



NATIONAL OILWELL

One Company... Unlir

101T-4M POLYMER INJECTION PUMPS

PUMP SECTION

- 1 NATIONAL OILWELL 101T-4M TRIPLEX PLUNGER PUMP INCLUDES:
- 2.375" TUNGSTEN CARBIDE PLUNGERS
 - DUPLEX (AUSTENITIC/FERRITIC) STAINLESS STEEL FLUID END
 - ASTM A890-92 GRADE 4A CASINGS WITH SUPPLEMENTARY REQUIREMENTS S6 & S12
 - INTEGRAL DUPLEX (AUSTENITIC/FERRITIC) STAINLESS STEEL STUFFING BOXES
 - ASTM A890-92 GRADE 4A CASINGS WITH SUPPLEMENTARY REQUIREMENTS S6 & S12
 - 4.0" ANSI 300# FF SUCTION FLANGE AND 2.0" ANSI 1500# FF DISCHARGE FLANGE
 - NITRONIC 50 SPHERICAL VALVES WITH INCONEL VALVE SPRINGS
 - 838 "J" UTEX GENERAL SERVICE PACKING (NITRILE/NYLON/TEFLON/PHENOLIC & DUCK LIP COMPOSITION AND HARD COMPOSITE TOP & BOTTOM ADAPTERS)
 - 316SS GLAND NUT, 316SS THROAT BUSHING, 316SS LANTERN RING, 316SS ADAPTER, 316SS FOLLOWER
 - PLEASE REVIEW THE ATTACHED SHEETS FOR ADDITIONAL INFO

- 2 4.0" ANSI 300# BLIND FLANGE
- 316 SS CONSTRUCTION
 - MTR PROVIDED WITH FLANGE

- 3 2.0" ANSI 1500# BLIND FLANGE
- 316 SS CONSTRUCTION
 - MTR PROVIDED WITH FLANGE

LUBRICATION SECTION

- 4 3-FEED PLUNGER LUBRICATION SYSTEM INCLUDES:
- LINCOLN/PREMIER LUBE PUMP
 - MOUNTING BRACKET, SHEAVES, BELTS, GUARD, 316 SS TUBING, & CHECK VALVES
 - LUBRICATION INTO STUFFING BOX
 - C/W 507L IN-LUBRICATOR RESERVOIR LEVEL CONTROLLER

- 5 OPTIONAL, INDEPENDENT AUXILIARY POWER END LUBRICATION SYSTEM INCLUDES:
- VIKING G475M GEAR PUMP
 - MECHANICAL SEAL (CARBON/GRAPHITE/BUNA)
 - STANDARD CONSTRUCTION: DUCTILE IRON
 - 143TC FRAME SIZE CLOSED COUPLED UNIT
 - TECO WESTINGHOUSE OPTIM HE PLUS PREMIUM EFFICIENCY ELECTRIC MOTOR
 - MODEL PDH00106TE2
 - 1 HP, 3PH/60HZ/230-460V, 1200 RPM, TEFC ENCLOSURE, FRAME SIZE 145TC
 - CLASS F INSULATION, CLASS I DIVISION II CLASSIFICATION, VFD COMPATIBLE
 - INSTALLED WITH 316 SS TUBING
 - REQUIRED FOR PUMP OUTPUT SPEEDS BELOW 100 RPM

MOTOR SECTION

- 6 TECO WESTINGHOUSE OPTIM HE PLUS PREMIUM EFFICIENCY ELECTRIC MOTOR
- MODEL PDH07506TE2
 - 75 HP, 3PH/60HZ/230-460V, 1200 RPM, TEFC ENCLOSURE
 - FRAME SIZE 405T
 - CLASS F INSULATION
 - CLASS I DIVISION II CLASSIFICATION, VFD COMPATIBLE (10:1 CT) TURN DOWN

PUMP SKID SECTION

- 7 TOP MOUNT, V-BELT DRIVE, PUMP UNITIZATION INCLUDING SKID AND GUARD
- SAND-BLASTED AND PAINTED
 - C/W MOTOR/PUMP ALIGNMENT
 - SIMILAR TO THE ATTACHED TYPICAL 101T-4M UNITIZATION DRAWING

