





















MATERIALS

SERVICE: MACHINERY COOLING					CLASS 150		MATERIAL: CARBON STEEL GALVANIZED AFTER FABRICATION IN CONTACT WITH SEAWATER						
RATED TEMPERATURE		300°F (149°C) MAX											
PRESSURE		CLASS 150 – MAXIMUM WORKING PRESSURE 230psi (16 bar) AT RATED TEMPERATURE											
SIZE	½"	¾"	1"	1 ¼"	1 ½"	2"	2 ½"	3"	4"	5"	6"	8"	10"
	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250
PIPE	SCH. 80			SCH. 40									
	ASTM A-53 GR. B SMLS OR ASTM A-106 GR. B SMLS												
FITTINGS	ASTM A105, ASME B16.11			ASTM A234 WPB SMLS, ASME B16.9									
	SW OR THD			BUTT WELDED, BORE TO MATCH PIPE									
FLANGE	ASTM A105, ASME B16.5			ASTM A105, ASME B16.5									
	CL 150 RF SW			CL 150 RF SO OR WN, BORE TO MATCH PIPE									

SERVICE: MACHINERY COOLING													CLASS 200		MATERIAL: COPPER NICKEL, CUNI 90-10				
(REF: ASTM F 1155 – 98)																			
RATED TEMPERATURE			200°F (93°C) MAX																
PRESSURE			CLASS 200 – MAXIMUM WORKING PRESSURE 216psi (18 bar) AT RATED TEMPERATURE																
SIZE			½"	¾"	1"	1 ¼"	1 ½"	2"	2 ½"	3"	4"	5"	6"	8"	10"				
			DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250				
PIPE			ASME SB466, SEAMLESS CUNI 90-10																
FITTINGS			FLANGED: ASME SB61, ANSI B16.24 BUTTWELD: ASME SB466, NAVSEA 810-1385880																
FLANGE			ASME SB62, ANSI B16.24																
BOLTING			BOLTS: ASTM A 307 GR B, ANSI B18.2.1, NUTS: ASTM A 563 GR A, ANSI B18.2.2																
VALVES			BUTTERFLY:			DUCTILE IRON – ASTM A 395, CARBON STEEL – ASTM A 216/A 216M GR WCB, MSS-SP-67													
			GATE:																
			GLOBE-SDNR:			FLANGED: DUCTILE IRON – ASTM A 395, CARBON STEEL – ASTM A 216/A 216M GR WCB, ANSI B16.34													
			CHECK																



SYMBOLS LEGEND/LÉGENDE DE SYMBOLES		
	GLOBE VALVE	ROBINET À SOUPAPE
	BUTTERFLY VALVE	VANNE À PAPILLON
	SDNR (GLOBE CHECK) VALVE	ROBINET À SOUPAPE ANTIRETOUR
	SWING CHECK VALVE	SOUPAPE À CLAPET BATTANT
	SIMPLEX BASKET STRAINER	CRÉPINE À PANIER SIMPLEX
	CONCENTRIC REDUCER	RACCORD-RÉDUCTION CONCENTRIQUE
	CENTRIFUGAL PUMP	POMPE CENTRIFUGE
	OVERBOARD DISCHARGE	CONDUITE D'ÉVACUATION VERS L'EXTÉRIEUR
	PRESSURE GAUGE, LOCAL	MANOMÈTRE LOCAL
	VACUUM/PRESSURE GAUGE, LOCAL	MANOMÈTRE À VIDE LOCAL
	BALL VALVE	ROBINET À TOURNANT SPHÉRIQUE
	FLANGE	BRIDE
	TEMPERATURE GAUGE IN THERMOWELL	INDICATEUR DE TEMPÉRATURE DANS UN Puits THERMOMÉTRIQUE
	LOW LEVEL ALARM	AVERTISSEUR DE NIVEAU BAS
	SHELL & TUBE HEAT EXCHANGER	ÉCHANGEUR DE CHALEUR À CALANDRE
	SIGHTGLASS	VOYANT LIQUIDE
	FLEXIBLE CONNECTION	RACCORD FLEXIBLE
	PLATE HEAT EXCHANGER	ÉCHANGEUR À PLAQUE
	CARBON STEEL PIPE	TUYAU EN ACIER AU CARBONE
	COPPER NICKEL PIPE	TUYAU EN NICKELINE

