



## **Chiller installation, contractor's scope of work:**

See complete DTS O&M Manual for further details

### **Pre-planning:**

#### **Provide installation surface**

**Either, ground level concrete pad** 5'W x 12'L x min 4" depth, w/less than ½" slope per 10' or shim to level or, **rooftop curbing** per your local building code specifications.

Chiller weight: DTSWO2250MR60 & DTSWO2250MR63 – WO2-2-5000 dry 3200lbs; operational 4000lbs

Ensure placement is 5 feet from walls and min 8 foot overhead clearance. For rooftop installations, max 65 feet vertical distance down to MRI SEC cabinet. Contact DTS at 800-968-5665 if installation will fall outside this distance.

#### **Arrange for rigging**

Unit and filter kit will arrive on a flat-bed truck. The freight carrier does not provide unloading service. Include any necessary rigging fees in your installation bid.

#### **Provide fluid piping**

2" diameter, copper is advised. Max run equivalent to 500 linear feet; flex connectors are advised at chiller inlet and outlets. Chiller ports: 2" NPTF connections. \*see pg 7 of manual for pressure loss for piping elbows and fittings

- Do not use galvanized piping as glycol will remove its zinc coating. PVC is not recommended due to brittleness that can occur over long term exposure to UV and outdoor temp extremes.

**\*Each chiller is supplied with a filter and analog flow meter kit, shipped loose, to be installed indoors, inline, prior to the Siemens SEP cabinet inlet.**

**\*Optional Manual Bypass – if this piece has been ordered, it is to be installed between the Siemens MRI SEP cabinet and it's cryogen compressor. 22' ½" hoses and multi connector fittings are included. The alternate water source can be either city water or central chiller. If city water is used, supply a drain and a backflow preventer in the city water supply line.**



### **Provide Power drop**

**Chiller WO2-2-5000** is provided with an 80 amp, fused, rotary, lockable disconnect; Max over current protection: 80 amps; Min circuit ampacity: 70 amps; FLA 67 amps

### **Provide ¾" conduit with pull string from chiller to MRI operator's work station**

A Carel remote panel with 150' connector cord is included with each shipment, located within the electrical enclosure.

### **Chiller fluid**

**If purchased with the chiller:** 65 gallons of 100% concentrate inhibited propylene glycol will arrive with the chiller delivery (this is an option offered. Check with Siemens to see if you need to provide this)

**Dilute to 40 to 50% glycol/de-mineralized\* water** at the site, and fill as part of the installation process.

**Procure 65 to 95 gallons of de-mineralized water.**

- Chiller has a 100 gallon tank. System will require 100 gallons of mixed fluid + 1 additional gallon per every 6 linear feet of 2" piping length)

\*de-mineralized water can be selected as distilled, reverse osmosis, or DI water. **Do not use tap water.**

The naturally occurring minerals and sediments in tap water will cause the fluid to fall outside the water purity specification required by MRI equipment.

## **Installation**

### **Rig and anchor chiller at four corner feet**

- For rooftop installations, if directly above the MRI equipment, vibration isolators are available, in set of 8, anchor all 8 feet
- All DTS Medical chiller designs have undergone and passed Seismic Shake Table testing

### **Connect fluid piping, and fill reservoir via the fill tube/site glass**

**Connect power drop and check for proper polarity** – phase monitor is included and should be lit with green light. The pumps and compressors are wired and tested at DTS to be in phase with one another. When powering up to eliminate air from piping, check the pump rotation and switch incoming power polarity if needed.



