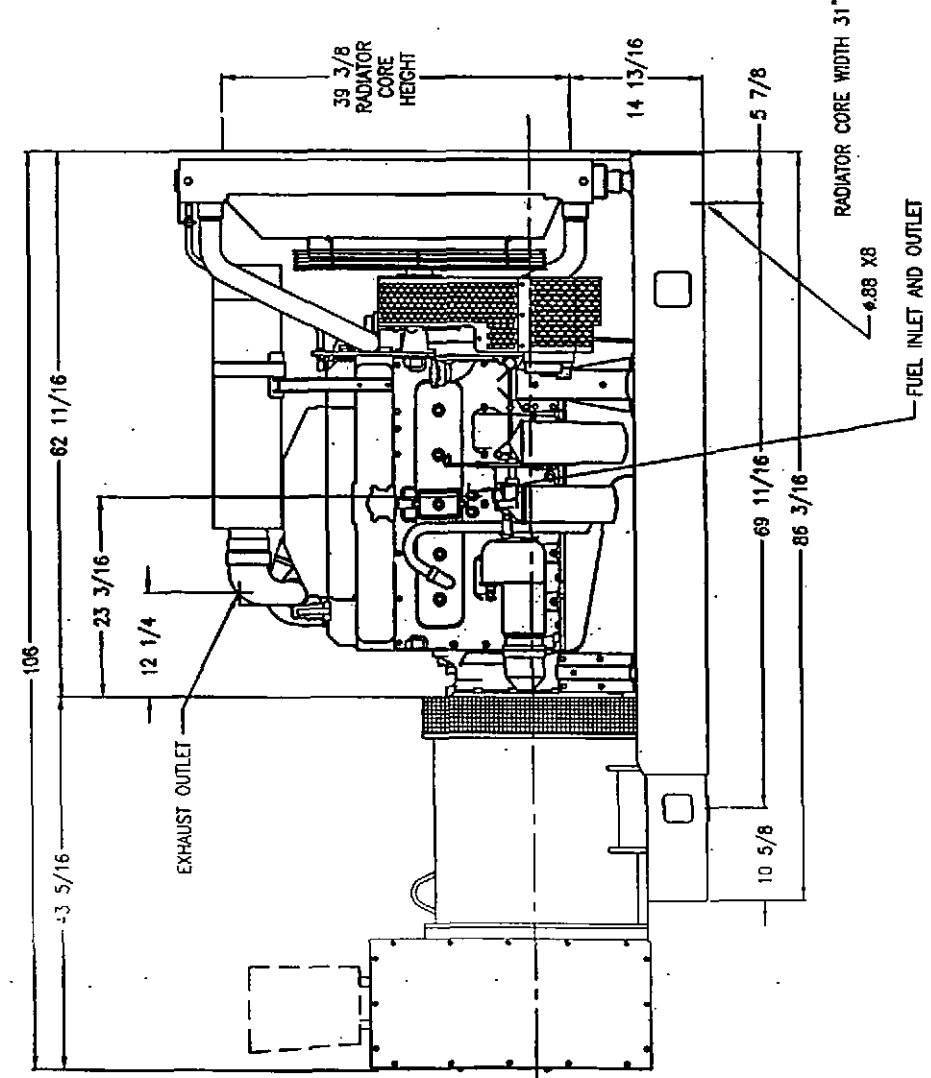
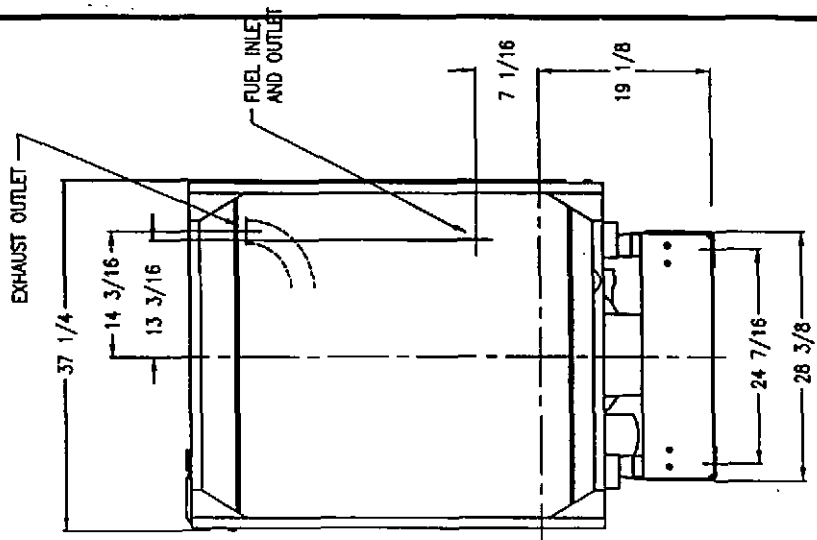
ORIGINAL



KATOLIGHT			
MARQUET, MINNESOTA			
ENGINE	GENERATOR	RADIATOR	HOUSING
TAD1030CEP	432 RSL	STD W/ENG	OPU
SIZE	DATE	DWG NO	
B	1-13-98	100-772	
SCALE	.04=1	PART NO	DWN BY LIS
			SHEET 1 OF 1

ORIGINAL

REVISION: 1. UPDATED DWG WITH NEW FLOOR MTG LOCATIONS 5-21-98 LIS



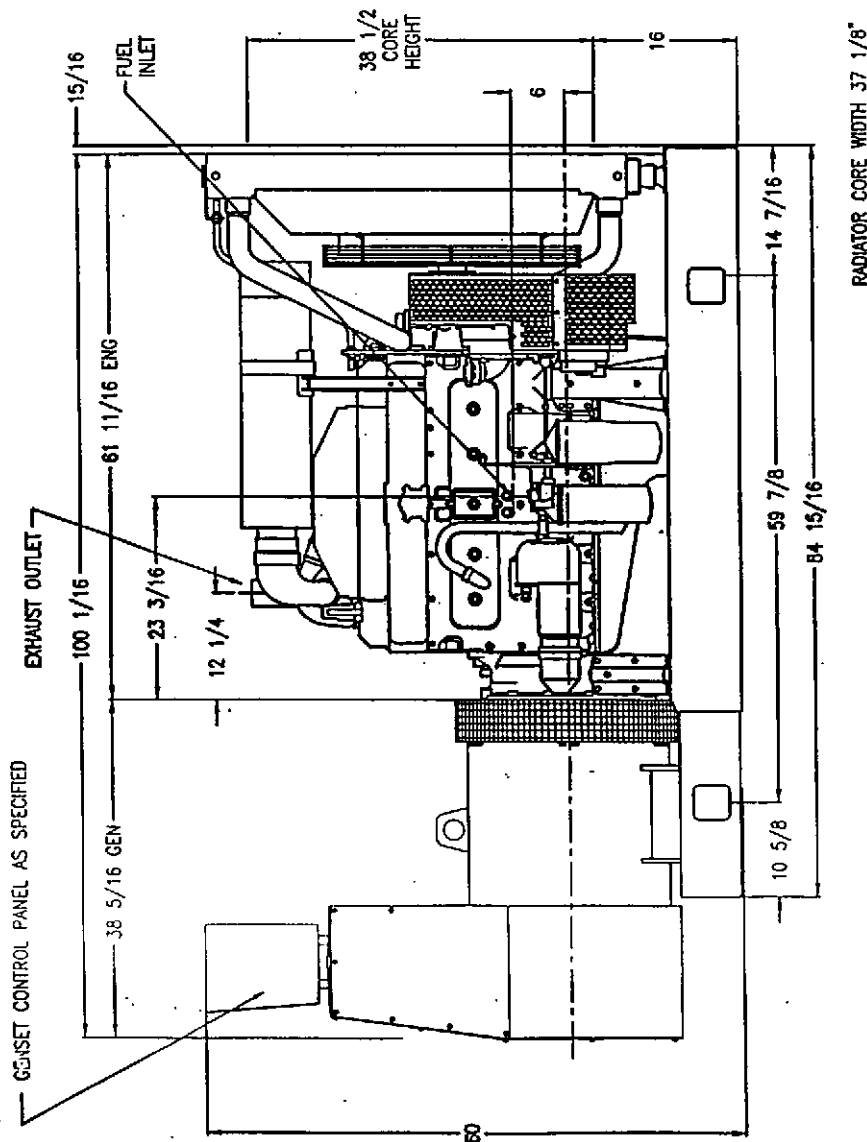
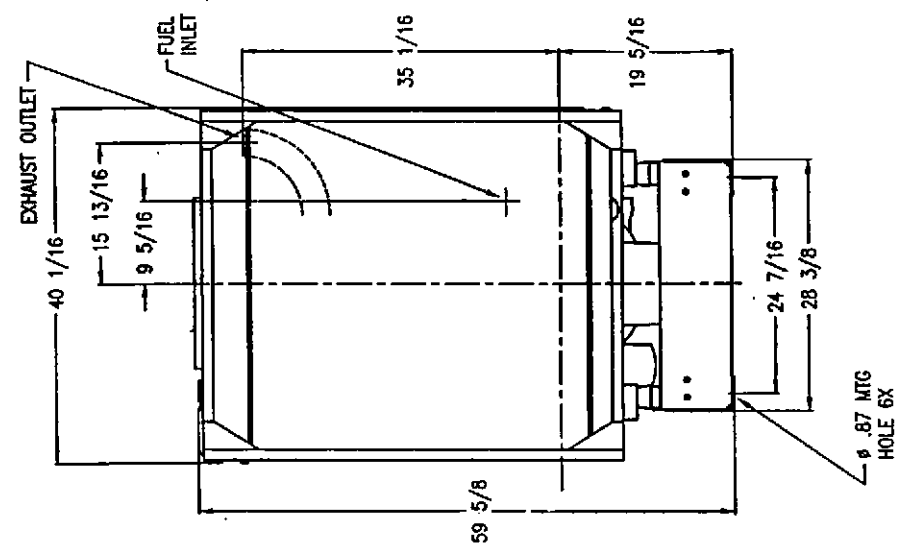
KATOLIGHT

