

**PURCHASE ORDER
MODIFICATION**

FORM PA-POMD-1 (3322160)

**NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY
NEWPORT NEWS, VIRGINIA**

O.B.R.P. ☐ YES ☒ NO
VENDOR ORDER NO.

MODIFICATION NO. **3**
TO PURCHASE ORDER NUMBER

11-573-635A-16

IMPORTANT - See Note Below

DATE OF ISSUE (BY PA)
May 26, 1964

INSPECTION BY

Owners

INSPECTION AT

Destination

83000

TO: **Warren Pumps, Incorporated
Washington Engineering Co., Inc., Repr.
1700 K Street, N.W.
Washington 6, D.C.**

PLEASE MODIFY THIS PURCHASE ORDER AS SPECIFIED HEREIN. ALL TERMS AND CONDITIONS OF THE ORIGINAL PURCHASE ORDER AND APPENDICES ATTACHED THERETO REMAIN IN EFFECT UNLESS SPECIFICALLY ALTERED BY A MODIFICATION.

ACKNOWLEDGE RECEIPT OF THIS MODIFICATION IMMEDIATELY, ADVISING ITS EFFECT ON PRICE AND DELIVERY.

**L. B. PETERSON, MANAGER OF PURCHASES (OR)
W. K. WILLS, PURCHASING AGENT**

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
3		PUMPS: CENTRIFUGAL, MOTOR DRIVEN MAIN CONDENSATE AND DISTILLER FEED (PUMP PORTIONS ONLY) Cancel. (Special tools)		
ARB WJH-SF A-FBB* A-AOW E-GMB T-JTT A-ESP 5/21		P.A.: Development. No special tools are required. Will not affect price.		

SHEET NO. 1 OF **1** SHEETS
MODIFICATION

*This Number MUST Appear On All
Correspondence, Invoices, Packages
And Shipping Papers.*

MODIFICATION NO. **3**
TO PURCHASE ORDER NUMBER
11-573-635A-16

**PURCHASE ORDER
MODIFICATION**

FORM PA-POMD-1 (3322160)

**NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY
NEWPORT NEWS, VIRGINIA**

O.B.R.P. ☐ YES ☐ NO
VENDOR ORDER NO.

83000

TO: Warren Pumps, Incorporated
Washington Engineering Company, Inc., Repr.
1700 K Street, N.W.
Washington 6, D.C.

MODIFICATION NO. 2
TO PURCHASE ORDER NUMBER

11-573-635A-16

IMPORTANT - See Note Below

DATE OF ISSUE (BY PA)

February 21, 1964

INSPECTION BY
Owners

INSPECTION AT
Destination

PLEASE MODIFY THIS PURCHASE ORDER AS SPECIFIED HEREIN. ALL TERMS AND CONDITIONS OF THE ORIGINAL PURCHASE ORDER AND APPENDICES ATTACHED THERETO REMAIN IN EFFECT UNLESS SPECIFICALLY ALTERED BY A MODIFICATION.

ACKNOWLEDGE RECEIPT OF THIS MODIFICATION IMMEDIATELY, ADVISING ITS EFFECT ON PRICE AND DELIVERY.

L. B. PETERSON, MANAGER OF PURCHASES (OR)
W. K. WILLS, PURCHASING AGENT

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
2		PUMPS: CENTRIFUGAL, MOTOR DRIVEN MAIN CONDENSATE AND DISTILLER FEED (PUMP PORTIONS ONLY) - Increase discharge pressure from 42 PSIG to <u>50</u> PSIG.		

ARB
2/18
WJH-br
FBB*

SHEET NO. 1 OF 1 SHEETS
MODIFICATION

This Number MUST Appear On All
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MODIFICATION NO. 2
TO PURCHASE ORDER NUMBER
11-573-635A-16

**PURCHASE ORDER
MODIFICATION**

FORM PA-POMD-1 (3322160)

**NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY
NEWPORT NEWS, VIRGINIA**

O.B.R.P. ☐ YES ☐ NO

VENDOR ORDER NO. **NO**

MODIFICATION NO. **1**
TO PURCHASE ORDER NUMBER

83000

H-573-635A-16

IMPORTANT - See Note Below

DATE OF ISSUE (BY PA)

January 28, 1964

INSPECTION BY

Owners

INSPECTION AT

Destination

TO:

**Warren Pumps, Incorporated
Washington Engineering Company, Inc., Repr.
1700 K Street, N.W.
Washington 6, D.C.**

PLEASE MODIFY THIS PURCHASE ORDER AS SPECIFIED HEREIN. ALL TERMS AND CONDITIONS OF THE ORIGINAL PURCHASE ORDER AND APPENDICES ATTACHED THERETO REMAIN IN EFFECT UNLESS SPECIFICALLY ALTERED BY A MODIFICATION.