### **Connect remote Carel Display**

- Run ¾" flex conduit between the chiller and the MR operator's work station
- Draw included 150' cord through conduit.
- Wall-mount the remote display, viewable for MRI Operator
- Connect the phone style connectors at the chiller electrical enclosure and the remote display

**Power unit on to verify proper pump rotation direction, allow pumps to run for 5-10 minutes to purge air in the fluid piping.** Add more water/glycol blend to fill to between high and low marks on the site glass

### **The Chiller package purchase includes the following DTS Koolant Koolers provided service package:**

- 1) Initial start-up visit, to commence with cryo compressor initialization\*
- 2) commissioning/sign off start-up visit, to commence with Siemens sign off visit, recheck of complete operation while under scanning heat loads
- 3) Preventive maintenance visit during 12 month parts and labor warranty

DTS uses the services of local certified HVAC contractors that have passed and agreed to meet the Siemens qualifying requirements. Contact DTS at [medservice@dimplexthermal.com](mailto:medservice@dimplexthermal.com) if interested in joining this network

\*Advise the Siemens Project Manager with expected date of readiness. DTS requires 72 hour notice to meet start-up visit appointment requests.

### **Split Systems with remote condensers**

**\* Split systems are shipped with a nitrogen charge only, so that refrigerant cannot be accidentally released into the air when opening the circuits to connect them. The installation contractor will need to supply 407c refrigerant to charge the chiller once the installation is complete. Be certain to include this in your scope of work and installation fees.**

**\*\*Max allowable distance between the indoor and outdoor cabinets is 250'**

DTS split systems will include multiple cabinets. The indoor cabinet will include compressors, evaporators, pumps, reservoir, and controls. The outdoor cabinet(s) will include the air cooled condensers and fans. Anchor all pieces as part of the installation.

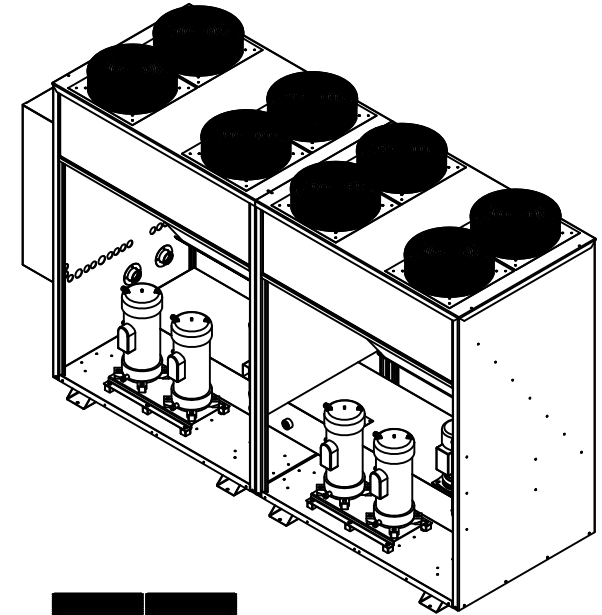
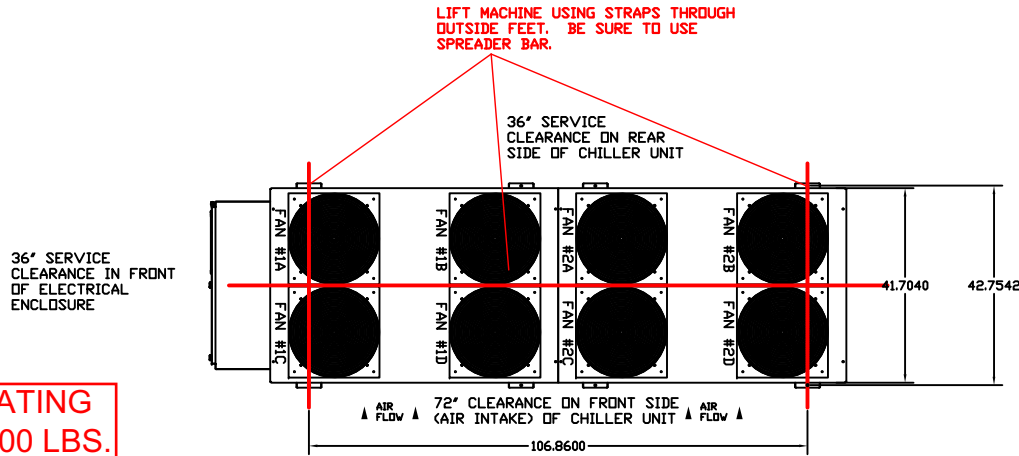


Interconnective refrigerant piping: Max distance is 250'. Include one U bend oil collector per every 12 feet of vertical rise.