MARKED, MINNESOTA

ENGINE	GENERATOR	RADIATOR	HOUSING
TAD730CP	432 PSL	STD W/ENG	OPU
SIZE	DATE	DWG NO	
B	4-28-98	100-771	
SCALE	.04=1	PART NO	DWG BY LJS
			SHEET 1 OF 1

ORIGINAL

REVISION: 1. UPDATED DWG WITH NEW FLOOR MTG LOCATIONS 5-20-98 LJS

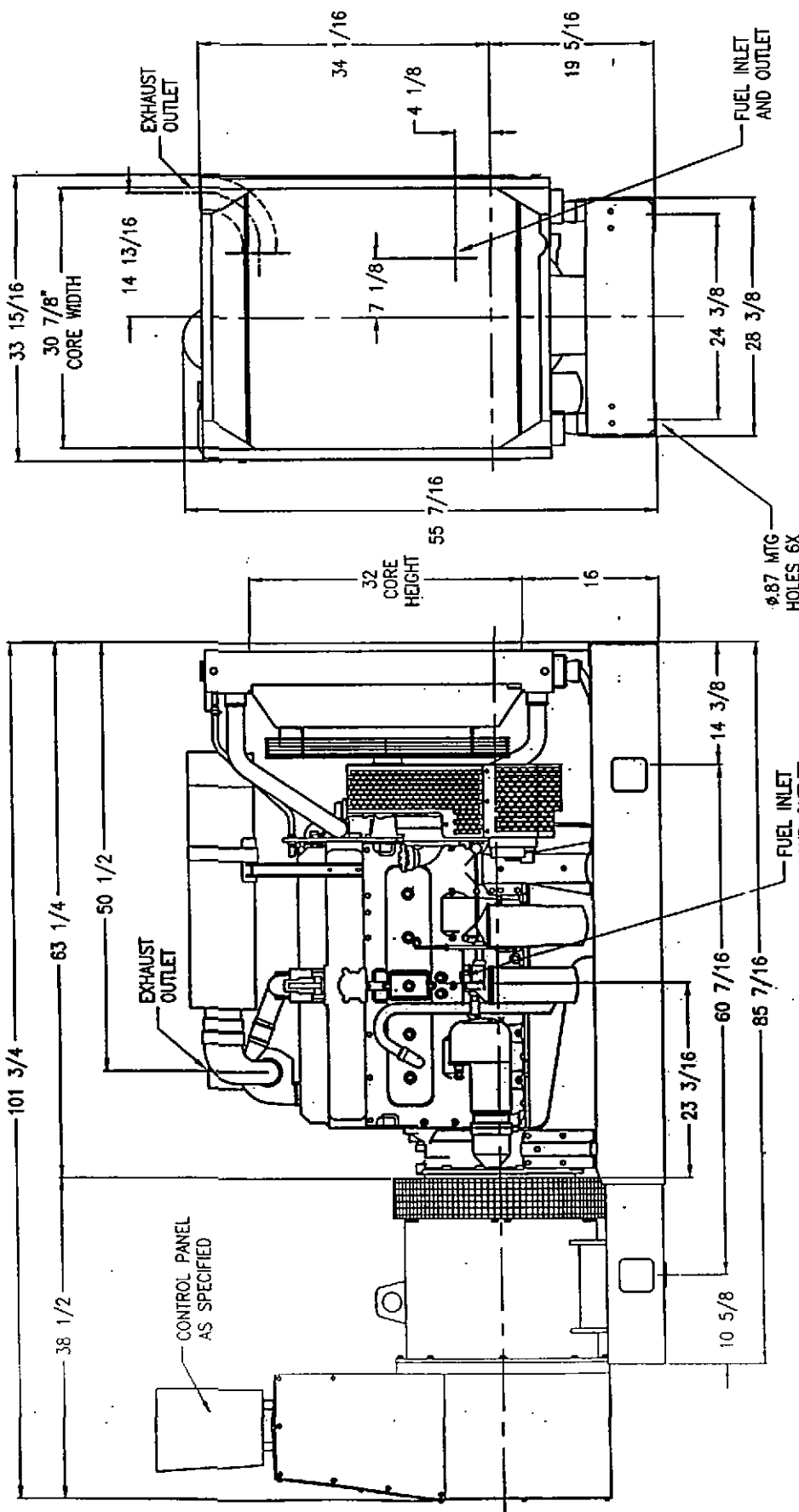


RADIATOR CORE WIDTH 37 1/8"

KATOLIGHT
MANKATO, MINNESOTA

ENGINE	GENERATOR	RADIATOR	HOUSING
TWD710GP	4.31 RSL	STD W/ENG	OPU
SIZE	DATE	DWG NO	
B	4-16-98	100-770	
SCALE	.05=1	PART NO	DWN BY LJS
			SHEET 1 OF 1

