

TENSOL Equipment Sourcing and Supply Solutions **TECHNICAL & ENGINEERING SOLUTION INC.**

**VENTA Y SUMINISTRO DE EQUIPOS INDUSTRIALES,
MAQUINARIAS, REPUESTOS Y MATERIALES
ESPECIALES PARA LATINO-AMÉRICA Y EL CARIBE**

743 Shotgun Road, Broward Lakes Business Park. Sunrise, FL 33326. TELF.: (954) 473-9955

e-mail: tensolinc@gmail.com www.tensolinc.com

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**VENTA Y SUMINISTRO EQUIPOS INDUSTRIALES, MAQUINARIAS,
REPUESTOS Y MATERIALES ESPECIALES PARA LATINO-AMÉRICA Y EL
CARIBE**

- En operación en Mayo 2007.

- Soporte de Thermopower C.A. desde 1991.
Representante Exclusivo de Babcock & Wilcox,
Diamond Power y de otras Empresas Internacionales.

- Soporte de International Construction c.a. (INCA) desde 1994. Instalación,
Montaje, Reparaciones de equipos de Plantas Industriales.

1. Generadores de electricidad nuevos o rehabilitados.

1.1 Turbogeneradores a Gas disponibles en el mercado de terceros con cortos tiempos de entrega hasta 250 MW por unidad.

Fabricantes: GE, SIEMENS, R.R, PW, otros.

2.2 Moto generadores de electricidad consumiendo diesel, gas natural y HFO-fuel oíl.

Fabricantes: MTU – Detroit Diesel, GPS-Cumming, otros fabricantes internacionales.

2. Calderas - Generadores de Vapor de cualquier fabricante;

Partes de remplazo, tubos, quemadores, ignitores, detectores de llama, cestos de pre-calentadores de aire, cajas de engranajes, analizadores de gases de combustión, juntas de expansión, otros.

3. Turbinas a Gas y Turbinas a Vapor.

Repuestos y partes de remplazo, toberas, alabes, divisores de flujo, filtros de aire y aceite hidráulico, componentes de combustión, componentes de ignición, otros.

Fabricantes: GE, SIEMENS, R.R, otros.

4. Intercambiadores de Calor, Condensadores, Desareadores, Calentadores de Agua, Repuestos.

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5. Ventiladores Industriales

6. Motores Eléctricos

7. Actuadores y Válvulas

8. Bombas

9. Plantas de tratamiento de agua

10. Válvulas en general

11. Paquetes de compresión de Gas Natural

**12. Generadores de electricidad, ahorradores modulares de energía
utilizando energía solar y/o eólica**

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1. Turbinas a gas y Turbinas a vapor.

Repuestos y partes de reemplazo, toberas, alabes, divisores de flujo, filtros de aire y aceite hidráulico, componentes de combustión, componentes de ignición, otros.

Fabricantes: GE, SIEMENS, R.R, otros.

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PARTES PARA TURBINAS A GAS Y TURBINAS A VAPOR

COMPONENTES DE TURBINAS A GAS

A través de nuestras fuentes de suministro confiables y competitivas, contamos con el soporte de uno de los inventarios más grandes a nivel mundial de repuestos para turbinas a gas Frame 5, 6, 7 y 9, al igual que componentes seleccionados Westinghouse. El acceso a un inventario "In-Stock" y a una red de "global sourcing partners" nos permiten responder a sus necesidades a tiempo en cualquier momento.

- Componentes de ductos de gases calientes.
- Servicios de procura.
- Compra de repuestos.
- Programas de intercambios
- Programas de ventas
- Programas de gerencias de inventario

Partes de alta calidad, FRAME 3, FRAME 5, FRAME 6, FRAME 7, FRAME 9 por ejemplo:

- Alabes de 1ra etapa - Hi Tech - Standard
- Alabes de 2da etapa - Fine Tine - Shroud Tip
- Tobera de 1ra etapa - Hi Tech - Standard
- Tobera de 2da etapa - Short Side Wall - Long Side Wall
- Alabes de rotor y estator de compresores
- Bloques térmicos de 1ra etapa
- Bloques térmicos de 2da etapa
- Piezas de transición
- Cestos combustores
- Alabes guía compresores axiales
- Bombas de combustible
- Bombas de alta presión
- Divisores de flujo
- Accesorios Hardware: "Bucket Hardware, Twist Locks, Pins, Keys, Transition Piece Kits"
- General / Miscelaneos: Cojinetes, Deflectores/Sellos, Valvulas/, Otros



- Válvulas Solenoides
- Válvulas Check
- Válvulas de Alivio
- Válvulas de Purga
- Detectores de Llama
- Transformadores de Ignición
- Tarjetas de Control
- Accesorios de acoples
- Acoples de Carga
- Empaques
- Pernos
- Tuercas
- Toberas de combustible
- Partes de combustión
- Tubos cruzallama
- Termopares RTD's

Controles para Turbinas a Gas

- GE Speedtronic series cards
- Westinghouse
- Siemens
- Rolls Entronic
- Speedtronic™ Spares
- Processors Boards
- Q-Line & R-Line Cards
- MMI/DPU Modules
- GHC Kits
- Highway Stations



Contamos con el soporte de uno de los Stocks más grandes en el mundo de tarjetas de control nuevas y reacondicionadas. Todas las tarjetas son totalmente probadas y con una garantía de 18 meses.

Para sus necesidades de Turbinas a Gas y de Turbogeneradores a Vapor nuevos o reacondicionados, también contamos con el soporte de fuentes de suministro confiables y muy competitivas.

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PARTES PARA VÁLVULAS (Principal de parada, de recalentamiento, de desvío, de Interceptor y válvulas de control)

- Ejes, Discos, Asientos
 - "Crosshead Assembly, Crosshead Bushing, Conectores (Linkage)
 - Componentes
 - Juego de sellos de presión
 - Bujes, bridas, tapas de válvulas
 - Tornillos, tuercas, pernos, arandelas, espaciadores
- EMPACADURAS**

- Vapor "Steam Packing"
 - Ejes de leva, incluyendo cojinetes y rodamientos
 - Correderas de engranajes, piñones
 - Servicio de ensamblaje para internos de válvulas
- SELLOS ESTACIONARIOS**

- Convencional
- Anillos de empaque (Packing Rings), anillos laberinto, anillos de glander (Gland Rings),
- Anillos Dummy
- Empacaduras tipo resorte "Packing Springs", llaves de retención, "pins"
- Remaches, tornillos
- Bandas (Spill Strips), deflectores de vapor, Spring Back Seals "J" Strip, "Caulking Strip".
- Resortes (Springs), llaves de retención, tornillos
- Servicios completos de instalación y de montaje
- Campanas de extracción y cubiertas interiores
- Cúñas de soporte, llaves, "Gibbs", anillos de sello, juntas

PARTES DE TURBINAS A GAS Y A VAPOR

COMPONENTES DE TURBINAS A VAPOR



Componentes rotativos de la trayectoria del vapor
"STEAMPATH"

- Alabes de ingeniería inversa (Reverse Engineering)
- Cubiertas, pantallas térmicas, alambres de unión (Tie Wire) llaves de Cruz, pins, roscadores (Reamers)

Bujes

- Pesos para balanceo del rotor, tapones de balanceo, tornillos de ajuste
- Pernos de acoplamiento, tuercas, arandelas, placas de bloqueo, placas y tornillos

Componentes estacionarios de la trayectoria del vapor

- Toberas (Nozzle plates)
- Hardware para cajas de toberas (Nozzle box hardware)
- Llaves, separadores, clavijas, tornillos, placas, Gibbs
- Alambres de bloqueo (Lock wire)
- Hardware para Diafragmas
- Pernos de centrado, clavijas, llaves de junta, barras de soporte, cuñas, resortes, tornillos
- Pernos de Hardware para carcasas de empaque, clavijas, placas de bloqueo