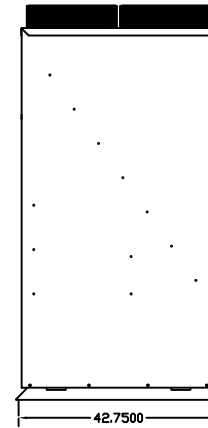
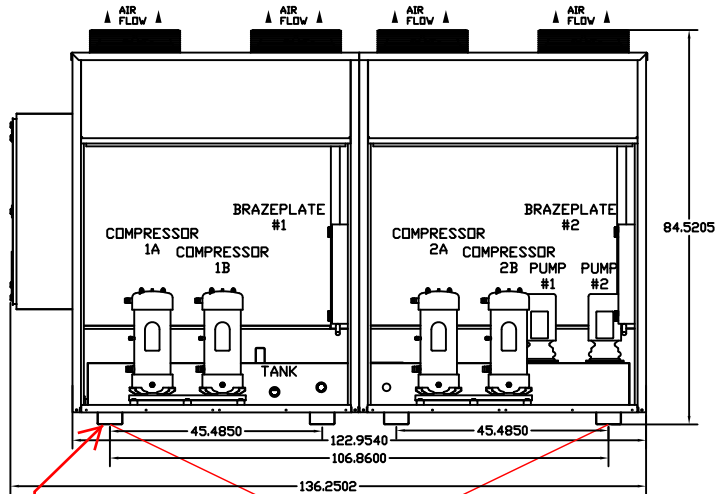
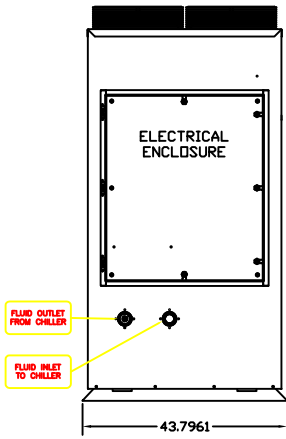
Run conduit from main chiller to remote condenser(s) for fan controls.

Rev. 10-21-13

W02-2-7500 UNIT HAS (8) FANS (SHOWN BELOW)  
 W02-2-5000 UNIT HAS (4) FANS



**MAX OPERATING WEIGHT 4300 LBS.**



MANUAL FILL

**MOUNTING POINTS**  
 \*FOUR OUTER POINTS ANCHORED FOR PAD MOUNTING  
 \*ALL EIGHT POINTS ANCHORED FOR SPRING MOUNTING

LIFT MACHINE USING STRAPS THROUGH OUTSIDE FEET. BE SURE TO USE SPREADER BAR.