REVISION: 1. UPDATED DWG WITH NEW FLOOR MTG LOCATIONS 5-20-98 LJS
ORIGINAL

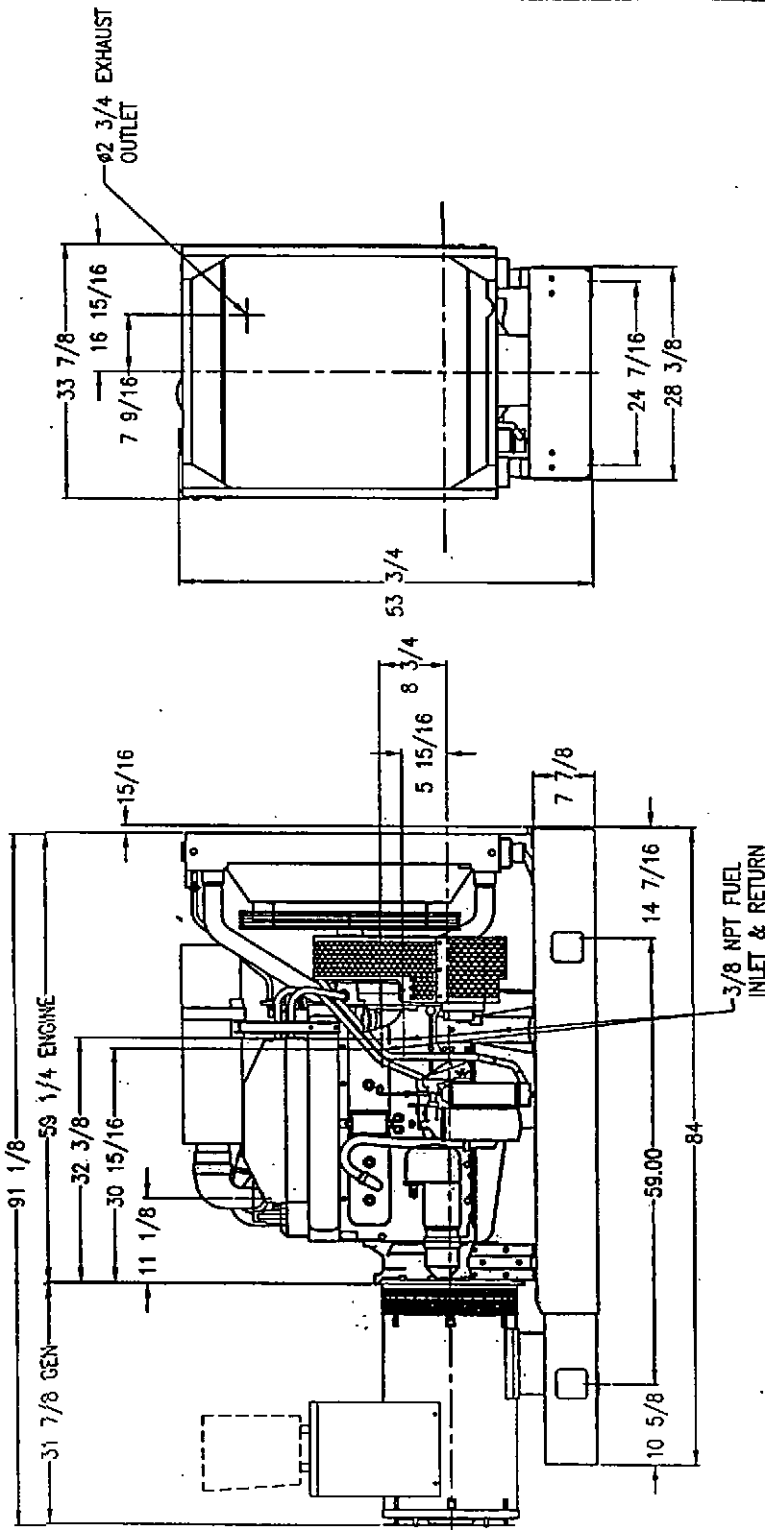


KATOLIGHT
 MARQUETTE, MINNESOTA

ENGINE	GENERATOR	INDICATOR	HOUSING
TD710GP	431 RSL STD W/ENG	OPU	
SIZE	DATE	DWG NO	
B	11-12-97	100-769	
SCALE .0625	PART NO	DWG BY LJS SHEET 1 OF 1	

ORIGINAL

REVISION: 1. CHANGED FLOOR MTG HOLE LOCATIONS 5-20-98 LJS

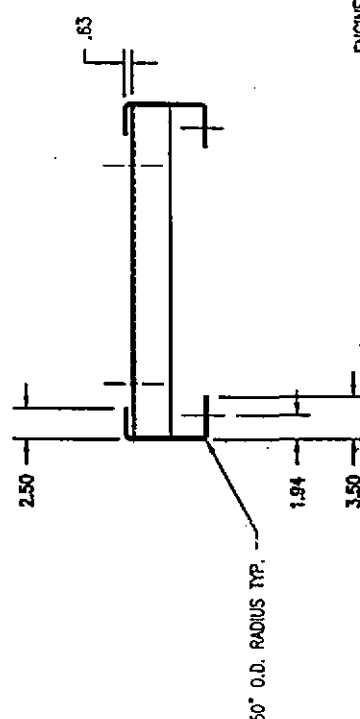
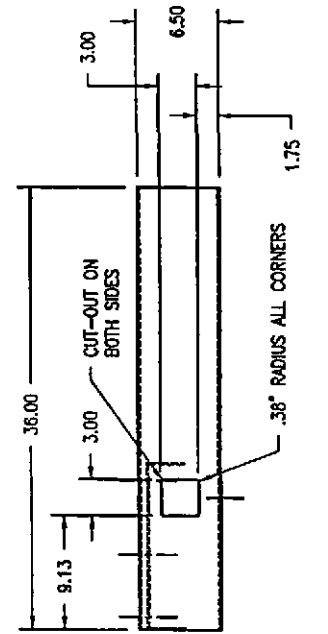
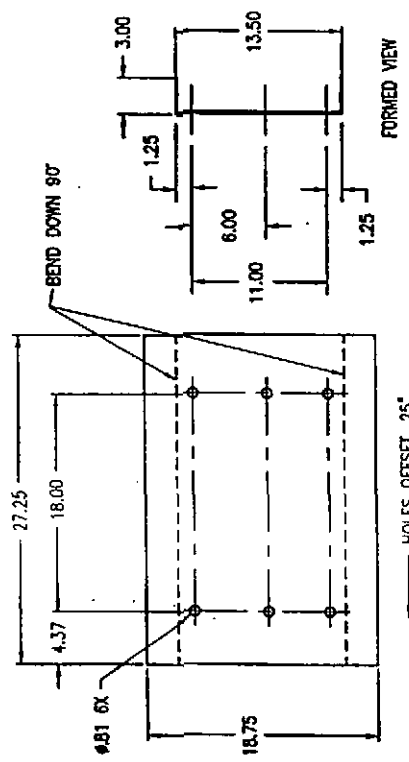
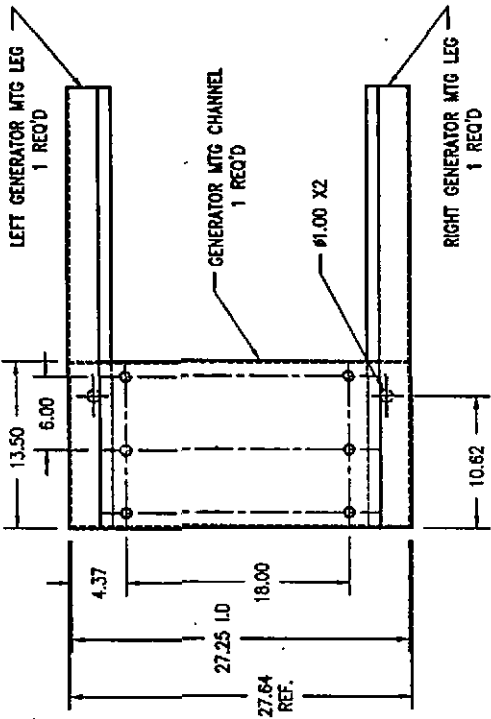


KATOLIGHT
 MARSHFIELD, MINNESOTA

ENGINE	FACTORY	GENERATOR	HOUSING
TWD610G	STD	363 PSL	OPU
SIZE	DATE	DWG NO	
B	12-18-97	100-768	
SCALE	.15=1	PART NO	OWN BY LJS SHEET 1 OF 1