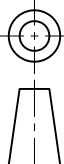
NOTES

- PROVIDE A MACHINERY COOLING SYSTEM IN ACCORDANCE WITH CLASSIFICATION SOCIETY REQUIREMENTS. INSTALL PIPING AND EQUIPMENT TO THE SATISFACTION OF THE ATTENDING SURVEYOR.
- AFTER INSTALLATION, CLEAN AND FLUSH SYSTEM IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
- CARRY ONBOARD ONE SPARE OF EACH TYPE OF MAIN ENGINE COOLING PUMP (PROPULSION MACHINERY SEAWATER, JACKET WATER, AND AFTERCOOLER WATER PUMPS). ENSURE ALL NECESSARY MEANS ARE ONBOARD TO FACILITATE REPLACEMENT.
- PROVIDE STRAINER MESH SIZES ACCORDING TO EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
- USE VALVES AND FLEXIBLE HOSE CONNECTIONS COMPLYING TO CLASS REQUIREMENTS.
- VERIFY PRESSURE DROP IN COOLING SYSTEM MEETS EQUIPMENT MANUFACTURER'S REQUIREMENTS PRIOR TO CONSTRUCTION.
- KEEP SHUT-OFF VALVES ASSOCIATED WITH THE SEAWATER INLET TO THE SEAWATER MAIN PERMANENTLY OPEN AND PROVIDE NOTICE "VALVE ALWAYS TO BE KEPT OPEN"
- DOSE FRESH WATER SYSTEMS WITH CORROSION INHIBITOR AND/OR ANTIFREEZE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- USE GLOBE VALVES ON DISCHARGE SIDE OF HEAT EXCHANGERS TO ALLOW FOR SYSTEM BALANCING.
- LOCATE EMERGENCY BILGE SUCTION AT LOW LEVEL AND INSTALL VALVE WITH HANDWHEEL NOT LESS THAN 18" (460 mm) ABOVE FLOORPLATES. FIT VALVE WITH NOTICE "FOR EMERGENCY USE ONLY".
- ARRANGE OVERBOARD DISCHARGE IN A LOCATION SUCH THAT THE DISCHARGE OF WATER AT ANY DRAUGHT WILL NOT BE OBSTRUCTED BY ICE. ALL DISCHARGES ARE TO BE LOCATED ON THE PORT SIDE.