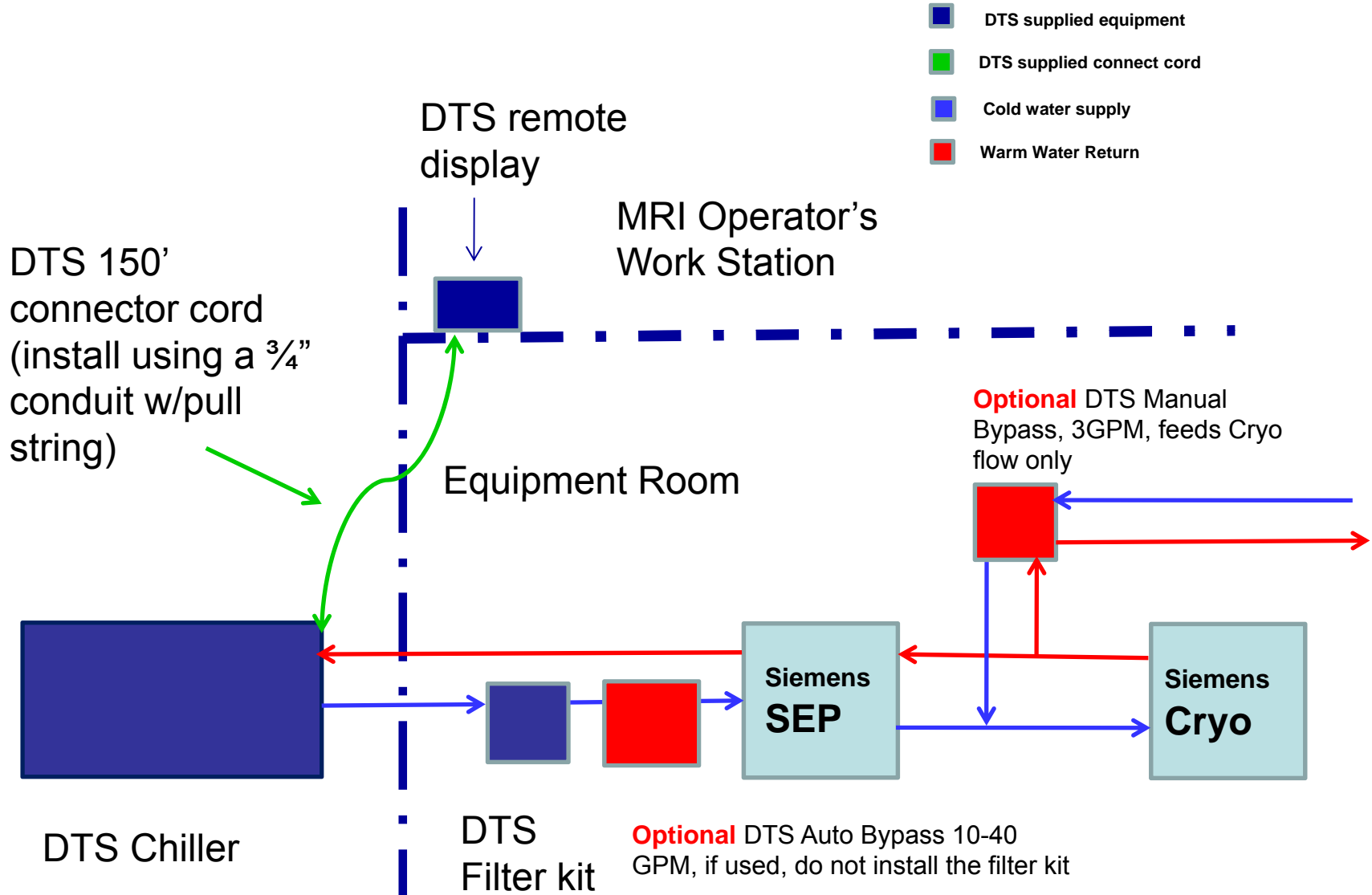
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DATE	DESCRIPTION OF REVISION	APPROVED BY:

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 PAGE 1 OF 1  
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**W02-( )-2P(-H)**  
**ELECTRICAL**  
 DRAWING NO. 443378

# Dimplex

## Thermal Solutions



R-407c		DISCHARGE LINE SIZE								
		CONNECTIONS	1/2"	5/8"	7/8"	1-1/8"	1-3/8"	1-5/8"	2-1/8"	2-5/8"
TONAGE	2	1/2"	0-35'	36-140'	141-250'					
	3-5	5/8"		0-20'	21-140'	141-250'				
	7.5-10	7/8"			0-35'	36-140'	141-250'			
	12-15	1-1/8"				0-70'	71-190'	191-250'		
	20	1-3/8"					0-100'	101-250'		
	25-30	1-3/8"					0-50'	51-125'	126-250'	
	40	1-3/8"					0-20'	21-70'	71-250'	
	50	1-5/8"						0-45'	46-175'	176-250'
60	1-5/8"						0-30'	31-125'	126-250'	