CONCHAS

- Componentes para junta horizontal (Horizontal joint body bound)(pernos pasantes y de toque (Thru & Tap Studs), tuercas

Arandelas

- Bridas de vapor - tornillos, pernos, tuercas, juntas
 - Anillos de juntas o entrada principal de vapor, válvula de venteo, válvula de descarga,
- Vapor de enfriamiento

Tubos

- Bridas de acceso y "hardware

DEFLECTORES DE ACEITE



RTD

- Diafragmas de alivio Atmosférico (aluminio, cobre)
- Pernos, Tornillos, tuercas, arandelas, juntas
- Toberas de "spray" de zona de salida (Exhaust Hood Spray Nozzles)

RODAMIENTOS

- Cojinete
- manga, bolas, rodillo
- Cojinetes de rodamientos
- Rodamientos del eje de leva de las válvulas de control, cojinetes DU

Placas de empuje

CONTROLES

- Servo Válvulas, válvulas solenoides
- Interruptores de limite (Limit switch), interruptores de presión
- Motores

Sensores de Velocidad

Alambres, cables

Termocuplas, RTD

PARTES DEL "FRONT STANDARD"

Cilindros hidráulicos

Anillos de pistón

Ruedas de engranaje (Worm wheels)

Sellos de bombas de aceite

AUXILIARES

Intercambiadores de calor, enfriadores

Juntas, O-Rings

Piezas para Unidad de Potencia Hidráulica

Filtros, cartuchos de filtro, "Klosures", Reguladores de filtro, "strainers"



También podemos ayudarle con cualquier otra necesidad de equipos rotativos en sus instalaciones, tales como: bombas, ventiladores, compresores, motores.

Ejemplo 1.1: Solicitud Componentes de Turbinas a Gas

Ejemplo típico

“ADQUISICIÓN DE REPUESTOS MECÁNICOS PARA TURBINAS A GAS DEL

RENLÓN No. 1: ALABE 2da ETAPA MOVIL TURBINA

ALABES 2DA ETAPA MOVIL (BUCKET SECOND STAGE) TURBINA F5000
ALABES CON MODIFICACIÓN ESPECIFICADA EN EL TILL 1125-3 (NUEVA GENERACIÓN)

INCLUYE HERRAMIENTAS DE MONTAJE (PIN SEAL/LOCK-TWIST);
CADA JUEGO CONSISTE DE 02 PIEZAS

Se aclara que entre otros, los repuestos que se mencionan a continuación cumplen con lo solicitado en estas especificaciones técnicas:

MARCA: GENERAL ELECTRIC
N/P: 314B7159G013

Cantidad Solicitada: 1 juego

RENLÓN No. 2: BLOQUE TÉRMICO 2DA ETAPA HIGH TECH

BLOQUE TÉRMICO DE SEGUNDA ETAPA (SHROUD SEGMENT 2 STG),
DWG.Nº. 339A9971G002,
PIN DOWEL 158A5457P14 & PIPE PLUG 286A6290P2 (ASSY HARDWARE).
USADO EN TURBINAS A GAS HI-TECH,

Cantidad Solicitada: 1 juego

RENLÓN No. 3: PIEZA TRANSICIÓN HIGH TECH

SET DE PIEZA DE TRANSICIÓN (TRANSITION PIECE ASSY COMB.)

INCLUYE ACCESORIOS PARA MONTAJE.

Se aclara que entre otros, los repuestos que se mencionan a continuación cumplen con lo solicitado en estas especificaciones técnicas:

MARCA: GENERAL ELECTRIC
DWG: 943E0237G003.

Cantidad Solicitada: 1 juego

RENLÓN No. 4: TOBERA 2DA ETAPA HIGH TECH

TOBERA DE SEGUNDA ETAPA (NOZZLE ARR, TURBINE 2 STG),

USADO EN TURBINAS A GAS HI-TECH,

Se aclara que entre otros, los repuestos que se mencionan a continuación cumplen con lo solicitado en estas especificaciones técnicas:

MARCA: GENERAL ELECTRIC.
DWG.Nº. 948E716G001,

Cantidad Solicitada: 1 pieza

RENLÓN No. 5: COMPRESOR AIRE ATOMIZADO

COMPRESOR AIRE ATOMIZADO (COMPRESOR ATOMIZING AIR)

USADO EN TURBINA A GAS GENERAL ELECTRIC

Se aclara que entre otros, los repuestos que se mencionan a continuación cumplen con lo solicitado en estas especificaciones técnicas:

MARCA: GENERAL ELECTRIC.
DWG: 158A7697P1.

Cantidad Solicitada: 1 pieza

RENLÓN No. 6: BOMBA PRINCIPAL DE GASOIL

BOMBA PRINCIPAL DE GASOIL F5 (FUEL OIL PUMP ASSEMBLY)

Se aclara que entre otros, los repuestos que se mencionan a continuación cumplen con lo solicitado en estas especificaciones técnicas:

MARCA: GENERAL ELECTRIC.
N/P: 235A5998P001
FIGURA: 2951
TIPO: 3.

Cantidad Solicitada: 3 pieza

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Ejemplo 1.2: Solicitud de Repuestos Controles para Turbina a Gas

- **Identificación**
- Cliente
- Número de Referencia Identificación del cliente.
- Título de la Solicitud
- Plazo de la Oferta

Identificación del Equipo, Parte Repuesto a solicitar

- Ítem No.
- Descripción
- Para ser Usado en:
- Identificación del Ítem
- Cantidad:
- Unidades de Medidas:
- Fabricante
- Numero de Parte
- Modelo Serial
- Dibujo No.

Información Adicional Importante

- Otras Empresas Participantes
- Monto Presupuestado si esta disponible

Solicitud de Cotización

Núm. Solicitud/ Fecha
1500093679 / 28.08.2008

Plazo de la oferta
02.09.2008

Pos.	Material Cód-Ref/Oferta	Unidad	Denominación Plazo-oferta	Fecha-entrega
00010	707345	3 Piezas	CABLE PUENTE SPEEDT.MK II	Día 30.12.2008
		Norma de envío Caja de Carton.		
	CABLE CONTROL (PUENTE) USADO EN SISTEMA DE CONTROL SPEEDTRONIC, TURBINA A GAS G.E.			
	<u>REFERENCIA:</u> <u>GE P/N. 219A401504.</u>			
00020	707638	2 Piezas	TARJ ELECT. SPEEDT MK II # 1C360088KCI	Día 30.09.2008
		Norma de envío Caja de Carton.		

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Ejemplo 1.3: Solicitud de Repuestos de Turbina a Vapor

ADQUISICIÓN DE REPUESTOS MECÁNICOS

RENGLÓN No. 1:

ALABE 1ERA ETAPA ROTOR TURBINA:

ALABES 1era ETAPA ROTOR TURBINA DE ALTA PRESIÓN

CARACTERÍSTICAS DE LA TURBINA:

VELOCIDAD: 3600 RPM
PRESIÓN DE OPERACIÓN: 1800 PSI
TEMPERATURA: 950°C
NÚMERO DE ETAPAS: 20
CANTIDAD DE ALABES: 68.

DEBE INCLUIR LAS BANDAS, EL BLOQUE DE CIERRE, LOS PINES DE ASE
TODO LO REQUERIDO PARA SU MONTAJE.