ORIGINAL

REVISION: 1. UPDATED DWG WITH NEW FLOOR MTG LOCATIONS 5-20-98 LJS



ENGINE: TWD810
TD710G
TAD710G
TAD730G

GEN FRAME: 430



MARKATO, MINNESOTA

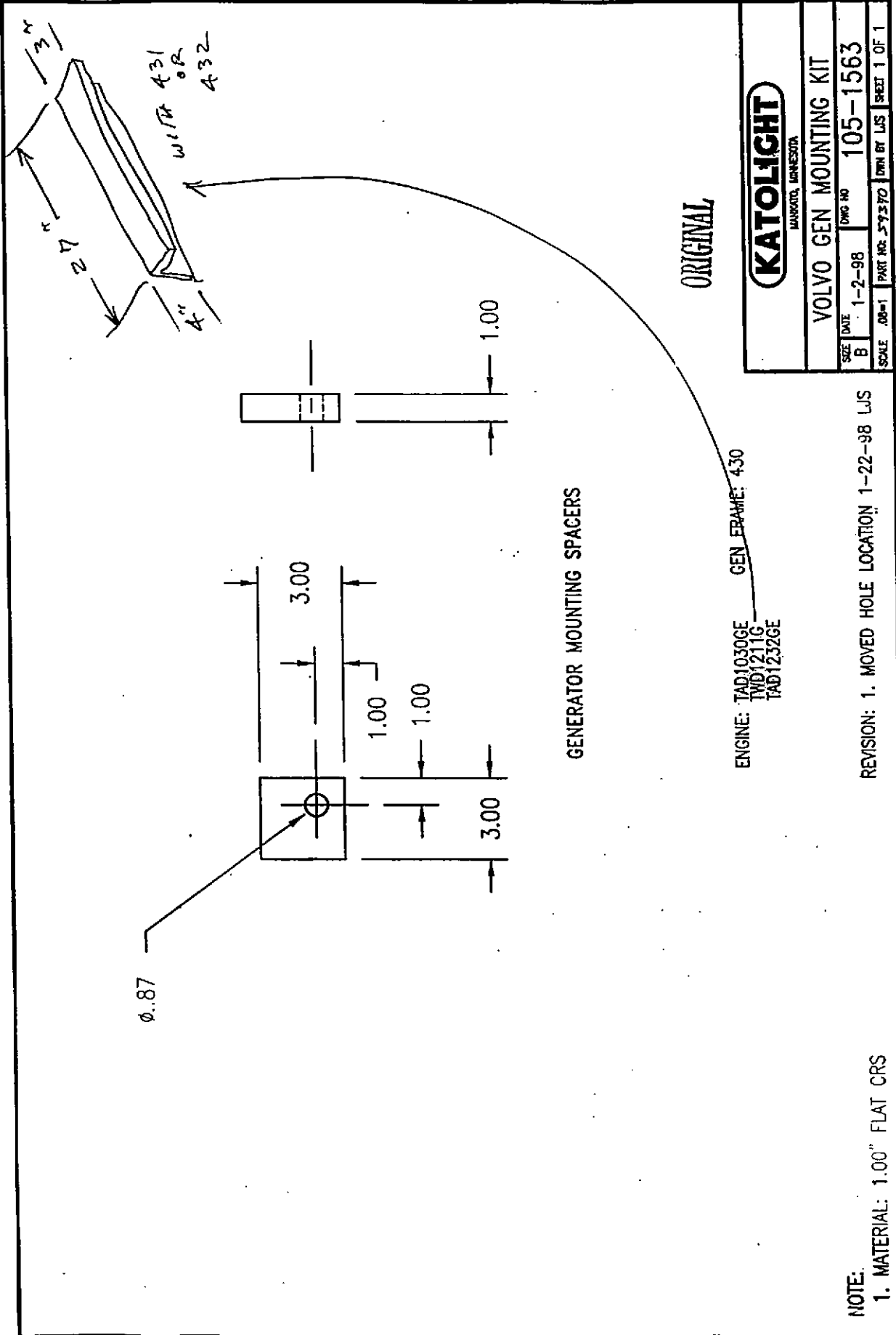
VOLVO GEN MOUNTING KIT

SIZE	DATE	DRG NO	105-1562
B	12-29-97		
SCALE	.08-1	PART NO: 593566	DWG BY: LIS
			SHEET 1 OF 1

ORIGINAL

- NOTE:
1. MATERIAL: 7 GA. CRS
 2. ALL BENDS 90° UNLESS NOTED

- REVISION:
1. CHANGED CUT SIZE OF GEN. CHANNEL 1-12-98 LIS
 2. MOVED MOUNTING TO NEW LOCATION 15.50" 1-28-98 LIS
 3. MOVED FLOOR MOUNTING HOLE TO 10.63" 5-21-98 LIS



ENGINE: TAD1030GE GEN FRAME: 430
 TWD1211G
 TAD1232GE

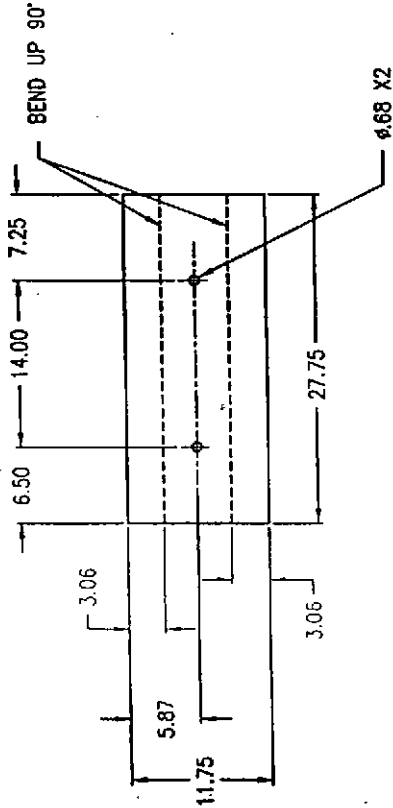
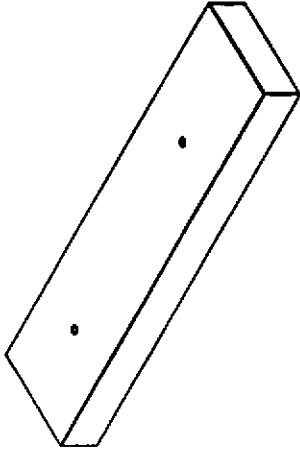


VOLVO GEN MOUNTING KIT

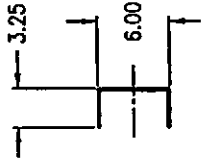
SIZE	DATE	DWG NO	105-1563
B	1-2-98		
SCALE	.00=1	PART NO. 59370	DRAWN BY LJS SHEET 1 OF 1

NOTE:
 1. MATERIAL: 1.00" FLAT CRS

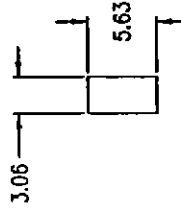
REVISION: 1. MOVED HOLE LOCATION 1-22-98 LJS



GENERATOR MOUNTING CHANNELS
1 REQ'D
7 GA C.R.S



FORMED VIEW



CHANNEL END CAPS
2 REQ'D
7 GA C.R.S

ENGINE: TWD610GP
TD710G
TWD710GP

GENERATOR: 360 FRAME GEN

ORIGINAL

KATOLIGHT

MARKATO, MINNESOTA

GEN CHANNEL FOR OPU

DWG NO 105-1539

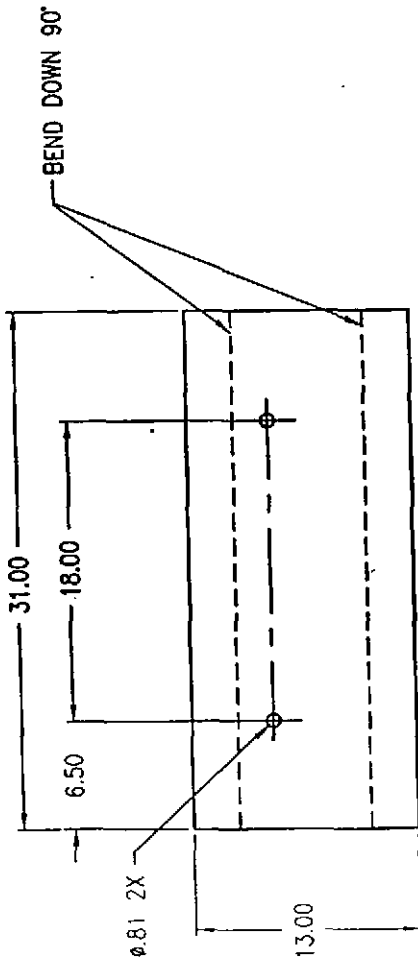
DATE 11-11-97

SIZE B

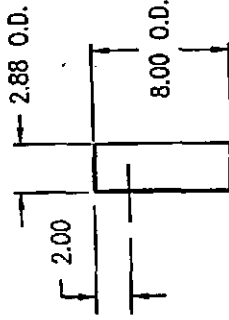
DWN BY LJS

PART NO

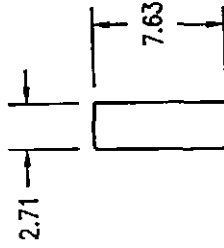
SHEET 1 OF 1



GENERATOR MTG CHANNEL
1 REQ'D



FORMED VIEW



CHANNEL END CAP
2 REQ'D

ORIGINAL

GEN FRAME: 433

ENGINE: TWD1630GP
TAD1630GEP
TAD1631GEP

NOTE:

1. MATERIAL: 7 GA. CRS
2. ALL BENDS 90° UNLESS NOTED

REVISION: 1. CHANGED OVERALL DESIGN OF CHANNEL 3-4-98 LJS

KATOLIGHT

MADE IN MINNESOTA

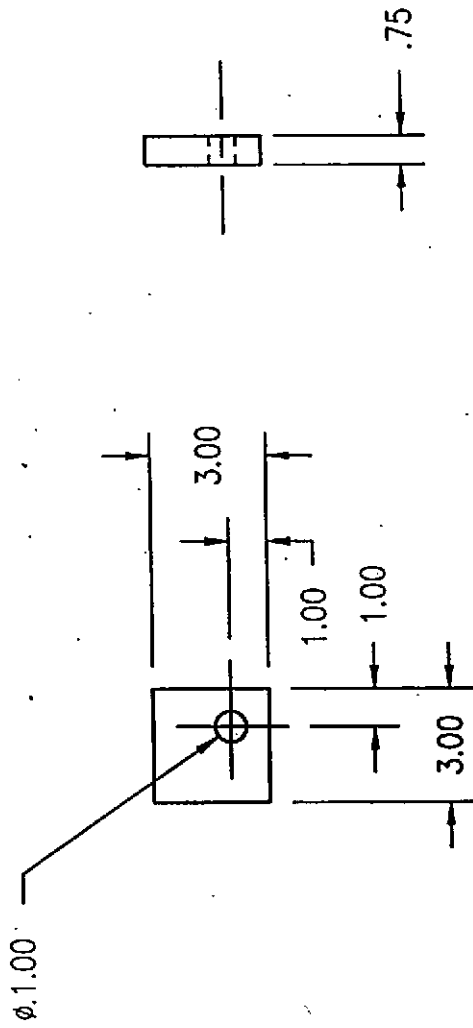
VOLVO GEN MOUNTING KIT

DWG NO 105-1565

DATE 1-2-98

SCALE .08-1

PART NO. DWN BY LJS SHEET 1 OF 1



GENERATOR MOUNTING SPACERS

ORIGINAL

ENGINE: TWD1630CP
 TAD1630GEP
 TAD1631GEP

GEN FRAME: 570



VOLVO GEN MOUNTING KIT

DWG NO 105-1564

DATE 1-2-98

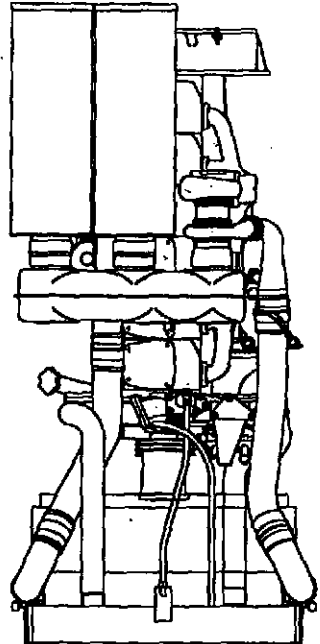
SIZE B

SCALE .06=1 PART NO. 570367 DWN BY LIS SHEET 1 OF 1

NOTE:

1. MATERIAL: .75" FLAT CRS

REVISION: 1. MOVED HOLE LOCATION 1-22-98 LIS



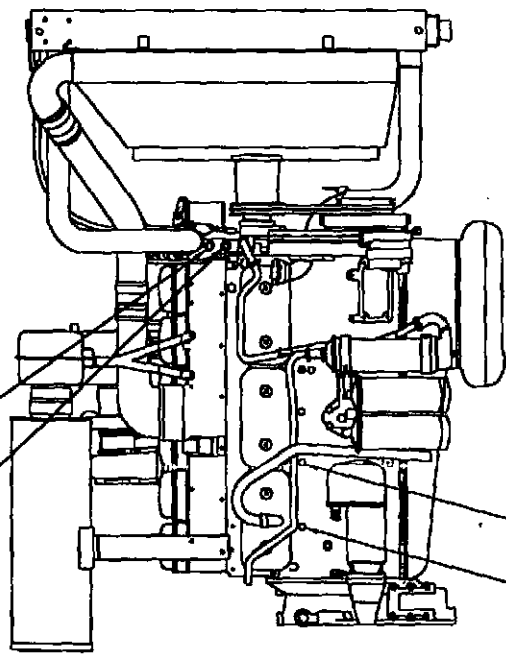
HIGH WATER PRE-ALARM SWITCH

HIGH WATER TEMP SWITCH

WATER TEMP SENDER
TEE OFF OF VERT LINE

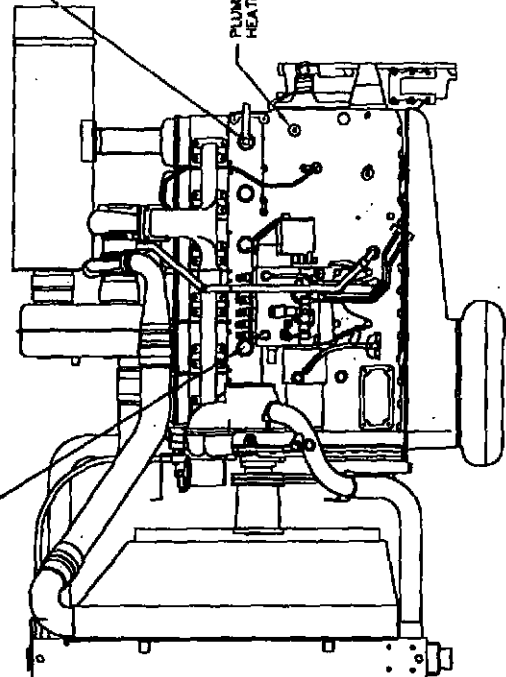
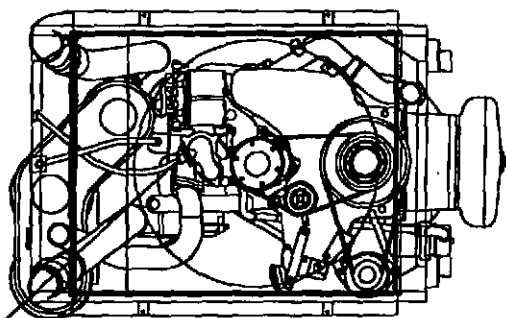
PLUMB FROM WATER HEATER OUTLET

ALSO PLUMB IN LOW WATER TEMP SWITCH



OIL PRESSURE SENDER
AND
PRE. OIL PRESSURE SWITCH

LOW OIL PRESSURE SWITCH



PLUMB TO WATER
HEATER INLET

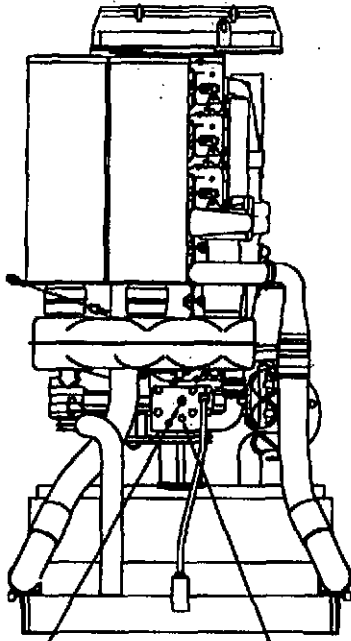
KATOLIGHT
MARQUETTE, MINNESOTA

REVISIONS: 1. MOVED ONE SENSOR LOCATION 12-22-98 LJS
2. RELOCATED WATER TEMP SENDER 6-20-00 SAA

TAD1030GE WATER HEATER PLUMBING & SENDER LOCATIONS

SIZE DATE 8 9-8-98 DWG NO F:\DWG\ENGINE\TAD1030GE

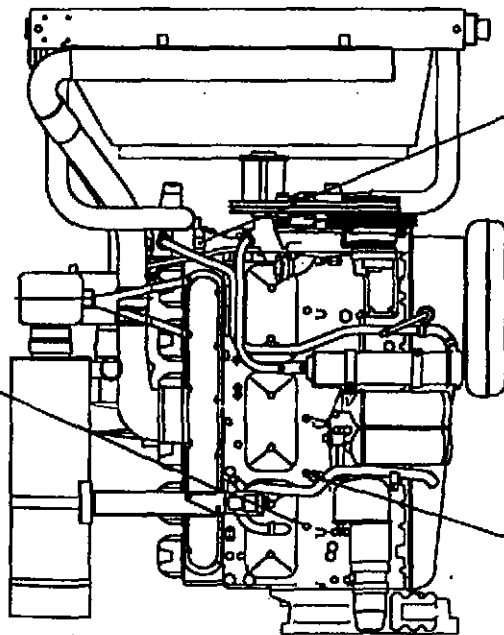
SCALE NONE PART NO DWG BY LJS SHEET 1 OF 1