R407-c		LIQUID LINE SIZE							
		CONNECTIONS	3/8"	1-2"	5/8"	7/8"	1-1/8"	1-3/8"	1-5/8"
TONAGE	2	3/8"	0-140'	141-250'					
	3-5	3/8"	0-20'	26-100'	101-250'				
	7.5-10	5/8"			0-110'	111-250'			
	12-15	5/8"			0-45'	46-250'			
	20	7/8"				0-150'	151-250'		
	25-30	7/8"				0-80'	81-250'		
	40	1-1/8"					0-150'	151-250'	
	50-60	1-1/8"					0-80'	81-220'	221-250'

R-407c		LIQUID LINE SIZE						
		3/8"	1/2"	5/8"	7/8"	1-1/8"	1-3/8"	1-5/8"
WEIGHT (Lb/ 10 ft)		.39	.72	1.15	2.40	4.09	6.22	8.81

R-134a		DISCHARGE LINE SIZE								
		CONNECTIONS	5/8"	7/8"	1-1/8"	1-3/8"	1-5/8"	2-1/8"	2-5/8"	3-1/8"
TONAGE	2	5/8"	0-40'	41-250'						
	3-5	7/8"		0-50'	51-200'	201-250'				
	7.5-10	1-1/8"			0-50'	51-150'	151-250'			
	12-15	1-1/8"			0-20'	21-70'	71-160'	161-250'		
	20	1-3/8"				0-35'	36-95'	95-250'		
	25-30	1-3/8"				0-10'	11-40'	41-190'	191-250'	
	40	1-5/8"					0-20'	21-110'	111-250'	
	50-60	2-1/8"						0-45'	46-160'	161-250'

R-134a		LIQUID LINE SIZE								
		CONNECTIONS	3/8"	1/2"	5/8"	7/8"	1-1/8"	1-3/8"	1-5/8"	2-1/8"
TONAGE	2	3/8"	0-45'	46-250'						
	3-5	1/2"		0-40'	41-140'	141-250'				
	7.5-10	5/8"			0-35'	36-250'				
	12-15	7/8"				0-110'	111-250'			
	20	7/8"				0-65'	66-250'			
	25-30	7/8"				0-25'	26-110'	111-250'		
	40	1-1/8"					0-65'	66-190'	191-250'	
	50-60	1-3/8"						0-90'	91-220'	221-250'

R-134a		LIQUID LINE SIZE						
		3/8"	1/2"	5/8"	7/8"	1-1/8"	1-3/8"	1-5/8"
WEIGHT (Lb/ 10 ft)		.43	.80	1.28	2.65	4.52	6.87	9.74

**NOTES:**

RUNS OVER 250' IN EACH DIRECTION ARE NOT RECOMMENDED. CONSULT FACTORY.

AN OIL TRAP IS REQUIRED ON THE HOT GAS DISCHARGE LINE FOR EVERY 12' OF VERTICAL RISE.