USADO TURBINA ALTA PRESIÓN

Cantidad Solicitada: 1 Jgo

Se aclara que entre otros los repuestos que se mencionan a continuación se adaptan a las especificaciones técnicas requeridas:

REFERENCIA:

MARCA DE LA TURBINA: GENERAL ELECTRIC.
SERIALES:
N/P DE ALABES:

RENGLÓN No. 2:

COJINETE EMPUJE TUBINA VAPOR:

USADO EN TURBINA A VAPOR DE 87 MW

CARACTERÍSTICAS DE LA TURBINA:

CAPACIDAD: 87.001 KW
VELOCIDAD: 3600 RPM
NÚMERO DE ETAPAS: 18
PRESIÓN OPERACIÓN: 1250 PSI.

Cantidad Solicitada: 1 Pza

Se aclara que entre otros los repuestos que se mencionan a continuación se adaptan a las especificaciones técnicas requeridas:

REFERENCIA:

MARCA DE LA TURBINA: GENERAL ELECTRIC.
SERIAL
THRUST BRG N/P 351C323-01

RENGLÓN No. 3:

TAPON VÁLVULA REGULADORA 1 y 2 TURBINA:

TAPÓN (COMPUERTA) DE LAS VÁLVULAS DE REGULACIÓN N° 1 Y 2 DE LAS TURBINAS

Se aclara que entre otros los repuestos que se mencionan a continuación se adaptan a las especificaciones técnicas requeridas:

Cantidad Solicitada: 2 Pzas

REFERENCIA:

MARCA DE LA TURBINA: GENERAL ELECTRIC.
N/P DEL TAPÓN DE LA VÁLVULA:
SERIALES DE LAS TURBINAS:

RENGLÓN No. 4:

TAPON VÁLVULA REGULADORA 3 TURBINA:

TAPÓN (COMPUERTA) DE LA VÁLVULA DE REGULACIÓN N° 3 DE LAS TURBINAS

Se aclara que entre otros los repuestos que se mencionan a continuación se adaptan a las especificaciones técnicas requeridas:

Cantidad Solicitada: 1 Pza

REFERENCIA:

MARCA DE LA TURBINA: GENERAL ELECTRIC.
N/P DE LA VÁLVULA: 3011J55-001
SERIALES DE LAS TURBINAS: 197831, 197832 Y 197846.

RENGLÓN No. 5:

TAPON VÁLVULA REGULADORA 4 y 6 TURBINA:

TAPÓN (COMPUERTA) DE LAS VÁLVULAS DE REGULACIÓN N° 4

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Ejemplo 1.3: Solicitud de Repuestos de Turbina a Vapor

Se aclara que entre otros los repuestos que se mencionan a continuación se adaptan a las especificaciones técnicas requeridas:

REFERENCIA:
MARCA DE LA TURBINA: GENERAL ELECTRIC
N/P DE LA VÁLVULA:
SERIALES DE LAS TURBINAS:

REGLÓN No. 6:
TAPON VÁLVULA REGULADORA 5 TURBINA:

VÁLVULA DE REGULACIÓN (COMPUERTA) CORRESPONDIENTE A LA VÁLVULA

Cantidad Solicitada: 1 Pza

Se aclara que entre otros los repuestos que se mencionan a continuación se adaptan a las especificaciones técnicas requeridas:

REFERENCIA:
MARCA DE LA TURBINA: GENERAL ELECTRIC
N/P DE LA VÁLVULA:
SERIALES DE LAS TURBINAS:

REGLÓN No. 7:
COJINETE ARBOL LEVA VÁLVULA CONTROL VAPOR:

COJINETE DE APOYO.
USADO EN EL ARBOL DE LEVA VÁLVULA DE CONTROL DE VAPOR MODELO 5

Cantidad Solicitada: 4 Pzas

Se aclara que entre otros los repuestos que se mencionan a continuación se adaptan a las especificaciones técnicas requeridas:

REFERENCIA:
MARCA: GENERAL ELECTRIC
N/P:

REGLÓN No. 8:
PASADOR VÁLVULA REGULACIÓN VAPOR P4:

USADO EN VALVULAS DE REGULACION DE VAPOR EN TURBINAS A VAPOR DE 162 MW

Cantidad Solicitada: 2 Pzas

Se aclara que entre otros los repuestos que se mencionan a continuación se adaptan a las especificaciones técnicas requeridas:

REFERENCIA:
MARCA DE LA TURBINA: GENERAL ELECTRIC
SERIALES:
(PIN).P/N DEL PASADOR:

REGLÓN No. 9:
RESORTE VÁLVULA VAPOR PRINCIPAL TURBINA:

RESORTE DE LA VÁLVULA (VALVE SPRING)
PARA LA VÁLVULA VAPOR PRINCIPAL EN TURBINA

Cantidad Solicitada: 6 Pzas

Se aclara que entre otros los repuestos que se mencionan a continuación se adaptan a las especificaciones técnicas requeridas:

REFERENCIA:
MARCA: GENERAL ELECTRIC
N/P:

REGLÓN No. 10:
EJE ARBOL LEVA VÁLVULA INFERIOR REGULACIÓN VAPOR TURBINA:

EJE DEL ARBOL DE LEVA DE VÁLVULAS INFERIOR DE REGULACIÓN VAPOR A LA TURBINA

USADO EN TURBINA SERIAL TURBINA
CAPACIDAD 162: Mw
PRESIÓN DE OPERACIÓN: 1800 PSI
TEMPERATURA DE OPERACIÓN: 540 °C

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2. Calderas - Generadores de Vapor de cualquier fabricante



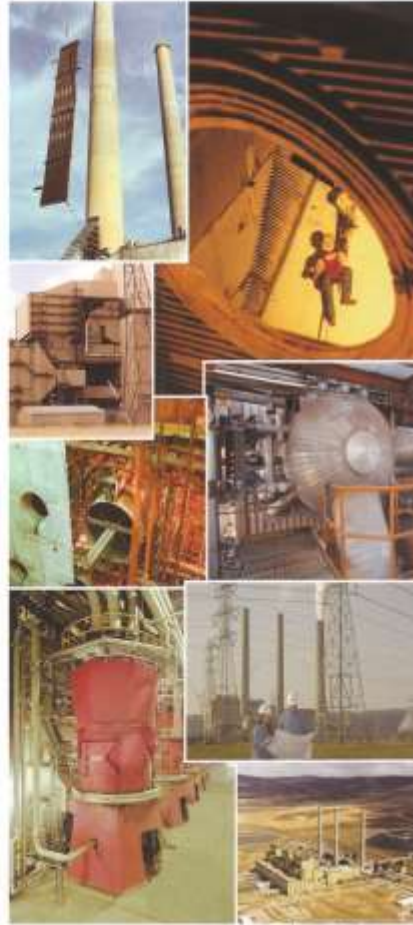
Aftermarket Boiler Products and Services

Pressure Parts

- Attemperators
- Boiler start-up bypass systems
- Bubbling fluidized bed boiler conversions
- Cyclone furnace replacement
- Staggered stud upgrades, silicon-carbide wear blocks
- Division walls and wing walls
- Drum internals
- Economizer sections (including fitted) and headers
- Marine boiler upgrades and replacement parts
- Mix headers and sections for supercritical boiler units
- Package boilers - FM and retube kits
- Pipe tees - forged and welded, large diameter
- Pressure parts designed and fabricated with high temperature, high-performance alloy materials
- Radiant superheater sections and headers
- Replacement parts
- Slog tap openings and nozzles
- Single-load ribbed tubing
- Smelt spout openings
- Steam lines - high pressure, large diameter
- Steam drums, pressure vessels and tanks
- Superheater sections and headers
- Tube wall panels and/or partial panels