NOTES

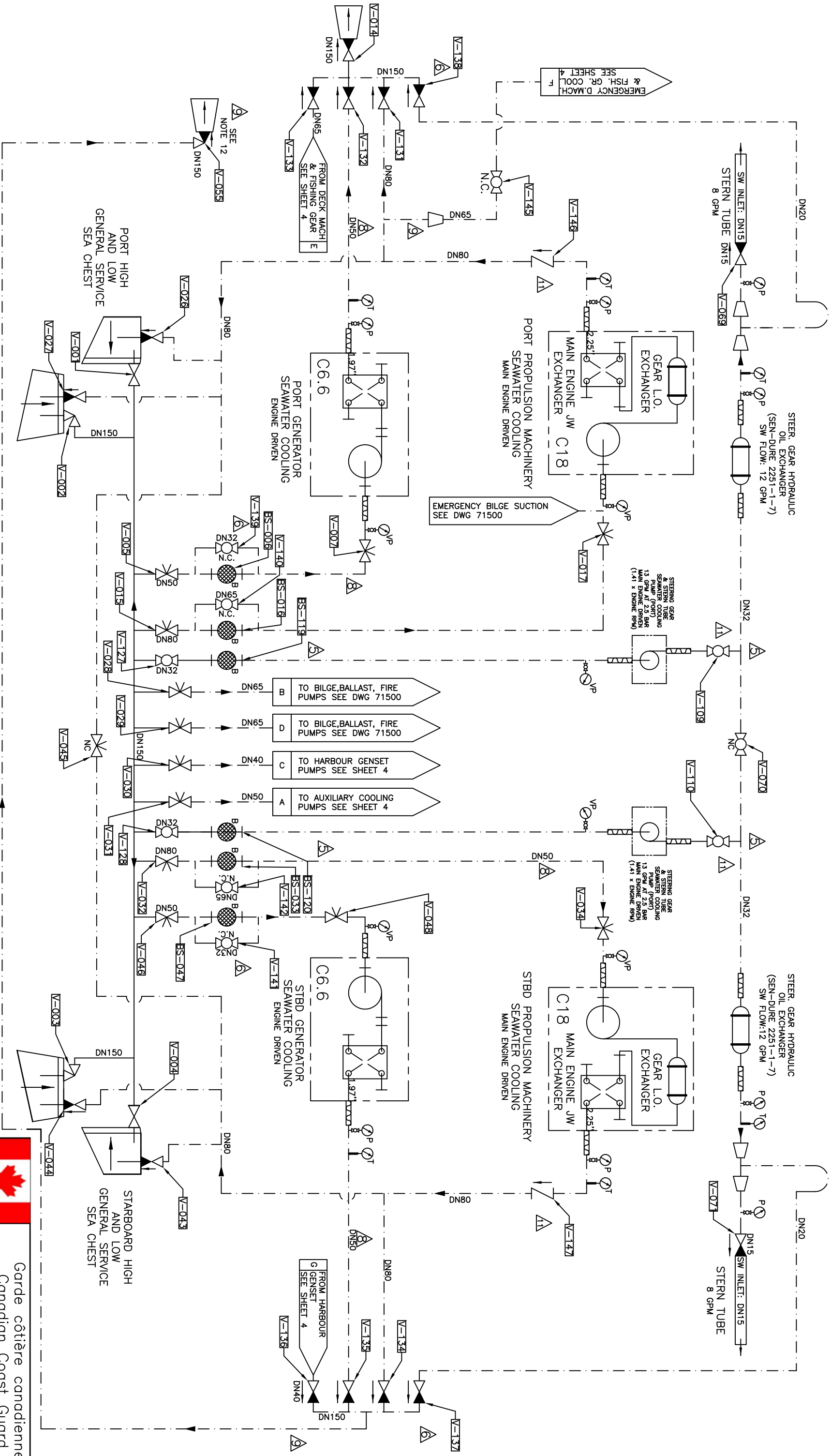
- FOURNIR UN SYSTÈME DE REFRIGÉDISSEMENT DE LA MACHINERIE CONFORMÉMENT AUX NORMES DE CLASSIFICATION. INSTALLER L'ÉQUIPEMENT ET LA TUYAUTERIE À LA SATISFACTION DE L'INSPECTEUR PRÉSENT.
- APRÈS L'INSTALLATION, NETTOYER ET RINCER LE SYSTÈME CONFORMÉMENT AUX EXIGENCES DU FABRICANT.
- SAUVEGARDER À BORD DU NAVIRE UNE POMPE DE RÉSERVE POUR CHAQUE TYPE DE POMPE COMPRISE DANS LE SYSTÈME DE REFRIGÉDISSEMENT DES MOTEURS PRINCIPAUX (POMPE À EAU BRUTE DE LA MACHINERIE DE PROPULSION, POMPE À EAU DE REFRIGÉDISSEMENT, ET POMPE À EAU DU POSTE REFRIGÉDISSEUR). ASSURER QUE LE REMPLACEMENT DES PIÈCES PUISSE S'EFFECTUER À BORD DU NAVIRE.
- LES MAILLES DE CRÉPINES DOIVENT SE CONFORMER AUX RECOMMANDATIONS DU FABRICANT.
- FOURNIR LES SOUPAPES ET LES RACCORDS FLEXIBLES CONFORMÉMENT AUX NORMES DE CLASSIFICATION.
- AVANT LA CONSTRUCTION, VÉRIFIER QUE LA PERTE DE CHARGE DU SYSTÈME DE REFRIGÉDISSEMENT SE CONFORME AUX EXIGENCES DU FABRICANT.
- MAINTENIR OUVERTE LES SOUPAPES ASSOCIÉES À L'ENTRÉE D'EAU AU COLLECTEUR D'EAU DE MER ET Y AFFIXER L'AVIS: "VALVE ALWAYS TO BE KEPT OPEN"
- INTRODUIRE AU SYSTÈME D'EAU DOUCE UN INHIBITEUR DE CORROSION ET/OU UN ANTIGEL CONFORMÉMENT AUX RECOMMANDATIONS DU FABRICANT.
- PLACER DES SOUPAPES GLOBLAIRES DU CÔTÉ DE REFOULEMENT DES ÉCHANGEURS DE CHALEUR AFIN DE PERMETTRE AU SYSTÈME DE S'ÉQUILIBRER.
- SITUER L'ASPIRATION D'URGENCE DE CALE À BAS NIVEAU ET Y INSTALLER UNE SOUPAPE AVEC VOLANT DE COMMANDE PLACÉ AU MOINS 18" (460mm) AU-DESSUS DES TOLES VARANGUES. AFFIXER L'AVIS: "FOR EMERGENCY USE ONLY".
- PLACER L'ÉVACUATION VERS L'EXTÉRIEUR DE FAÇON À CE QU'ELLE NE SOIT JAMAIS OBSTRUÉE PAR LA GLACE. PEU IMPORTE LE TIRANT D'EAU. LES ÉVACUATIONS DOIVENT TOUS ÊTRE SITUÉES DU CÔTÉ BABORD.