- 8 OPTIONAL, FLUID-END DRIP TRAY FOR THE NATIONAL OILWELL PUMP



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V-BELT DRIVE SECTION

- 9 V-BELT DRIVE FOR THE SELECTED NATIONAL OILWELL PUMP AND MOTOR INCLUDES:
- (1) 5V10.3X5-E DRIVER SHEAVE
 - (1) EX2-7/8" DRIVER BUSHING
 - (1) 5V50.0X5-J DRIVEN SHEAVE
 - (1) JX3.0" DRIVEN BUSHING
 - (5) 5VX1800 BELTS
 - 37.37" CENTER DISTANCE
 - 1.49 SERVICE FACTOR
 - THE PUMP WILL BE SIZED FOR APPROXIMATELY 250 RPM THEREFORE A SHEAVE TURN DOWN RATIO OF APPROXIMATELY 4.8:1 WILL BE SUPPLIED

INSTRUMENTATION SECTION

- 10 METRIX VIBRATION TRANSMITTER
- MODEL ST5484E-121-02-000
 - 1.0 ips (25mm/s),pk
 - 1/4" NPT CONNECTION, CLASS 1 DIVISION 1, EXPLOSION PROOF
 - 0-20 Ma
 - INSTALLED
- 11 MURPHY COMBINATION LIQUID LEVEL GAUGE AND LOW LEVEL SWITCH:
- (TO MONITOR CRANKCASE OIL LEVEL):
 - MODEL EL-150EX, EXPLOSION PROOF ENCLOSURE
 - INSTALLED
- 12 OPTIONAL, LCE-9 TANK LEVEL CONTROLLER AND SWITCH
- SHIPPED LOOSE

PULSATION DAMPENERS SECTION

- 13 HYDRIL SUCTION DAMPENER
- MODEL NUMBER IP-2.5-275, P/N 3102237-07021
 - 2.5 GALLON, HYDROGENATED NITRILE BLADDER
 - 4.0" ANSI 150# FLANGE
 - 316 SS BOTTOM PLATE
 - C/W CRN REGISTRATION NUMBER AND U-1A
- 14 HYDRIL DISCHARGE DAMPENER
- MODEL NUMBER IP-1-1440, P/N 3102791-07021
 - 1.0 GALLON, HYDROGENATED NITRILE BLADDER
 - 3.0" ANSI 600# FLANGE
 - 316 SS BOTTOM PLATE
 - C/W CRN REGISTRATION NUMBER AND U-1A

PULSATION DAMPENERS SECTION

- 15 NON-WITNESSED MECHANICAL RUN TEST
- THE TEST IS STANDARD FOR ALL PUMPS AND UPON REQUEST THE TEST RESULTS WILL BE PROVIDED WITH PUMP
- 16 NON-WITNESSED HYDROSTATIC TEST
- CHART RECORDING OF THE HYDROTEST WILL BE PROVIDED WITH EACH PUMP
- 17 MILL TEST REPORT (MTR)
- A MTR WILL BE PROVIDED WITH EACH PUMP
- 18 (1) OWNERS MANUAL WILL BE PROVIDED WITH EACH PUMP

**THE TOTAL PRICE IS FOR QUANTITIES SELECTED ABOVE ONE
(ITEMS WITH A QUANTITY OF "0" ARE NOT INCLUDED IN THE TOTAL PRICE)**



INJECTION PUMP SIZING DATA

	Case 1	Case 2	Case 3
CONTINUOUS DUTY APPLICATION			
DISCHARGE PRESSURE	kpag 9,180		
SUCTION PRESSURE	kpag 345		
VOLUMETRIC EFFICIENCY	% 94%		
MECHANICAL EFFICIENCY	% 90%		
PUMPING RATE	m3/day 333		
Brake HP (VE & ME)	54		
SUCTION PRESSURE	psig 50		
DISCHARGE PRESSURE	psig 1331		
HIGH INLET PRESSURE			
PUMPING RATE	usgpm 61		
PUMP MODEL	101T		
STROKE LENGTH	inches 4.5		
SELECTED PLUNGER DIA.	inches 2.375		
FLUID END OPTIONS	M		
MAX. PLUNGER PRESSURE	psig 1,490		
PUMP SPEED	rpm 251		
% OF MAX. PUMP SPEED	% 63%		
MAX. CONTINUOUS SPEED	rpm 400		
MAX. INTERMITTENT SPEED	rpm 400		

Pump Sized By:
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