Non-pressure Parts

- Air heaters - tubular and regenerative
- Ash handling systems
- Asymmetric Wearcoat® and low profile roll wheel pulverizer tires
- Baghouse or fabric filter systems



(Continued on reverse side)

- Balanced draft conversions
- Burners - low NO_x (wall and corner-fired)
- Cera-VAM® ceramic products
- Cool pipes and valves - steel and/or ceramic lined
- Control system upgrades
- Cyclone reburn equipment
- Doors - access and observation
- Dry scrubber systems
- Ductwork
- Expansion joints, flues and ducts
- Flue gas desulfurization systems and upgrades
- Furnace buckstay and steel truss systems
- GenClad® tube protection
- Igniters - Fossil Power Systems (FPS) for gas and oil; wall- and corner-fired
- Lagrate pre-dry systems
- LM2100® chemical recovery boiler burners
- Ports - NO_x/overfire air (OFA)
- Precipitators
- PrecisionJet® OFA for pulp and paper industry
- Pulverizers - EL and roll wheel type, including ceramic components
- Pulverized coal injection systems
- Rebuilds - Pulverizer roll wheels and gearboxes
- Rebuilds - EL yokes, top-bearing plates, air seal housings
- Rotating thrusts for B&W Roll

- Wheel™ and MPS-type pulverizers (B&W and non-B&W mills)
- Scanners - FPS "smart" scanners
- Selective catalytic reduction (SCR) systems
- Smelt spouts
- Scootblower upgrades
- Split ring castings

Other Boiler-related Services

- Assured Stock Program® inventory management system
- Capacity assessment, upgrade and uprate studies
- Circulation analysis
- Combination computational flow modeling
- Construction and maintenance services
- Corrosion analysis
- Cycling analysis
- Engineering studies
- Field engineering services
- Fuel switch retrofits
- Life assessment and unit performance studies
- MillCare® pulverizer services
- Project management - complete, one-point contact
- Replacement parts and components - in-kind and upgrades
- Repowering for utility boiler applications
- Start-up services



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FP-402 3/00/091

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Partes de remplazo, tubos, quemadores, ignitores, detectores de llama, cestos de precalentadores de aire, cajas de engranajes, analizadores de gases de combustión, juntas de expansión, otros.

Para Calderas **Babcock & Wilcox** por favor contactar a:
THERMOPOWER C.A.
Av. 3B con calle 72 # 72-66
Maracaibo-Venezuela
Telf.: 261 7923650 Fax:7923670
E-mail: quinterowst@aol.com

TENSOL Equipment Sourcing and Supply Solution

TECHNICAL & ENGINEERING SOLUTION INC.

743 Shotgun Rd. Sunrise, FL. 33326. Phone: (954) 473-9955 e-mail: tensolinc@gmail.com www.tensolinc.com

2. Calderas - Generadores de Vapor de cualquier fabricante



The Babcock & Wilcox Company
Generating Powerful Solutions™

Complete Source for Boiler Tubing

As part of our continued commitment to the boiler and power plant aftermarket, The Babcock & Wilcox Company (B&W) owns and operates a 30,000 square foot tube storage facility in Copley, Ohio. Here, our extensive tubing supply capabilities translate to lower costs, reduced lead times and quality boiler tubes for our customers. Enhancing the service offerings, B&W's modern facility also includes tube bending capabilities.

B&W carries an expanded tube inventory that includes a wide range of materials, grades, sizes and quantities. All tubing meets the highest quality standards that are synonymous with the Babcock & Wilcox

name. Tubes are stored indoors on racks in a temperature-controlled environment. A state-of-the-art handling system facilitates on-time shipment and delivery so customers get their tubes when they need them.

B&W's dedicated team manages the inventory, performs custom cuts, bends, marks the tubes and promptly ships orders anywhere in the world.

Call your regional sales representative or contact our tube specialists by calling 1-800-354-4400 and pressing option number "6." Our friendly, knowledgeable tube specialists can match your inquiry to our inventory, or even locate tubes from other key strategic suppliers.

Backed by B&W's engineering know-how, our replacement parts experts can also provide approved tube material substitutions so that you get the tubing needed to fit your boiler requirements.

We have also made it easier for you to search for tubing and view current inventory at our e-business site. Visit www.babcock.com and click on "Customer Log-In" to see the benefits. By registering on our site, you can place orders, check quote status, request documentation, access order history, and much more.

Our goals are two-fold: to offer customers timely deliveries at competitive prices while upholding



B&W's stock tube inventory includes a wide range of materials, grades and sizes. A state-of-the-art handling system means that our customers receive quality boiler tubes in less time.

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(Continued on reverse side)

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Trusted for experience. Preferred for performance.

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Keyword

SEARCH

Products & Services



FIND A LOCATION



Boiler Cleaning Equipment

Diamond Power is a global leader in boiler cleaning equipment, parts and upgrades. We design, manufacture and support steam and air sootblowers as well as water cleaning technology.



Intelligent Cleaning & Controls

As the technological leader in sootblower controls and intelligent cleaning systems, we offer unmatched experience in performance improvement through boiler cleaning.



Service

Diamond Power is committed to delivering prompt and knowledgeable site services ranging from turnkey project management to diagnostic support.



Ash & Material Handling

Allen-Sherman-Hoff provides a variety of ash and material handling solutions, from completely dry bottom ash handling to fly-ash and petroleum coke processing.



Recovery Boiler Products

As the recognized leader in low pressure boiler cleaning and unique rodding solutions, our recovery boiler products and services are proven to save steam and conserve energy.



Cameras & Diagnostic Equipment

Ranging from security cameras to advanced high-temperature diagnostic devices, we have a unique and robust portfolio of vision system solutions.

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2. Calderas - Generadores de Vapor de cualquier fabricante



Benefits

- ✓ Superior Cleaning Effectiveness and Reduced Boiler Tube Erosion
- ✓ Reliable Low Maintenance Design with Minimal Lubrication Points
- ✓ Unparalleled Maintenance Access with Low Side Height and No Bottom Strap
- ✓ Parts Modularity and Interchangeability Diamond Power® (IC-525 and IC-543 Models)
- ✓ Proven to have Industry's Best ROI and Longest Service Life
- ✓ Zero Adjustment for Indexing with No High Wear / High Load Points or Reverse
- ✓ Safety Standards: No External Moving Parts or Wiring, No Chains or Push Points
- ✓ Meets OSHA / NFPA Standards for Arc Flash Protection

GASTEMP® XR

extended range optical pyrometer

The GASTEMP® XR optical pyrometer from Diamond Electronics uses a patented wavelength to directly measure actual furnace gas temperature — including minute changes in flue gas temperatures. The GASTEMP® XR can be used from boiler start-up to full-load operation.

The GASTEMP® XR measures the average gas temperature within its field-of-view, and is independent of gas and fly ash emissivities, as well as cold walls. That means you'll get tremendous accuracy, even with blended coals or switching to other fuels. Plus the unique wavelength of the GASTEMP® XR optical pyrometer provides the proper measurement depth across the width of the boiler.

Benefits

Improved efficiency, reduced emissions

Measurement of gas temperatures is a critical parameter in monitoring furnace slagging, convection pass fouling or pluggage, and NOx emissions. The GASTEMP® XR optical pyrometer allows you to monitor elevated temperatures and detect the early indications of pluggage for real-time control of boiler efficiency and NOx emissions.

Suitable for fuel switches

The GASTEMP® XR is the only optical pyrometer that accurately

measures eastern, western or blended coals — without re-calibration. And it remains fully functional throughout transition to (or from) natural gas and oil firing.

Simple, anywhere installation

The GASTEMP® XR optical pyrometer is shipped as a set of sub-assemblies that are ready for on-site final assembly and start-up. It's easily installed at any location from the furnace exit through the convection pass, including standard furnace observation ports or other wall penetrations.