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			DRAWN BY : MV	REV : AA	SHEET : 2 OF 4

	Garde côtière canadienne Canadian Coast Guard
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NAVIRE 22M VESSEL COQUE # / HULL # 009-010	PROJECT TITLE : Navire semi-hauturier de recherche halieutique Near Shore Fisheries Research Vessels
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**MÉRIDIEN MARITIME**  
**RÉPARATION**

TITLE :  
**COOLING WATER SYSTEM**

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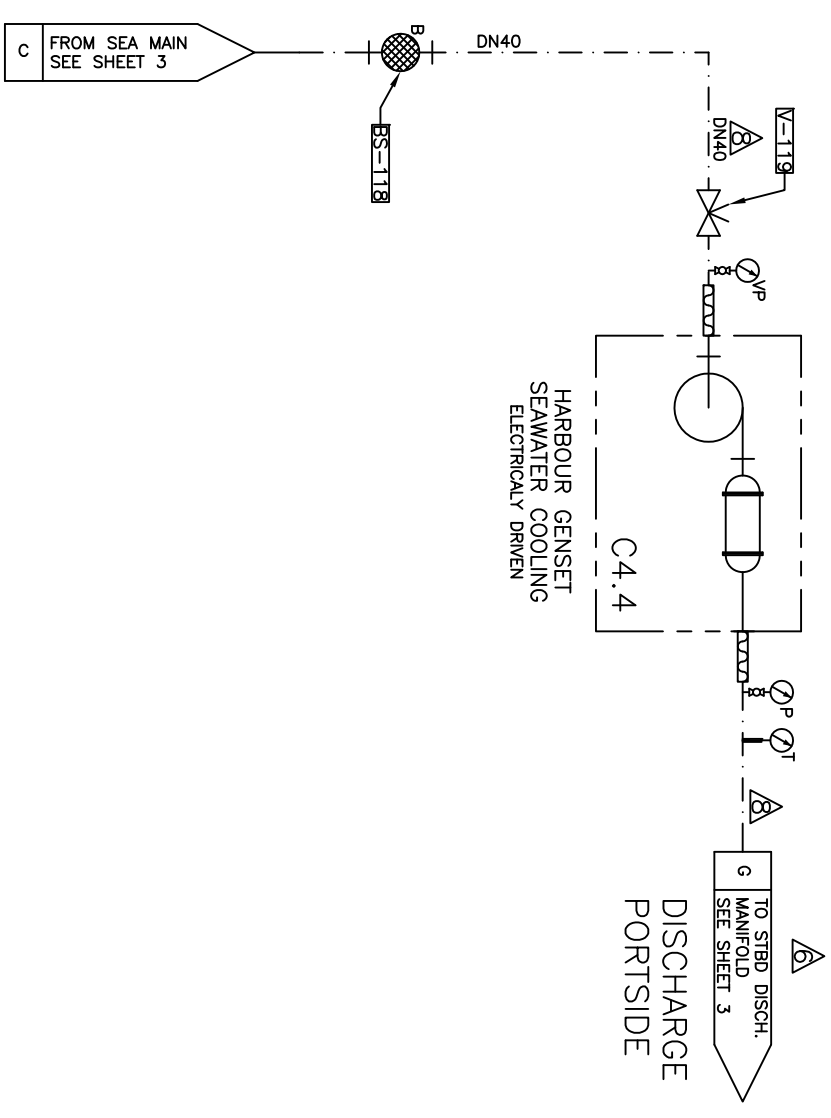