ACKNOWLEDGE RECEIPT OF THIS MODIFICATION IMMEDIATELY, ADVISING ITS EFFECT ON PRICE AND DELIVERY.

**L. B. PETERSON, MANAGER OF PURCHASES (OR)
W. K. WILLS, PURCHASING AGENT**

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL												
		PUMPS: CENTRIFUGAL, MOTOR DRIVEN MAIN CONDENSATE AND DISTILLER FEED (PUMP PORTIONS ONLY) - GROUP 635-1 - For Humble Oil and Refining Co. Tankers Change the "Title" to read as shown above. On Sheet 1, at top of the Quantity Column, add: <u>2 Ships</u>. Increase quantities as follows: <table><tr><td><u>From</u></td><td><u>To</u></td></tr><tr><td>2</td><td>4</td></tr><tr><td>1</td><td>2</td></tr></table> Change items 3 and 5 to read as follows: <table><tr><td>3</td><td>2</td><td>Outfits of special tools in accordance with Appendix B, Section V, one outfit per ship.</td></tr><tr><td>5</td><td>7</td><td>Instruction books in accordance with Appendix B, Section IV.</td></tr></table> This modification exercises the option in the Basic Purchase Order concerning purchase for a second vessel. Add shipment of second shipset of material August 24, 1964. Change Total Price to:	<u>From</u>	<u>To</u>	2	4	1	2	3	2	Outfits of special tools in accordance with Appendix B, Section V, one outfit per ship.	5	7	Instruction books in accordance with Appendix B, Section IV.		
<u>From</u>	<u>To</u>															
2	4															
1	2															
3	2	Outfits of special tools in accordance with Appendix B, Section V, one outfit per ship.														
5	7	Instruction books in accordance with Appendix B, Section IV.														

ARB
1/21
WJH-dm
FBB

ARB
1/21
WJH-dm
FBB*

SHEET NO. 1 OF 1 SHEETS
MODIFICATION

This Number MUST Appear On All Correspondence, Invoices, Packages And Shipping Papers.

MODIFICATION NO. **1**
TO PURCHASE ORDER NUMBER
H-573-635A-16

EXX-MOR-002500

**PURCHASE ORDER
DISTRIBUTION COPY**
FORM PA-POD-1 (9322100)

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

LEAD YARD ORDER NO.

O.B.R.P. ☐ YES ☐ NO

VENDOR ORDER NO.

VENDOR

Warren Pumps, Incorporated
Washington Engineering Co., Inc., Repr.
1700 K Street, N. W.
Washington 6, D. C.

N.N. VENDOR NO.

83000

YD. REQ. NO.

PURCHASE ORDER NUMBER

H-573-635A-16

IMPORTANT

See Note Below

DATE OF ISSUE (BY PA)

August 30, 1963

INSPECTION BY

Owners

INSPECTION AT

Destination

APPLICABLE
APPENDIX

A- See below

BUYER	PLACEMENT	COMMODITY	AMOUNT	DATE SHIPMENT WANTED	DATE SHIPMENT PROMISED									
3	10	350		May 15, 1964										
F.O.B.	Shipping Point	TERMS	Net 30 days	CHARGE NO.	STOP NO.									
				635										
ITEM	QUANTITY	DESCRIPTION	IDENT. NO.	UNIT PRICE	TOTAL PRICE									
		See notes on last sheet	See below											
		PUMPS: CENTRIFUGAL, MOTOR DRIVEN MAIN CONDENSATE AND DISTILLER FEED (PUMP PORTIONS ONLY) - GROUP 635-1 - For Humble Oil and Refining Co. Tanker												
		<table><tr><td></td><td>Horiz.</td><td>Capacity</td><td></td><td>Disch.</td></tr><tr><td>Service</td><td>or Vert.</td><td>GPM</td><td>Suction</td><td>Press.</td></tr></table>		Horiz.	Capacity		Disch.	Service	or Vert.	GPM	Suction	Press.		
	Horiz.	Capacity		Disch.										
Service	or Vert.	GPM	Suction	Press.										
1	2	Main Condensate	Vert. 300	Condenser VAC. 28.5" Hg 30" Subm	280 Ft. Total head									
2	1	Distiller Feed	Horiz. 180	Flooded	42 PSIG									
3	1	Outfit of special tools in accordance with Appendix B, Section V.			Advise									