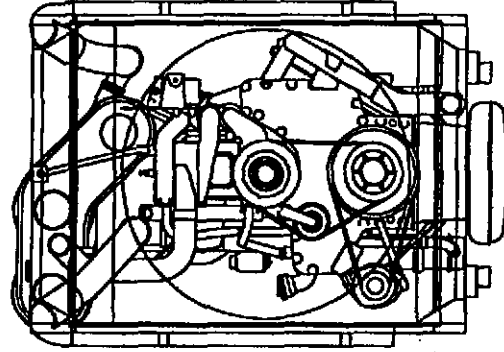
HIGH WATER TEMP SWITCH

HIGH WATER PRE-ALARM SWITCH

LOW OIL PRESSURE SWITCH

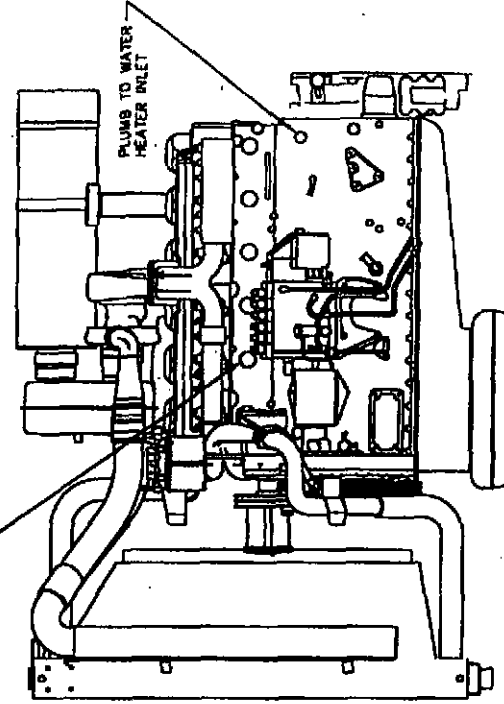


OIL PRESSURE SENDER AND PRE. OIL PRESSURE SWITCH



WATER TEMP SENDER

PLUMB FROM WATER HEATER OUTLET AND ALSO PLUMB IN LOW WATER TEMP SWITCH



PLUMB TO WATER HEATER INLET

KATOLIGHT

MADE IN MINNESOTA

TAD1232GE WATER HEATER PLUMBING & SENDER LOCATIONS

SIZE DATE 8 9-8-98 DWG NO F:\DWG\ENGINE\TAD1232GE

SCALE NONE PART NO OWN BY LJS SET 1 OF 1

REVISION:
1. RELOCATED WATER TEMP SENDER 6-20-00 SAA

<u>Rated Fms</u>	<u>MODEL</u>	<u>BATTERIES</u>
125KW	TWD610GP	(2) 4D'S
150KW	TD710GP	(2) 4D'S
175KW	TWD710GP	(2) 4D'S
200KW	TAD730GP	(2) 4D'S
250KW	TAD1030GP	(2) 4D'S
300KW	TWD1211GP	(2) 8D'S
350KW	TAD12326GP	(2) 8D'S
400KW	TWD1630GP	(2) 8D'S
450KW	TAD1630GP	(2) 8D'S
500KW	TAD16316GP	(2) 8D'S

INTER-OFFICE MEMO

TO: Valley Lead Personnel
FROM: Chett Bisel
CC: Bruce Prange
SUBJECT: Wiring of Battery Chargers and Water Heaters
DATE: December 3, 1997

There have been recent discussions on the wiring of battery chargers and water heaters. All battery chargers and water heaters are to be wired as follows:

110V/120V/139V/220V/277V
(SINGLE PHASE)

WHITE - NEUTRAL
BLACK - LINE
GREEN - EQUIP. GROUND

208V/240V/380V/480V
(SINGLE PHASE)

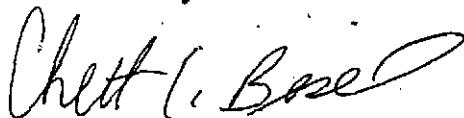
BLACK - LINE
BLACK - LINE
GREEN - EQUIP. GRNOUD

208V/240V/380V/480V
(THREE PHASE)

BLACK - LINE
BLACK - LINE
BLACK - LINE
GREEN - EQUIP. GROUND

This should clear up any remaining questions concerning this topic. If you have any further questions, feel free to call me at Ext. 301.

Thanks for your attention to this matter,

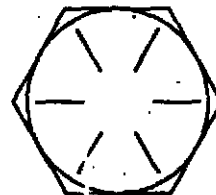


Chett C. Bisel

Kkm

The following table is a list of recommended torques for grade 8 oiled bolts typically used in Katolight generator sets.

Placebolt Body Size inches	Recommended Torque (Oiled) Ft-lb
5/16 - 18	22
3/8 - 16	40
1/2 - 13	95
5/8 - 11	189



Identifying markings for
grade 8 bolts

When coupling the engine generator together make sure:

1. Flex plates and flywheel are clean and free of obstructions,
2. Flex plates are seated properly in the flywheel pilot bore prior to bolting together,

DO NOT file or sand flex plates to allow them to seat in the pilot bore. Rotate generator rotor and try again.

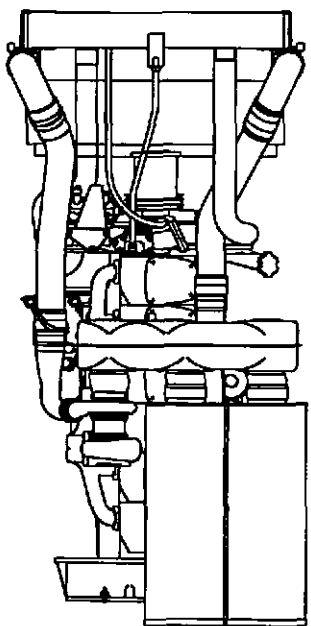
3. Bolt is oiled before threading into flywheel,
4. Bolts are not bottomed out when tightening

UPDATES FOR VOLVO BOOKS

1. REPLACE DRAWING TAD1030GA DATED 12-22-98 LJS
2. REPLACE DRAWING TAD1631GE DATED 12-22-98 LJS
3. REPLACE DRAWING TAD1630GE DATED 12-22-98 LJS
4. REPLACE DRAWING 105-1563 DATED 11-9-98 LJS (WITH NO HAND DWG)
5. ADD DRAWING #105-1740 TO THE BACK OF YOUR BOOKS

