

**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. **3**
TO PURCHASE ORDER NUMBER

85760

TO: **The Whiton Machine Company
New London, Connecticut**

H-573-635A-20

IMPORTANT - See Note Below

DATE OF ISSUE (BY PA)
January 28, 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
		TURBINES: STEAM, for Deepwell Solvent Pumps - GROUP 635-3 - 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>.		
1		Increase quantity from 2 to <u>4</u> .		
		Change item 2 to read as follows:		
2	2	Outfits of special tools in accordance with Appendix B, Section V, one outfit per ship.		
4		Increase quantity from 6 to <u>7</u> .		
		This modification exercises the option in the basic purchase order concerning purchase for a second vessel. Add shipment for second shipset of material July 2, 1964. Increase total price by [REDACTED]		

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. **3**
TO PURCHASE ORDER NUMBER
H-573-635A-20

**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.

85760

TO: **The Whiton Machine Company
New London, Connecticut**

MODIFICATION NO.
TO PURCHASE ORDER NUMBER

H-573-635A-20

IMPORTANT -
See Note Below

DATE OF ISSUE (BY PA)

January 22, 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
		TURBINES: STEAM, For Deepwell Solvent Pumps - Add the following: A connection shall be provided for determining steam chest pressure. The connection is to be a 1/2" extra heavy I.P.S. carbon steel nipple 4" long with plain end. Advise effect on price at once.		

ARB
1/8
WJH-br
FBB*

SHEET NO. 1 OF SHEETS
MODIFICATION

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

MODIFICATION NO. **2**
TO PURCHASE ORDER NUMBER
H-573-635A-20

EXX-MOR-002453

**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.

85760

TO: The Whiton Machine Company
New London, Connecticut

MODIFICATION NO. 1
TO PURCHASE ORDER NUMBER

H-573-635A-20.....
IMPORTANT -

See Note Below

DATE OF ISSUE (BY PA)

October 30, 1963

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
		TURBINES: STEAM, For Deepwell Solvent Pumps - On Sheet 2 delete fourth line from bottom which reads: "High pump discharge trip (set at 150 psig)." On Sheet 3 delete first line which reads: "Fixed vibrating reed tachometer." Add the following: <u>Note:</u> The Shipyard will furnish a remote mounted mechanical tachometer. On Sheet 4 delete the last sentence in the second paragraph which reads: "The same ---- button stations."		

ARB
WJH-HMP-oc
FBB*
JTT
SHG
JLW
HJC
GWB
TEL
RLS
9/23
10/25

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-20

EXX-MOR-002454

**PURCHASE ORDER
DISTRIBUTION COPY**
FORM PA-POD-1 (3322100)

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY
LEAD YARD ORDER NO.

O.B.R.P. ☐ YES ☐ NO
VENDOR ORDER NO.

VENDOR

The Whiton Machine Company
New London, Connecticut

N.N. VENDOR NO.

85760

PURCHASE ORDER NUMBER

H-573-635A-20

YD. REQ. NO.

IMPORTANT-

See Note Below

DATE OF ISSUE (BY PA)
October 15, 1963

INSPECTION BY

Owner

INSPECTION AT

Destination

APPLICABLE
APPENDIX

A. See Below

BUYER	PLACEMENT	COMMODITY	AMOUNT	DATE SHIPMENT WANTED	DATE SHIPMENT PROMISED
				March 2, 1964	
F.O.B. New London, Conn.		TERMS 1/2 of 1%-10 Days		CHARGE NO. 635	STOP NO.
ITEM	QUANTITY	DESCRIPTION	IDENT. NO.	UNIT PRICE	TOTAL PRICE
		See notes on last sheet.	439-T		
		TURBINES: STEAM, for Deepwell Solvent Pumps - GROUP 635-3 - For Humble Oil and Refining Company Tanker			
		One print of our drawing No. 198350 Rev. 5 forms part of this purchase order.			
1	2	Vertical marine turbines, Whiton type BKSv.			
2	1	Outfit of special tools in accordance with Appendix B, Section V.			
3	See Appendix	Drawings			
3-a	See Appendix	Drawings for preliminary and/or foundation information, in accordance with Appendix B, Section IIIA.			
3-b	See Appendix	Drawings for approval, in accordance with Appendix B, Section IIIB.			

PURCHASE ORDER NO.

H-573-635A-20

SHEET 1 OF 6 SHEETS

DISTRIBUTION COPY

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

EXX-MOR-002455

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

PURCHASE ORDER NO.

DISTRIBUTION COPY

FORM PA-POD-2 (3322102)

STEAM, for Deepwell Solvent Pumps -

H-573-635A-20

ITEM	QUANTITY	DESCRIPTION	RECORDS
4	6	Instruction books in accordance with Appendix B, Section IV. The turbines are to be for non-condensing operation and are to be arranged for direct drive of the pumps through a rigid coupling. The turbines are to be furnished with a type "P" base for mounting to the pump. The turbine half couplings and bases for mounting to the pumps will be provided by the pump manufacturer, Bingham Pump Co. The necessary boring information, etc. for the shaft couplings and drawings of the turbine base are to be forwarded to the pump vendor with copy to Newport News Shipbuilding and Dry Dock Company as soon as available. This is to be accomplished in the most expeditious manner possible. The turbines shall be equipped with the following: Complete self contained lubrication system (Upper bearing grease lubricated ball type, lower bearing oil lubricated roller thrust type.) Overspeed trip (set at not over 115% rated speed) Constant speed governor (adjustable to 80% speed) Throttle valve Steam Strainer High back pressure trip (set at 25 psig) High pump discharge trip (set at 150 psig) Sentinel valve on casing Emergency trip suitable for operation by shipyard furnished push button stations	

SHEET NO. 2

DISTRIBUTION COPY

PURCHASE ORDER NO.
H-573-635A-20

EXX-MOR-002456

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

PURCHASE ORDER NO.