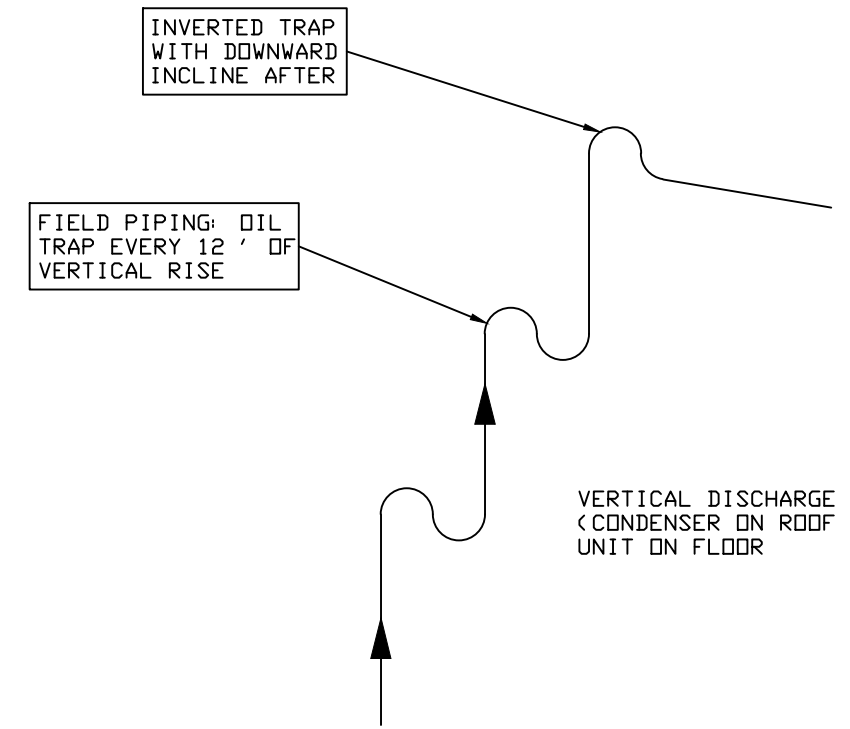
REMOTE CONDENSER SHIPPED WITH A DRY NITROGEN CHARGE.

ADDITIONAL OIL MAY NEED TO BE ADDED TO THE SYSTEM.

TO ADD OIL TO SANYO COMPRESSORS:  
 ON SANYO COMPRESSORS, RUN THE SYSTEM AT 100% CAPACITY (TO RETURN THE SYSTEM OIL (PVE OIL) TO THE COMPRESSOR(S)). PUMP DOWN THE COMPRESSOR(S). REMOVE THE OIL EQUALIZATION LINE (OR ON A SINGLE COMPRESSOR THE OIL EQUALIZATION FLARE CAP). ADD OIL TO EACH COMPRESSOR (THROUGH THE SIDE SERVICE PORT ON EACH COMPRESSOR) UNTIL OIL FLOWS OUT OF EACH COMPRESSOR. THIS PROCEDURE IS REQUIRED BECAUSE THE SANYO COMPRESSOR HAS AN ELBOW INSIDE THE COMPRESSOR POINTING UP ON THE OIL EQUALIZATION LINE. VIEWING THE OIL SIGHT GLASS BETWEEN MULTIPLE COMPRESSORS ALONE IS NOT RELIABLE. SEAL THE SYSTEM BACK UP AND EVACUATE THE COMPRESSOR BODIES. MANUALLY ENERGIZE THE LIQUID LINE SOLENOID TO BREAK THE COMPRESSOR VACUUM BEFORE STARTING THE COMPRESSORS.

COMPRESSORS WITH AN OIL SIGHT GLASS BUILT INTO THE COMPRESSOR ITSELF MAY BE FILLED BY THE OIL SIGHT GLASS.

ADDED OIL TYPE MUST MATCH OIL TYPE IN COMPRESSORS. NOTE: SANYO COMPRESSORS USE PVE OIL (NOT POE).



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DESIGN BY: MAB	DATE: 2/10/12	DRAWN BY: MAB	PAGE 1 OF 1	KALAMAZOO, MI. PH (800) 968-5665 WWW.DIMPLEXTHERMAL.COM	
<b>REMOTE COND. LINE</b>				<b>SIZE CHART</b>	
8-7-13 ADDED SANYO OIL PROCEDURE. JMK <B>		11-28-12 ADDED OIL NOTE JMK <A>		DRAWING NO. 453390	
DATE	DESCRIPTION OF REVISION	APPROVED BY			