NOTE: Tom A. please update your 12 books with copies furnished

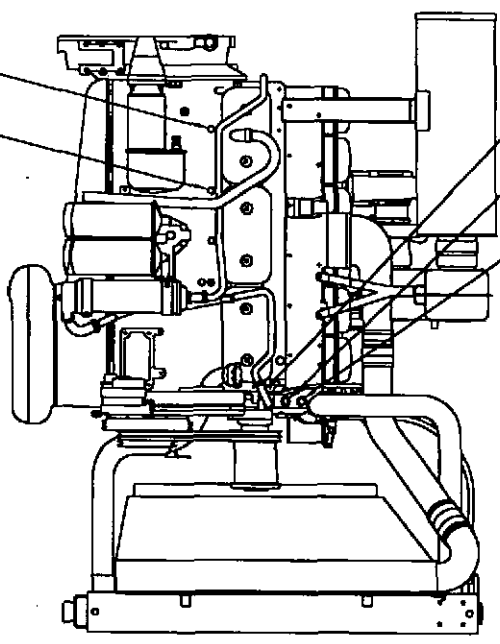
Thanks Leon
12-22-98



WATER TEMP SENDER

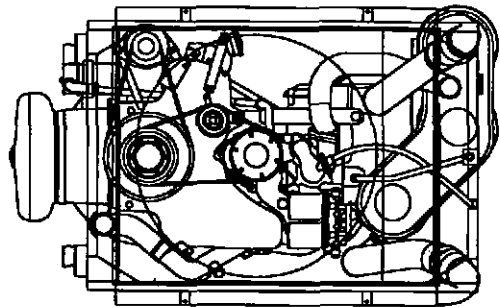
HIGH WATER PRE-ALARM SWITCH

HIGH WATER TEMP SWITCH

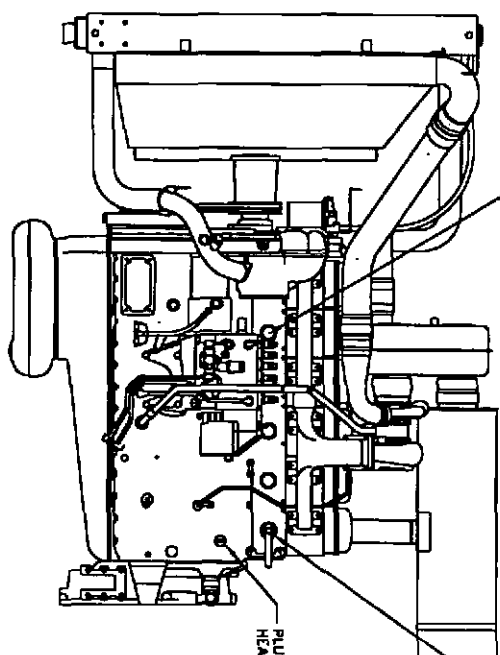


OIL PRESSURE SENDER AND PRE. OIL PRESSURE SWITCH

LOW OIL PRESSURE SWITCH



PLUMB FROM WATER HEATER OUTLET



ALSO PLUMB IN LOW WATER TEMP SWITCH

PLUMB TO WATER HEATER INLET

REVISION: MOVED ONE SENSOR LOCATION 12-22-98 LIS

KATOLIGHT

MANVATE, WISCONSIN

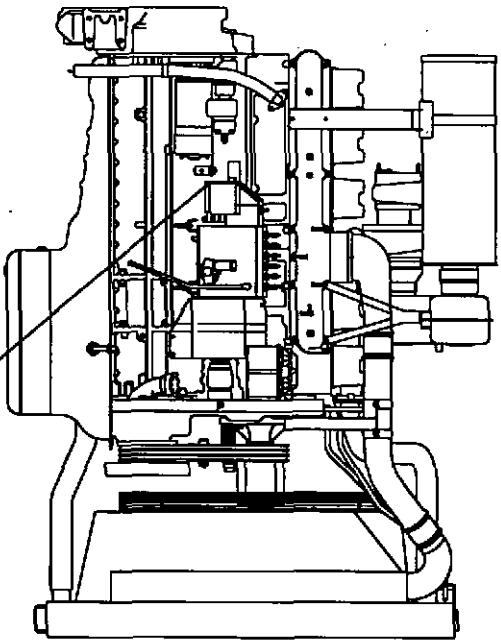
TAD1030GE WATER HEATER PLUMBING & SENDER LOCATIONS

SIZE DATE

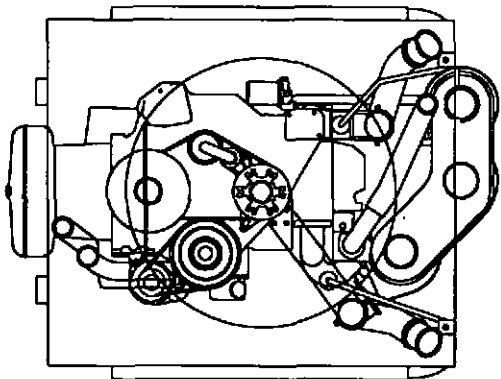
B 9-8-98

SCALE NONE PART NO. DWG BY LIS SHEET 1 OF 1

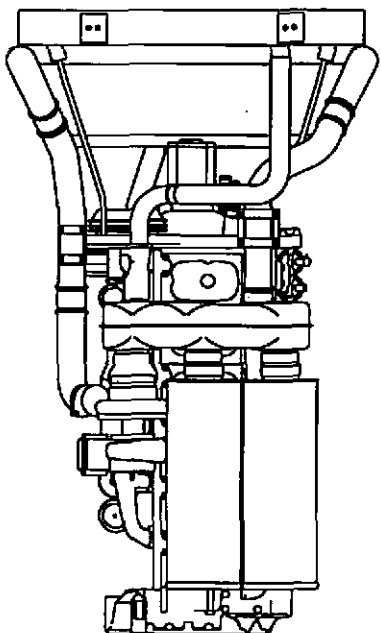
(IF PRE-SHUTDOWN IS REQUIRED)
 NOTE: IF PRE-SHUTDOWN IS REQUIRED KATOLIGHT WILL
 HAVE TO REMOVE SHUTDOWN FURNISHED BY VOLVO
 AND ADD A KATOLIGHT'S DUAL SHUTDOWN



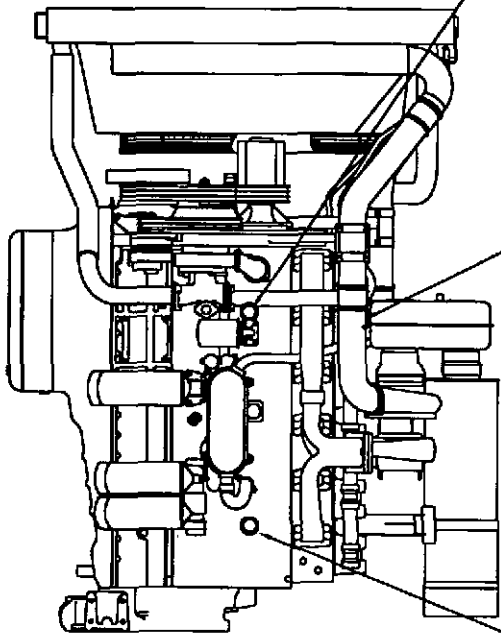
OIL PRESSURE SENDER
 AND
 PRE. OIL PRESSURE SWITCH
 AND
 LOW OIL PRESSURE SWITCH