Dual-use device

Because the GASTEMP® XR optical pyrometer is so reliable, durable and portable, it can be used as a field diagnostic tool or as a permanent installation. For diagnostics, use it as a stand-alone instrument or with data acquisition equipment to record data. Begin immediate data collection usually within 15 to 30 minutes of installation. Or, use it as a permanent installation (alone or interfaced with your control system) for automatic monitoring and control.

The GASTEMP® XR is specifically precalibrated to the boiler width to measure fireside gas temperature. It provides absolute temperature data rather than just the direction of temperature change.
U.S. Patent 6,733,173 B1



Features

- Rugged to withstand the fireside environment.
- Small, lightweight design for easy installation and convenient portability.
- Built-in readout display.
- Provides both analog and visual output signals.

Availability

Available as an installed or portable device for all pulverized coal, fuel oil and natural gas utility boilers. The GASTEMP® XR directly replaces older, retractable, lance-type temperature probes. For more information on this device or for other boiler cleaning and performance solutions, contact your Diamond Power International, Inc. representative or call Diamond Electronics at (800) 700-2791.

Diamond Electronics
a Division of Diamond Power International, Inc.

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3. Generadores de electricidad nuevos o rehabilitados.

3.1 Turbogeneradores a Gas disponibles por terceros en el Mercado

con corto tiempo de entrega hasta 250 MW por unidad.

Fabricantes: GE, SIEMENS, R.R, PW, otros.

3.2 Moto generadores de electricidad a Diesel, Gas Natural y HFO-fuel oil.

Fabricantes: MTU – Detroit Diesel, GPS - Cummins, otros fabricantes internacionales, desde 50 Kw - 4 MW por unidad.

Conversión de Generadores de diesel a gas natural.

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Equipos y Repuestos

Ejemplo:

SANITARY HEAT EXCHANGERS

4. Intercambiadores de Calor,
Condensadores,
Desareadores,
Calentadores de Agua de baja y
alta presión,
Repuestos.



Industrial Mfg. Co. brings over 40 years of experience to the design and manufacture of custom heat transfer equipment for the pharmaceutical and biotech industries.

Our staff of experienced professionals will work with each unique application to guarantee that our customers receive the precise equipment for the environment.

Our fully equipped, ASME code approved fabrication facility is supervised and staffed by dedicated craftsmen who execute the customized layouts developed by our in-house engineering staff.

Design and fabrication can range from a single pressure vessel to the more complex skid-mounted process systems.

The quality assurance department is diligent in its task of monitoring all aspects of the organization to ensure that the standards established by our ISO 9001 program, as well as those required by ASME, TEMA and HTRI, are maintained.

PRODUCTS

Custom Shell and Tube Heat Exchangers
Double Tubesheet Designed Exchangers
Process Skid Fabrications
Pressure Vessels

SERVICES

Engineering Design
After Market Parts
In-House Testing
Polishing

81 Somerset Place • Clifton, New Jersey 07012
Tel: 973-779-3970 • Fax: 973-779-7783

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Equipos y Repuestos

4. Intercambiadores de Calor,
Condensadores,
Desareadores,
Calentadores de Agua de baja y
alta presión,
Repuestos.

Ejemplo: Solicitud de Intercambiador de Calor

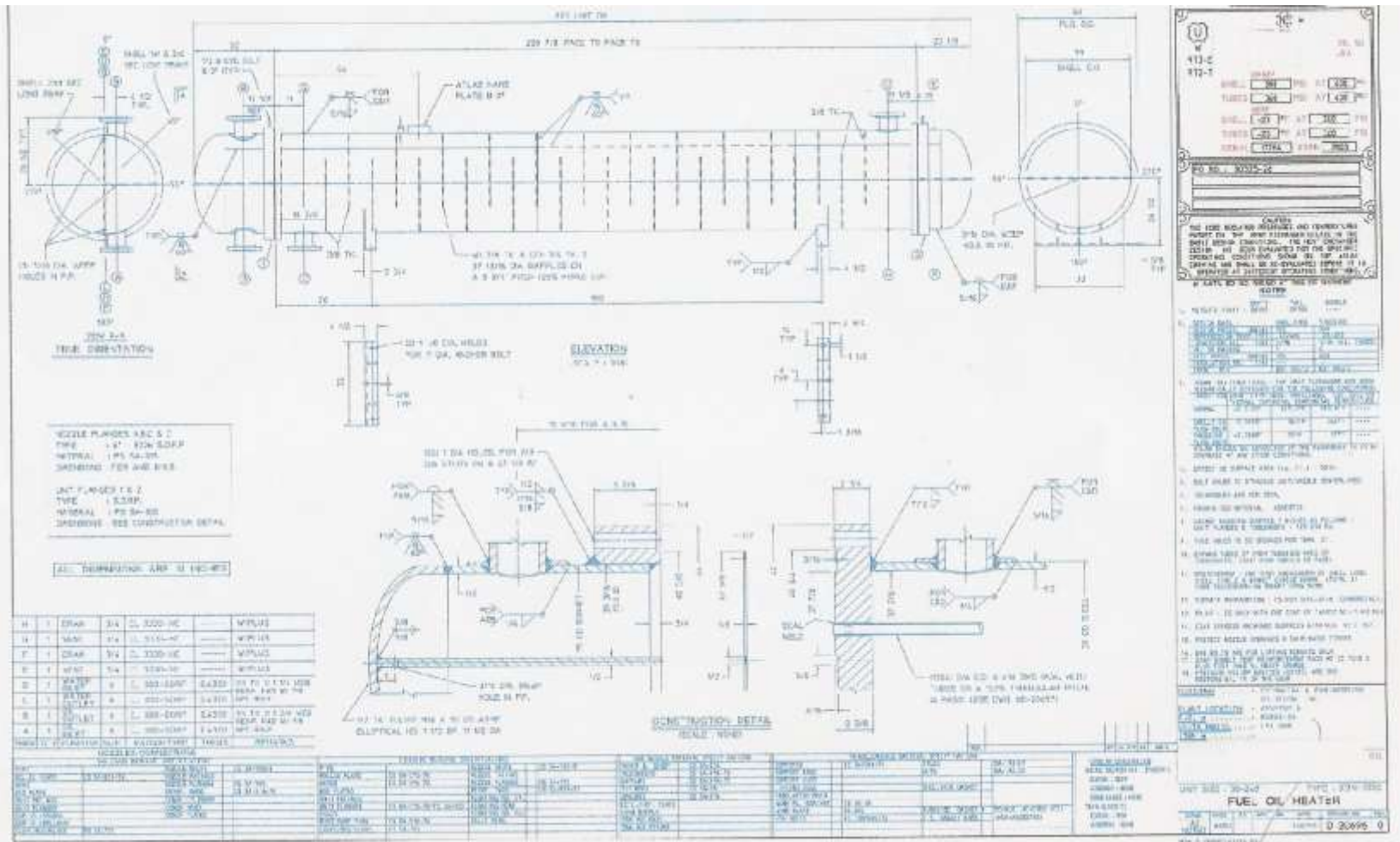
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4. Solicitud de Intercambiador de Calor