PURCHASE ORDER NO.

H-573-635A-16

SHEET 1 OF 6 SHEETS
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This Number MUST Appear On All
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NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY
PUMPS: CENTRIFUGAL, MOTOR DRIVEN
MAIN CONDENSATE AND DISTILLER
FEED (PUMP PORTIONS ONLY)

PURCHASE ORDER NO.

H-573-635A-16

DISTRIBUTION COPY

FORM PA-POD-2 (3322102)

ITEM	QUANTITY	DESCRIPTION	RECORDS
4	See Appendix	Drawings	
4-a	See Appendix	Drawings for preliminary and/or foundation information, in accordance with Appendix B, Section III A.	
4-b	See Appendix	Drawings for approval, in accordance with Appendix B, Section III B.	
5	See Appendix	Instruction books in accordance with Appendix B, Section IV.	
<u>GENERAL REQUIREMENTS</u> Pumps shall have non-overloading characteristics. The casing for item 1 shall be split vertically so the pump can be dismantled without removing the driver or disturbing suction and discharge connections. A coupling is to be provided between the driving and driven components to facilitate replacement. All suction and discharge connections shall be flanged in accordance with the applicable A.S.A. Standards for the pressures and temperatures involved. All connections shall be as approved. Vents and drain connections are to be provided on the top and bottom, respectively, of each pump casing. Pump couplings for item 1 shall be steel. Complete couplings are to be furnished, including driver half coupling. Connections for shipbuilders piping shall be suitable for withstanding loads imposed upon them due to normal expansion and contraction of the piping attached thereto in accordance with good marine practice. Foundation bolts are not to be less than 5/8" in diameter for any pump. Alemite fittings, type A336 or equal, shall be provided for all pump bearings requiring grease lubrication.			

SHEET NO. 2

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PURCHASE ORDER NO.

H-573-635A-16

EXX-MOR-002502

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

PURCHASE ORDER NO.

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PUMPS: CENTRIFUGAL, MOTOR DRIVEN
MAIN CONDENSATE AND DISTILLER
FEED (PUMP PORTIONS ONLY)

H-573-635A-16

FORM PA-POD-2 (3322102)

ITEM	QUANTITY	DESCRIPTION	RECORDS
		Motors and controllers will be furnished by the shipbuilder. Motors will be shipped to the plant of the pump manufacturer for assembly with the pumps. Wearing rings are to be fitted in the pump casings and retained by tongue and groove or equivalent arrangement. Impeller waering rings shall be provided for the pumps covered by item 1. Bearing brackets for item 1 are to be integral with the fixed section of the casing or bolted to the fixed section and secured by male and female construction and dowelled. Jacking bolts are to be incorporated to facilitate breaking the mating flanges. Pumps are to be balanced hydraulically with suitable thrust bearings to absorb any remaining thrust which may occur under operating conditions. Shaft sleeves are to be securely locked to the shaft and sealed to prevent leakage between shaft and sleeve. Stuffing boxes are to be provided with ample depth for packing. Where required, to facilitate packing of stuffing boxes, glands are to be split. Ample water seal rings are to be provided for pumps which operate under suction lift and for pumps requiring lubrication or cooling of stuffing boxes. Pumps for item 1 are to be equipped with sealed, deep grooved ball bearings, contained in housings and removable as a unit with the pump shaft. Bearing water shields or slingers are to be designed to make the bearings splash and dripproof. <u>SPECIAL REQUIREMENTS</u> <u>Main Condensate Pump</u> The pumps shall be two-stage single suction, with internal water lubricated lower bearing, external grease lubricated upper ball bearing and external gland water seal connections. Pumps shall be complete with foundation baseplates, motor mounting brackets and flexible couplings. The pumps shall be suitable for operation at the	

SHEET NO. 3

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PURCHASE ORDER NO.