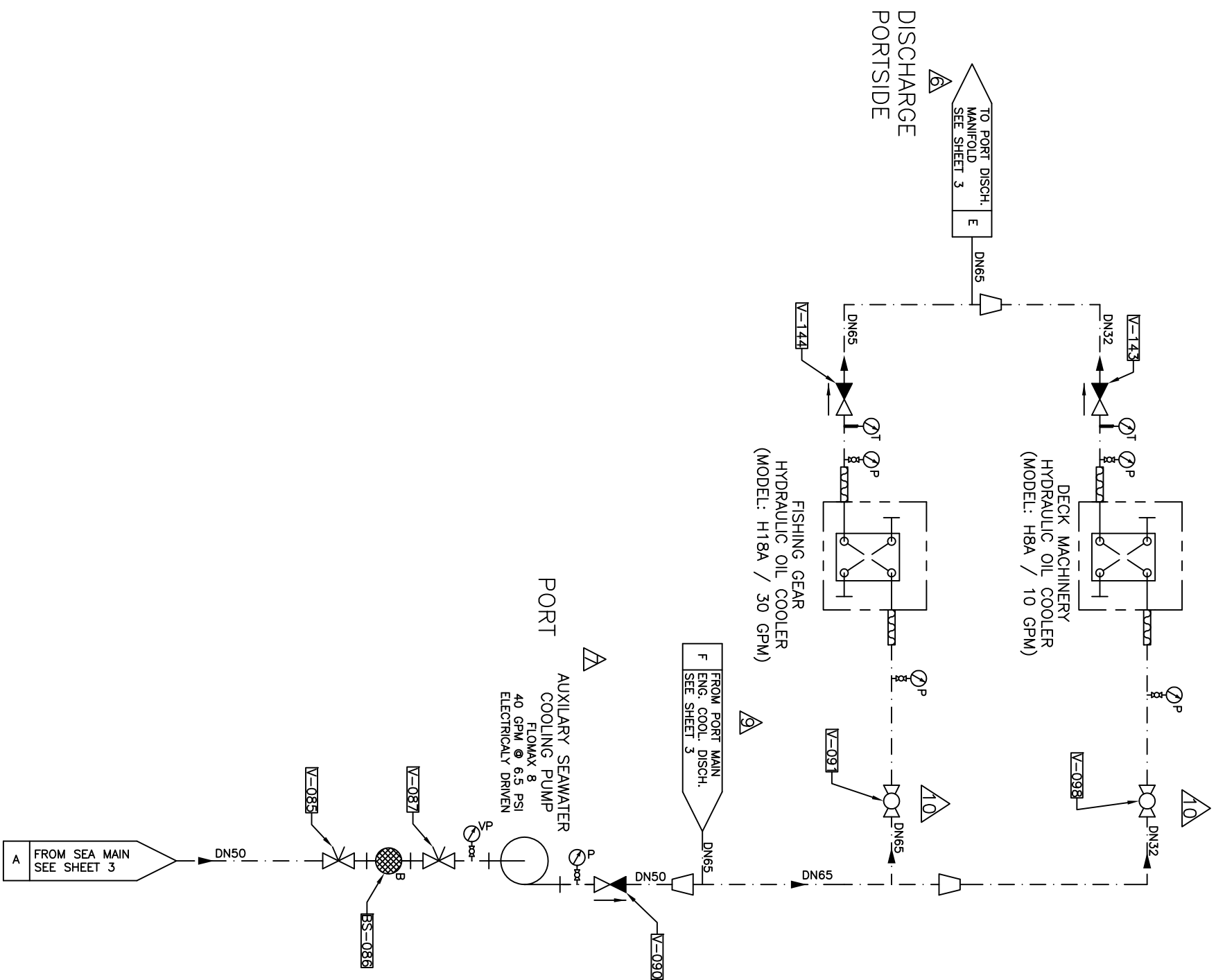
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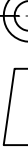

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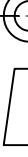

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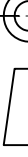

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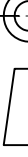



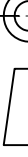

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