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Equipos y Repuestos

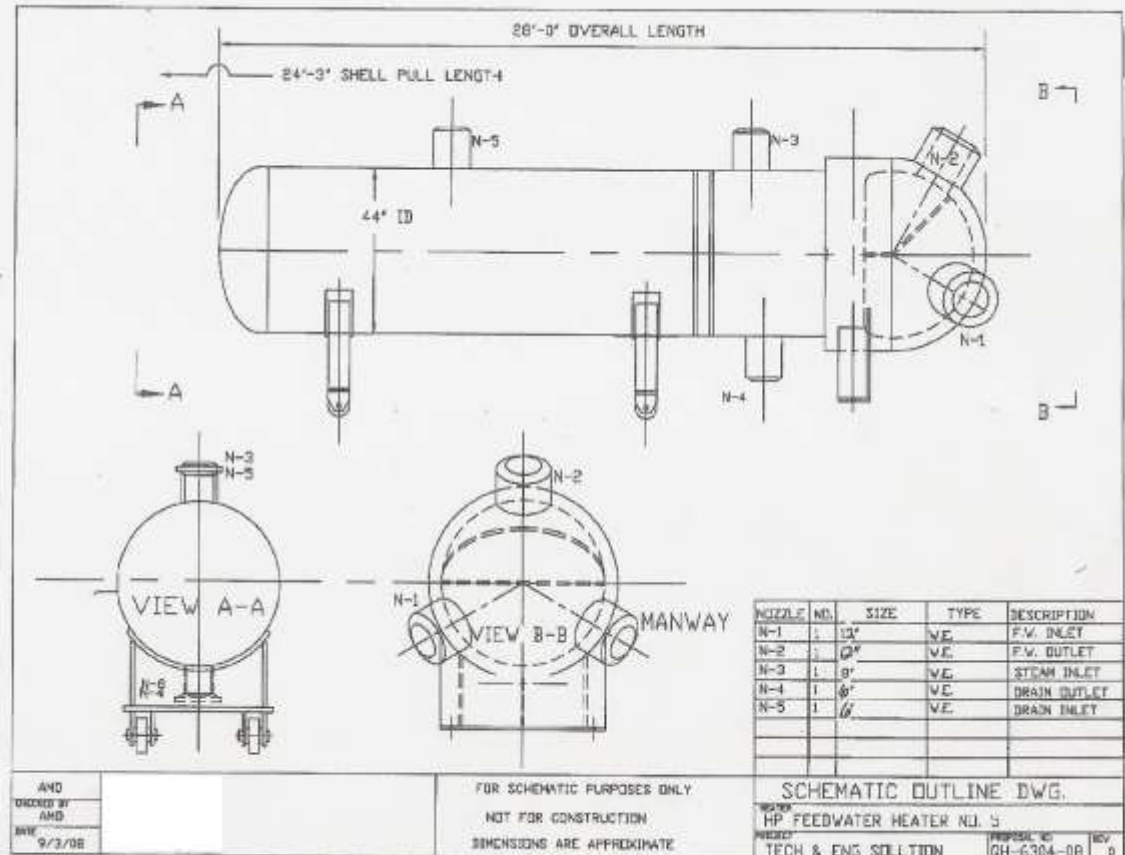
Ejemplo: Calentadores de Agua

MATERIALS TO BE USED IN THE CONSTRUCTION OF PROPOSED FEEDWATER HEATERS

ITEM	LOW PRESSURE	HIGH PRESSURE
Channel	SA-516-70	SA-516-70, SA-350-LF2
Channel Cover LF2	SA-516-70 or SA-105	SA-516-70, SA-105 or SA-350-LF2
Tubesheet	SA-516-70	SA-516-70 or SA-350-LF2
Shell & Shell Cover	SA-516-70	SA-516-70
Skirt	SA-516-70	SA-516-70
Alloy Skirt		SA-387, Grade 11 or 12, Class 2
Shrouds (3/8" thickness)		SA-285-B, SA-285-C, SA-516-70, SA-36 or equal
Baffles (3/8" C DC) (5/8" COND)		SA-285-B, SA-285-C, SA-516-70, SA-36 or equal
Support Plates (5/8" thickness)		SA-285-B, SA-285-C, SA-516-70, SA-36 or equal
Impingement Plate (1/4" thickness)		SA-240-304

ATTACHMENTS

Lugs & Supports		SA-516-70 or equal
Tie Rods	SA-36 or equal	SA-36 or equal
Spacers	SA-214 or equal	SA-214 or equal



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Equipos y Repuestos

Calentadores de Agua

FRESHWATER HEATER SPECIFICATION SHEET

CUSTOMER: TECH & ENG SOLUTION		DATE: 03/10/2008	
ADDRESS:		CUST. DRG. NO:	
PLANT LOCATION: COLOMBIA		CUSTOMER ORDER NO:	
		PROP. NO.: CM-8364-08	
		JOB NO:	
SERVICE OF UNIT: HIGH PRESSURE HEATER		ITEM: SP-5	
SIZE: 44-274 TYPE: U-TUBE		ENGR: AND	
SURFACE PER SHELL (SQ. FT) EFFECTIVE: 3,907		GROSS: 4,015	
NO. OF SHELLS PER UNIT: 1		NO. OF UNITS: 1 POSITION: HORIZONTAL	
PERFORMANCE OF ONE SHELL			
		SHELL SIDE	
FLUID CIRCULATED		STEAM	
TOTAL FLUID ENTERING LB/HR		48,698	
TOTAL FLUID LEAVING LB/HR		1422.109	
INLET ENTHALPY BTU/LB		378.7	
OUTLET ENTHALPY BTU/LB		326.0	
INLET TEMPERATURE °F		793.3 (391.7 SAT)	
OUTLET TEMPERATURE °F		354.0	
OPERATING PRESSURE PSIA		224.73	
NUMBER OF PASSES		COND, DRN & SUBCL	
VELOCITY FT/SEC		5.6 @ SG =1	
PRESSURE DROP PSI		DESIGN 1.5 SHELL 1.2 TUBE 5.0	
		HEAT TRANSFER RATE BTU/HR	
DESUPERHEATING 8,808,000		438	
CONDENSING 43,716,000		19.3	
DRUM COOLING 5,762,000		29.5	
		433	
		10.1	
CONSTRUCTION--EACH SHELL			
		SHELLSIDE	
DESIGN PRESSURE PSIG		256	
TEST PRESSURE PSIG		CODE	
DESIGN TEMPERATURE °F		SHELL 408	
MINIMUM DESIGN METAL TEMP. (°F)		SHELLSIDE 60	
TUBES SA-556-C2		NO. 44	
SHELL STEEL		IP: 44	
SHELL COVER		STEEL-WELDED TO SHELL	
CHANNEL (BR)		STEEL	
TUBE SHEET		STEEL	
DIPSTAY PLATES		STEEL	
BROODER-DEB		STEEL	
TYPE JOINTS-SHELLSIDE		WELDED	
GASKETS-SHELL		CHANNEL	
CONNECTIONS: STEAM INLET		8" W.E.	
DRAIN OUTLET		6" W.E.	
FEEDWATER INLET		12" W.E.	
CODE REQUIREMENTS		ASME 2007 SECTION VIII, DIVISION 1	
WEIGHTS (LB) SHELL AND BUNDLE		SHELL	
SHELL SAFETY VALVE		BY YUMA	
SHELL GAUGE GLASS		BY PURCHASER	
REMARKS: Tubes Welded and Rolled into Tubesheet.			
Shell Bolter Supports Provided			
* 3 Rows .061 Min Stainless Steel Inserts in Tube Inlet Ends			