H-573-635A-16

EXX-MOR-002503

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

**PUMPS: CENTRIFUGAL, MOTOR DRIVEN
MAIN CONDENSATE AND DISTILLER
FEED (PUMP PORTIONS ONLY) -**

PURCHASE ORDER NO.

H-573-635A-16

DISTRIBUTION COPY

FORM PA-POD-2 (3322102)

ITEM	QUANTITY	DESCRIPTION	RECORDS															
		maximum vacuum obtainable regardless of the vacuum specified herein, particularly with reference to sealing and packing of glands. Flanged connections shall be provided for venting the pump casing to the condenser. <u>Distiller Feed Pump</u> Pump shall be of the horizontal close coupled type. <u>MATERIALS</u> <table><tr><th>Item</th><th>Casing</th><th>Impellers</th><th>Shafts</th><th>Shaft Sleeves</th></tr><tr><td>1</td><td>Cast Iron</td><td>Monel</td><td>Stainless Steel</td><td>Stainless Steel</td></tr><tr><td>2</td><td>Comp. M or G</td><td>Comp. M or G</td><td>K-Monel</td><td>Comp. M</td></tr></table> Casing wearing rings - Comp. M or G Impeller wearing rings - Comp. M or G Stuffing box bushings - Comp. M Seal rings - Comp. M or Monel Gland studs and nuts - Steel All pump glands shall be properly packed. Type and make of packing shall be as approved. All pumps are to be provided with shaft sleeves. <u>TESTS</u> Pump pressure parts are to be given a hydrostatic test pressure of twice the working pressure. Each pump is to be given a shop test to establish that the unit is mechanically satisfactory. After completion of shop tests at vendor's plant, any packing liable to cause corrosion by remaining in place during shipping or storage of the equipment is to be removed, stowed separately, and carefully marked so as to assist in its reinstallation. Rods or shafts in way of the packing are to be protected properly from corrosion during shipment or storage of the equipment.	Item	Casing	Impellers	Shafts	Shaft Sleeves	1	Cast Iron	Monel	Stainless Steel	Stainless Steel	2	Comp. M or G	Comp. M or G	K-Monel	Comp. M	
Item	Casing	Impellers	Shafts	Shaft Sleeves														
1	Cast Iron	Monel	Stainless Steel	Stainless Steel														
2	Comp. M or G	Comp. M or G	K-Monel	Comp. M														

SHEET NO. 4

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PURCHASE ORDER NO.

H-573-635A-16

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FORM PA-POD-2 (3322102)

11-573-635A-16

ITEM	QUANTITY	DESCRIPTION	RECORDS
		All equipment must meet the applicable requirements contained in Appendix B-573. Each pump must be substantially tagged or clearly marked for identification with the item and purchase order number thereof. <u>Applicable Appendices</u> A-573 B-573 Rev. A, dated June 26, 1963 Vendors plans were due in Newport News prior to the placement of this order. Your prompt forwarding of plans will be appreciated. Manufacturing Authorization: Release to manufacture is withheld pending approval of vendor's drawings. Any work done prior to approval of the drawings and authorization to proceed with work, except by specific written instructions from this Company, will be at the vendor's own risk. Release to manufacture will be given by a letter. Option: In the event the Owners, by February 15, 1964, contract with the Purchaser for the construction of a tanker essentially duplicating that for which the equipment specified herein is to be used, the Vendor agrees to furnish to the Purchaser equipment duplicating that specified herein at a price of: In the event the Owners, within eighteen months, contract with the Purchaser for the construction of a third and/or fourth vessel of the same design, the Vendor agrees to furnish to the purchaser a third and/or fourth set of equipment duplicating that specified herein at the price of the second shipset of equipment escalated in accordance with the Bureau of Labor Statistics Index for Metal and Metal Products, but not to exceed 10%.	

PUMPS: CENTRIFUGAL, MOTOR DRIVEN
MAIN CONDENSATE AND DISTILLER
FEED (PUMP PORTIONS ONLY) :

11-573-635A-16

FORM PA-POD-2 (3322102)

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H-573-635A-16

EXX-MOR-002506