PLUMB TO WATER
 HEATER INLET



WATER TEMP SENDER
 AND
 HIGH WATER
 PRE-ALARM SWITCH



PLUMB FROM WATER HEATER OUTLET
 ALSO PLUMB IN LOW WATER TEMP SWITCH

REVISION: MOVED LOCATION OF OIL PRESSURE SENDER 12-22-98 LJS

KATOLIGHT

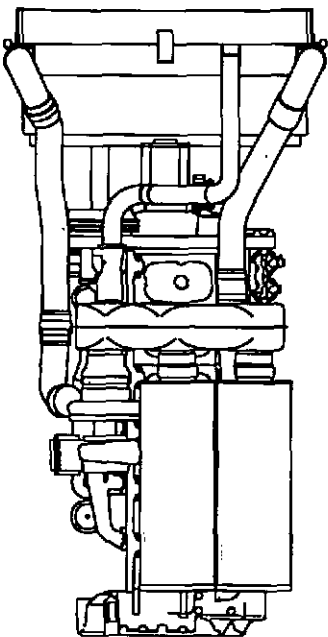
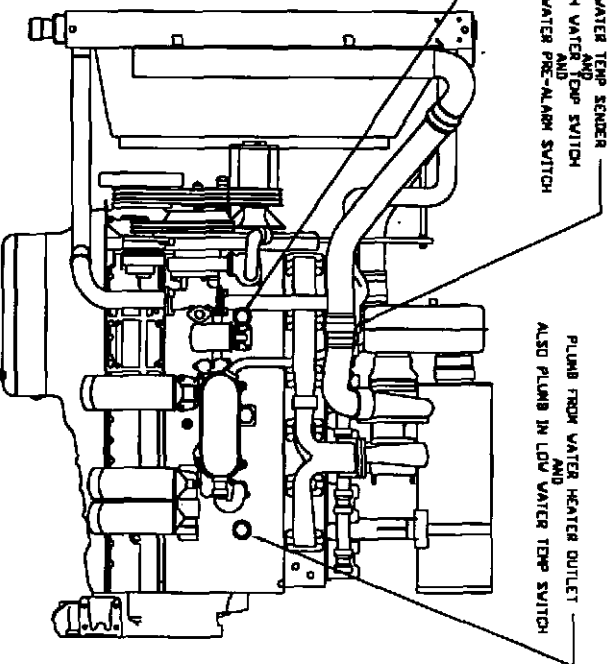
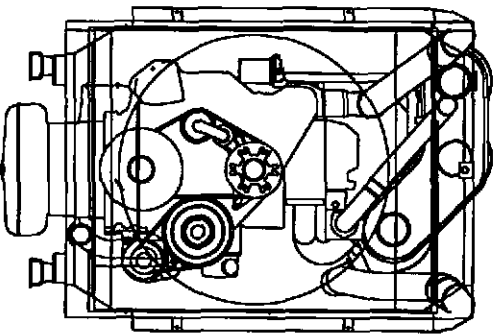
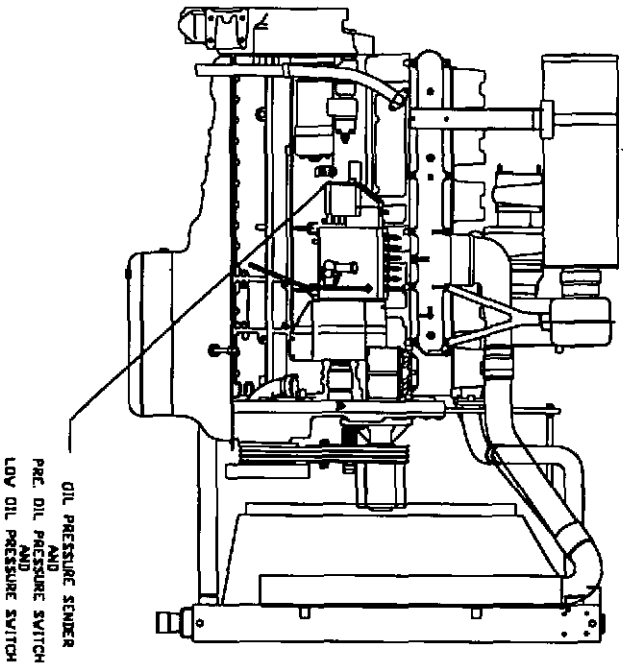
MINNETONKA, MINNESOTA

TA01631GE

WATER HEATER PLUMBING & SENDER LOCATIONS

SIZE	DATE	DWG NO.	OWN BY	SHEET
B	9-8-98	F:\DWG\ENGINE\TA01631GE	LJS	1 OF 1
SCALE	NONE	PART NO.		

2 IF PRE-SHUTDOWN IS REQUIRED 2
 NOTE: IF PRE-SHUTDOWN IS REQUIRED, KATOLIGHT WILL
 HAVE TO REMOVE SHUTDOWN FURNISHED BY VOLVO
 AND ADD A KATOLIGHTS DUAL SHUTDOWN



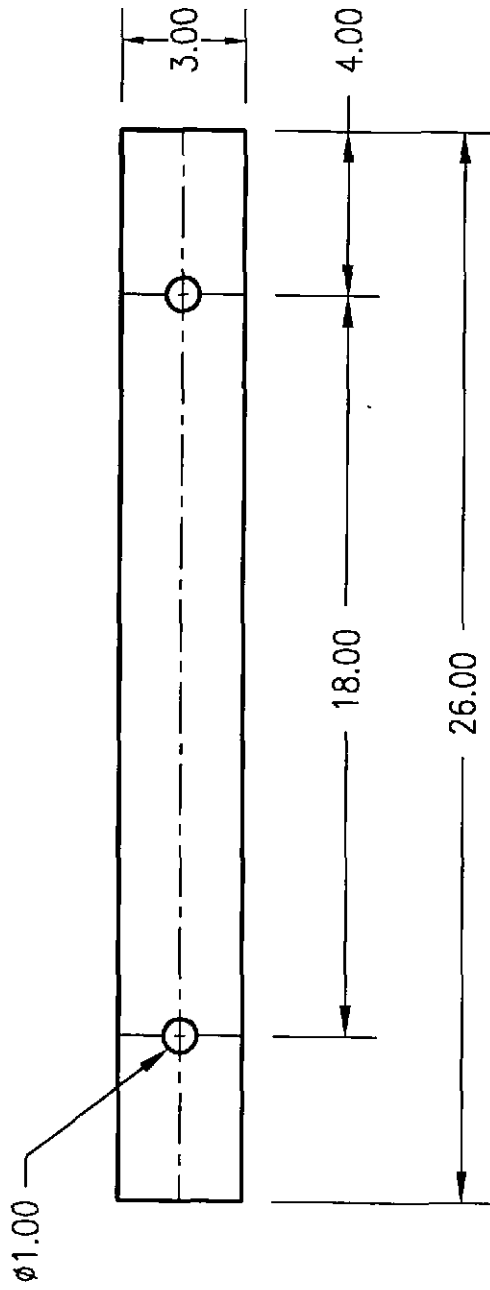
REVISION: MOVED LOCATION OF OIL PRESSURE SENDER 12-22-98 LJS

KATOLIGHT

MANKATO, MINNESOTA

TAD1630GE AND TAD1630GEG
 WATER HEATER PLUMBING & SENDER LOCATIONS

SIZE	DATE	DWG. NO.	OWN BY
8	9-8-98	F:\DWG\ENGINE\TAD1630GE	
SCALE	NONE	PART NO.	DWN BY
			LJS
			SHEET 1 OF 1



GENERATOR MOUNTING SPACER

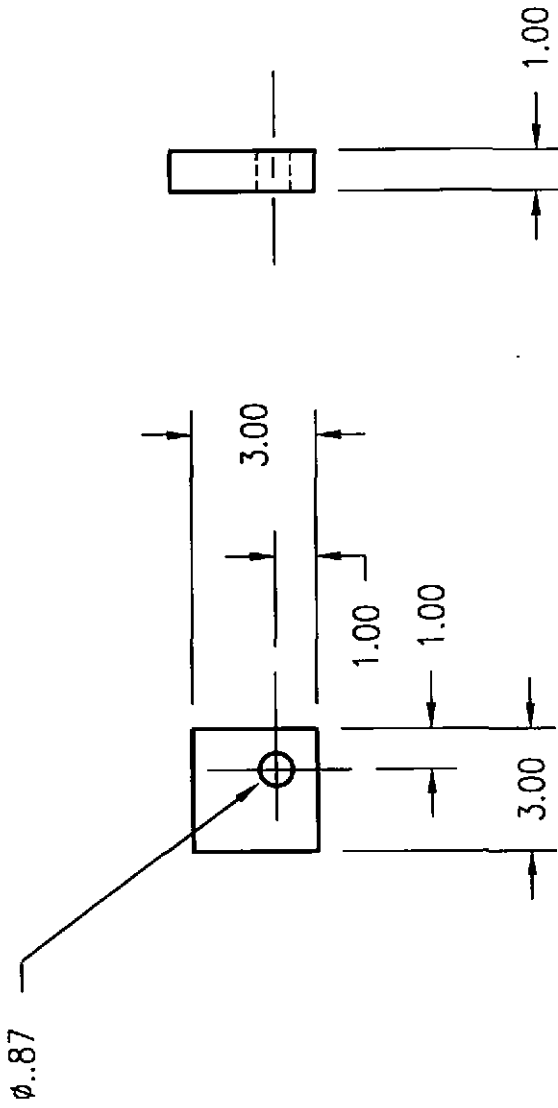
ENGINE: TWD1211GP GEN FRAME: 430



VOLVO GEN MOUNTING KIT

SIZE	DATE	DWG NO	105-1740
B	11-9-98		
DRAWN TO SCALE			PART NO:
			DWN BY: LJS SHEET 1 OF 1

NOTE:
1. MATERIAL: .63" FLAT CRS



GENERATOR MOUNTING SPACERS
2 REQ'D

ENGINE: TAD1030GE GEN FRAME: 430
TAD1232GE

NOTE:
1. MATERIAL: 1.00" FLAT CRS

REVISION: 1. MOVED HOLE LOCATION 1-22-98 LJS
2. REMOVED TWD1211GP FROM LIST 11-9-98 LJS



VOLVO GEN MOUNTING KIT

SIZE	DATE	DWG NO	105-1563
B	1-2-98		
SCALE	.08=1	PART NO: 59370	DWN BY LJS
			SHEET 1 OF 1