CUSTOMER: TECH & ENG SOLUTION		DATE: 03/10/2008	
ADDRESS:		CUST. DRG. NO:	
PLANT LOCATION: COLOMBIA		CUSTOMER ORDER NO:	
		PROP. NO.: QM-6304-08	
		JOB NO:	
SERVICE OF UNIT: HIGH PRESSURE HEATER		ITEM: HP-6	
SIZE: 44-307 TYPE: U-TUBE		ENGR: AND	
SURFACE PER SHELL (SQ. FT) EFFECTIVE: 4,657		GROSS: 4,981	
NO. OF SHELLS PER UNIT: 1		NO. OF UNITS: 1 POSITION: HORIZONTAL	
PERFORMANCE OF ONE SHELL			
		SHELL SIDE	TUBE SIDE
FLUID CIRCULATED		STEAM	FEEDWATER
TOTAL FLUID ENTERING LB/HR		99,137	1,175,880
INLET ENTHALPY BTU/LB		1340.86	368.7
OUTLET ENTHALPY BTU/LB		378.8	449.3
INLET TEMPERATURE °F		669.8 (446.0 SAT)	391.5
OUTLET TEMPERATURE °F		401.8	446.0
OPERATING PRESSURE PSIA		434.97	
NUMBER OF PASSES		COND, DRN & SUBCL	2
VELOCITY FT/SEC			5.1 @ SG =1
PRESSURE DROP PSI		DESIGN 3.8	SHELL 0.4 TUBE 6.7
		HEAT TRANSFER RATE BTU/HR	SAFETY FACTOR
DESUPERHEATING 8,390,000		800	109.5
CONDENSING 77,676,000		3,702	26.5
DRUM COOLING 6,547,000		555	35.4
			412
			15.0
CONSTRUCTION--EACH SHELL			
		SHELLSIDE	TUBESIDE
DESIGN PRESSURE PSIG		256	290.7
TEST PRESSURE PSIG		CODE	CODE
DESIGN TEMPERATURE °F		SHELL 408	EXTN 824
MINIMUM DESIGN METAL TEMP. (°F)		SHELLSIDE 60	TUBESIDE 60
TUBES SA-556-C2		NO. 44	OD 3/4" .056" WLG
SHELL STEEL		IP: 44	TUBE PITCH: 31/32" TRIANGULAR
SHELL COVER		STEEL-WELDED TO SHELL	SHELL SKIRT
CHANNEL (BR)		STEEL	CHANNEL COVER
TUBE SHEET		STEEL	IMPINGEMENT PLATE
DIPSTAY PLATES		STEEL	ZONE RAFFLES
BROODER-DEB		STEEL	SUBCOOLER
TYPE JOINTS-SHELLSIDE		WELDED	TUBE SIDE
GASKETS-SHELL		CHANNEL	W/ MANWAY
CONNECTIONS: STEAM INLET		8" W.E.	DRAIN INLET
DRAIN OUTLET		6" W.E.	EMERGENCY DRN
FEEDWATER INLET		12" W.E.	OUTLET
CODE REQUIREMENTS		ASME 2007 SECTION VIII, DIVISION 1	
WEIGHTS (LBS) SHELL AND BUNDLE		SHELL	FULL OF WATER
SHELL SAFETY VALVE		BY YUMA	TUBE SIDE RELIEF VALVE
SHELL GAUGE GLASS		BY PURCHASER	
REMARKS: Tubes Welded and Rolled into Tubesheet.			
Shell Bolter Supports Provided			
* 3 Rows .061 Min Stainless Steel Inserts in Tube Inlet Ends			

TENSOL Equipment Sourcing and Supply Solution

TECHNICAL & ENGINEERING SOLUTION INC.

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Equipos y Repuestos

Ejemplo: Condensador

Dear

Sales Manager

Could you be able to send us a quote for condenser tubes with material Aluminum Bronze?

The specifications are the followings:

Tubes: 25.4 * 1.245 mm
Quantity: 4,900
Exterior diameter: 25.4 mm
Wall thickness: 1.245 mm
Length: 8,870 mm
Material: C68717-0 (Aluminum Bronze)
Tolerance margin in length: 0 to 3 mm

If you have any question feel free to contact us.

Thank you,

Best Regards

Cara Monies
Technical & Engineering Solution Inc.
1950-1 North Commerce Parkway
Weston, FL 33326
Phone: (954)-515-0155
Fax: (954)-515-0119

Technical & Engineering Solution Inc.

1950-1 North Commerce Parkway
Global Commerce Center
Weston, FL 33326
tensolinc@bellsouth.net

Quotation

Date	Quote #
2/26/2008	80259

Name / Address	Ship To
	Ground Logistics & Transportation Inc. 9500 N.W. 108th Avenue Miami, Florida 33178 USA Attn: Jose De la Roche

Terms	Incoterms	Lead Time
PAY IN ADVANCE	CFR FL. Port	12-14 Weeks

Item	Description	Qty	Unit Price (US \$)	Total (US \$)
Condenser Tubes	Seamless Aluminum Bronze Tubes conforming to ASTM Sec. II B-111 alloy UNS No. C 68700 year 2006 in temper Oxidized annealed (O61) condition, fully Eddy Current Tested as per ASTM E 343 & Hydrostatic tested. Dimensional tolerances according to ASTM B 111. Outer Diameter 25.4 mm Wall Thickness 1.245 mm Avg. Wall Length: 8870 mm 4900 tubes 34245 Kgs. approx. Our metal value is based on LME Cash Settlement for copper & Zinc in the alloy proportion of 77.33 as on 22-02-2008. We shall provide end caps at both ends of the tubes and the tubes shall be packed in suit worthy wooden boxes. We shall do the necessary marking on the tubes and box as per your requirement. C68717 IS THE SAME AS C68700 IN ASTM, JIS Standard says the material code is C68717. Validity of the quote: Until March 25, 2008	4,900	83.63	409,787.00
CFR FLORIDA MAIN PORT, PAY IN ADVANCE 30% WITH THE PO AND THE BALANCE BEFORE DELIVERY			Total (US \$)	5409,787.00

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Equipos y Repuestos

5. Ventiladores Industriales



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Equipos y repuestos

6. Motores Eléctricos (Cualquier tamaño y fabricante)

Commitment to Quality.

Reliability, ruggedness, and easy maintenance.

Electric Motors are designed and manufactured to fulfill particular requirements in a wide variety of applications for chemical, petrochemical, pulp and paper industries, steel mills, material handling equipment, mining, water & sewage and energy.

In a business predicated to excellence, this is confirmed by the achievement of ISO 9001—Quality System Certificate Issued in 1992 and the implementation of the 6 sigma program through all the organic functions which compose the company.

Quality policy aims to reach and maintain a position of leadership through its processes and further facilitates continuous improvement.

The quality system coordination is under the responsibility of the Quality Assurance Department, directly connected to the management of the company. It includes the basic quality functions, promotes specific courses related to quality and others which constantly aim at the consciousness of every employee, establishing among them an attitude towards quality.

In order to both expand the technological base and maintain its competitiveness edge, maintains a research and development orientation fully supported by the success of the company can be evidenced by the significant exports to more than 50 countries.

• Medium Voltage Industrial Motors
200 to 30,000 HP
• Square sign
• Wound rotor
• Synchronous Motors (100 to 20,000 HP)
• DC Motors and Generators
• Rescue Machine MCR's (500 kW/1000)
• Auxiliary - ACR's 800 Horse
• Industrial - ICR's 1000 to 2000 HP
• Permanent Magnet Motors
• DC Magnetic Drives (1 to 300)

Electric Motors.

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Equipos y Repuestos

7. Actuadores de válvulas



INFORMACION DEL PRODUCTO

MOTOR
Motores EMG, asincrónicos trifásicos TEN, motor sin ventilación. Esta construcción ofrece la mejor protección contra humedad y en espacios confinados apta para su uso en condiciones ambientales severas. Clase de aislamiento F.

DISEÑO DEL ENGRANAJE
Engranaje planetario serie con una larga vida útil. Lubricado de por vida. Sistema de alta fiabilidad. Instalación universal en cualquier posición. Poca cantidad de componentes. Fácil mantenimiento.