DISTRIBUTION COPY: STEAM, for Deepwell Solvent Pumps -

FORM PA-POD-2 (3322102)

H-573-635A-20

ITEM	QUANTITY	DESCRIPTION	RECORDS
		Fixed vibrating reed tachometer The turbines are to be suitable for carrying the pump down thrust of 5500 pounds. Each turbine is to be capable of delivering 200 H.P. at not over 1760 R.P.M. The guaranteed water rate at the above rating shall not exceed <u>68.5 lbs/HP-HR</u> when supplied with desuperheated steam at 300 psig and 500°F. total temperature at the turbine inlet flange and operating at 10 psig back pressure. Each turbine shall normally operate with steam at 280 psig and 498°F. total temperature with a back pressure of 10 psig. The turbine must be of ample strength to withstand steam at 330 psig. All exposed turbine and governor parts are to be suitable for installation on the open deck where they will be subject to salt water. The lubrication system is to assure adequate lubrication at all speeds up to and including the overspeed trip setting. The vendor is to advise the shipyard immediately the amount of cooling water required. The cooling medium provided will be salt water. Materials in contact with the cooling medium must be suitable for use with salt water and designed to withstand a maximum pressure of 80 psig. Grease fittings are to be suitable for use with the Alemite grease gun and fitted with a vent as necessary to prevent over greasing. Rotation is to be clockwise when viewing the turbine from shaft coupling end.	

SHEET NO. 3

DISTRIBUTION COPY

PURCHASE ORDER NO.
H-573-635A-20

EXX-MOR-002457

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

PURCHASE ORDER NO.

DISTRIBUTION COPY

FORM PA-POB-2 (3322102)

STEAM, for Deepwell Solvent Pumps -

H-573-635A-20

ITEM	QUANTITY	DESCRIPTION	RECORDS
		Due to the self-priming feature of the deep well pumps (Bingham Pump Co.) the turbines will be subjected to rapidly fluxuating load conditions and the constant speed governor system must be suitable to prevent undue acceleration or trip out of the turbine due to overspeed. All solenoids and switches are to be explosion proof. The solenoids must be suitable to be continuously energized during operation and arranged to trip the turbine when de-energized. The same solenoid employed for the high pump discharge trip is to be used with the remote emergency trip push button stations. Electrical equipment is to be suitable for 115 volt, 60 cycle alternating current. The turbines shall be tested by the manufacturer for satisfactory operation, alignment, etc. Further tests will be conducted at the Shipyard to insure satisfactory operation with the pumps after installation on board the ship. 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 properly protected from corrosion during shipment or storage of the equipment. Lagging clips shall be welded or otherwise attached to each unit, in proper location, to permit attachment of insulation. They are to be located close to bolted joints where fixed insulation will terminate. The joint will be covered with portable pad. Connections are to be ASA standard in accordance with the applicable pressure rating. The raised faces of flanges over 150 pounds working pressure are to be machined in accordance with drawing number 198350 Rev. 5.	

SHEET NO. 4

DISTRIBUTION COPY

PURCHASE ORDER NO.
H-573-635A-20

EXX-MOR-002458

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

PURCHASE ORDER NO.

DISTRIBUTION COPY: STEAM, for Deepwell Solvent Pumps -

H-573-635A-20

FORM PA-POD-2 (3322102)

ITEM	QUANTITY	DESCRIPTION	RECORDS
		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. <u>All turbine lagging will be furnished by the shipyard, but all attached gland sealing and lubrication piping is to be furnished with the turbines.</u> This equipment must meet all the applicable requirements of Appendix B-573. The material furnished for each item shall be substantially tagged or clearly marked for identification with the item and purchase order number thereof. For identification purposes during installation, the following electrical components are to have the following symbol numbers plainly marked thereon, or have a durable tag bearing these numbers securely attached thereto: Solenoid - 5094 Pressure Switch - 5095 <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.	

SHEET NO. 5

DISTRIBUTION COPY

PURCHASE ORDER NO.
H-573-635A-20

EXX-MOR-002459

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

PURCHASE ORDER NO.

DISTRIBUTION COPY

FORM PA-POD-2 (3322102)

STEAM, for Deepwell Solvent Pumps -

H-573-635A-20

ITEM	QUANTITY	DESCRIPTION	RECORDS
		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%. Total Price less item 2 : Advise increase for addition of tachometer and decrease for elimination of spares. <u>FOR NEWPORT NEWS INFORMATION ONLY:</u> Schd. Req'd. Date 7-1-63 Wanted 3-23-64 This order should have been placed by 7-1-63 in order to meet the "required in yard" date, when using average lead time.	

ARB
WJH-HMP/jf
FBB*
JTT
SHG
JLW
HJC
GWB
TEL
RLS
9/23

SHEET NO. 6

DISTRIBUTION COPY

PURCHASE ORDER NO.
H-573-635A-20

EXX-MOR-002460