VOLANTE
Debido al engranaje planetario, la maniobra manual se realiza en poca rotación. El volante está instalado con el motor marcha.

CARACTERÍSTICAS & VENTAJAS

DREHMO® Estándar
Para sensores PUL y señales análogas. Medición de par y recordo con interrupción electrónica.

DREHMO® Mini C
Unidad de control con interfaz integrado con módulo digital industrial.

- Posibilidad de puestas al par de arranque para desbloqueo de compuertas.
- Conexión automática de fase para evitar daños durante la puesta en marcha.
- Modo de configuración "Learn" para en ajuste más sencillo.
- Control continuo de par y recordo con el COMBISENSOR.
- Conexión de programación DP para adaptar al estándar al interfaz del cliente.
- Conexión de fase de control con los generadores extendidos por DP, SPIN, Foundation Fieldbus.

DREHMO® Linea
Actuador eléctrico sin intrínseco. Ajuste y puesta en marcha mediante pantalla y teclado para todos los parámetros. Incluye todas las propiedades del MATIC C y el COMBISENSOR.

- Diagnóstico local de la válvula para mantenimiento preventivo.
- Parámetros y funciones ajustable localmente o a distancia.
- Placa de conectividad electrónica.
- Analógico.

Nuestra gama de productos para servicio Todo-Nada, intermitente y regulación:

	Actuadores multiválvulas	Para válvulas de compuerta, globo y bajadas
	Actuadores 1/4 de vuelta	Para dampers, válvulas de mariposa y bolas
	Actuadores lineales	Para válvulas de mariposa y dampers
	Reductores	Reductores de engranaje cónico o de corona shift
	Actuadores para centrados nucleares	

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Equipos y Repuestos

8. Bombas y Compresores

Sistemas nuevos y
Repuestos



Other Industrial
Pumps



Ampco Pump



Carver



Cat



MP Pump



MTH



Oberdorfer Pump
Oberdorfer Pump



Goulds Pumps



Peerless



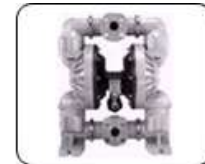
Pioneer Pump



Price Pump



Hypro



IR Aro Pump



Ingersoll-Rand



Pulsafeeder



Roper Pump



Tarby Pump



Ingersoll-Rand
Pump



ITT Jabsco
ITT Jabsco



Moyno/Robbins and
Meyers

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Equipos y Repuestos

9. Plantas de tratamiento de agua y repuestos

Industries Served

- Power
- Biotech
- Pharmaceutical
- Food & Beverage
- Chemical
- Petrochemical



Treatment Technologies

- Media Filtration
- Ion Exchange
- Membrane
- Membrane and Forced Draft Degasification
- Disinfection (UV & Ozone)
- EDI (Electro-Deionization)



In-House Capabilities

- Process Engineering
- Mechanical Engineering
- Electrical Engineering
- Graphics
- System Programming and Integration
- Fabrication and Assembly
- Equipment Testing
- Equipment Start-Up and Commissioning
- Service and Aftermarket Support



TENSOL Equipment Sourcing and Supply Solution

TECHNICAL & ENGINEERING SOLUTION INC.

743 Shotgun Rd. Sunrise, FL. 33326. Phone: (954) 473-9955 e-mail: tensolinc@gmail.com www.tensolinc.com

Equipos y Repuestos

10. Válvulas en general

globos, compuerta mariposa,
bola, motorizadas, de control,
aguja, otras

Valves	Angle	Ball	Butterfly	Check	Gate	Globe	Multiport	Plug
Materials	Brass	Stainless	Carbon Steel	Cast Iron	Cast Steel	Ductile Iron		
	Forged Steel	UP3 and UCS	Lined	Polymethylene	Special Alloy	Stainless Steel		
Actuation	Electric		Pneumatic		Accessories			
Special Purpose Valves	HF Acid or Alkali/Alloy	API 6D	Corrosive Service	Crack Relieving Valves	Control Valves			
	Cryogenic Valves	Environment Safe Valves	Fire Safe Valves	High Pressure Valves	High Temperature Valves			
	Hydraulic Oil Service Valves	Low Fugitive Emission Valves	Low Temperature Valves	Water Valves	Sanitary Valves			
	Square Service Valves	Shut-Off Service Valves	Turk Valves	UL/FM Valves	WOG Valves			



Manufacturer	Features	Downloads	Logo
Aloyco	Corrosion resistant Gate, Globe, & Check valves	PDF	
ADP	Floating and Trunion Mounted Ball Valves, Needle Valves, Check Valves, API 6A and 6D Gate Valves, Adjustable and Positive Chokes, and Fail Safe Pneumatic Actuators	PDF	
Atomac	Fluoropolymer and Ceramic Lined Ball Valves, Multiport Valves, V-Port Control Valves, Tank Drain Valves, Sampling Valves, Check Valves, Sight Glass, and Strainers	PDF	
Auma	Multi-Turn and Quarter-Turn Electric Actuators, Controls, Spur, Bevel, and Worm Gears	PDF	
Automax	Rack and Pinion and Scotch Yoke Pneumatic Actuators, Controls, and Accessories	PDF	
Centaline	Resilient Seated and PTFE Lined Butterfly Valves	PDF	
Crane	Electric Actuators, Controls, and Accessories	PDF	
DSI	Forged Steel Gate, Globe, and Check Valves for use in Low Fugitive Emission Service	PDF	
Duo-Chek II	Single and Dual Disc High Performance Wafer Check Valves	PDF	
Durco	Sleevelined and Fully Lined Plug Valves, HF Alkylation Valves, PFA and UHMWPE Lined Butterfly Valves, High Performance Butterfly Valves and Ball Valves	PDF	
Edward Valve	Cast Steel Gate, Globe, and Check Valves, Forged Steel Globe and Check Valves, Nuclear Valves, Specialty Valves, and Strainers	PDF	
Flowseal	High Performance Soft Seat, Metal Seat, and Fire-Safe Butterfly Valves	PDF	
Flowseal HCS	Zero Leakage, Zero Maintenance Triple Offset Butterfly Valves	PDF	
Flowserve	Pumps, Bushings, Gas panels, Seats, Control Valves, Desuperheaters, Pressure Multipliers, and Strainers	PDF	
Nibco	Floating Ball Valves, Resilient Seated Butterfly Valves, Bronze and Iron Gate, Globe, and Check Valves, Electric Actuators	PDF	
Nordstrom	Iron and Steel Lubricated Plug Valves and Accessories	PDF	
Powell	Cast Steel Gate, Globe, and Check Valves, Forged Steel Gate, Globe, and Check Valves, Specialty Valves	PDF	
Quadant	Standards Compliant Ball Valves and Butterfly Valves, Actuators, Gear Operators, Limit Switches, Breather Blocks, and Metric Inserts	PDF	

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11. Paquetes de compresión de Gas Natural

Desde 100 HP hasta 10,000 HP o más
Flujos – hasta 30 MMSCFD o más



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12. Generadores de electricidad, ahorradores modulares de energía utilizando energía solar y/o eólica

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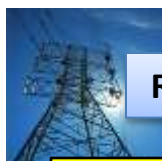
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GENERACIÓN DISTRIBUIDA Y
SOPORTE PARA UNA RED
ELÉCTRICA INTELIGENTE

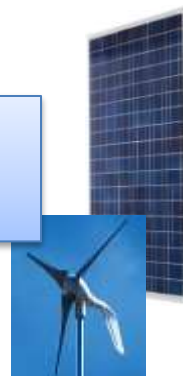


EQUIPOS INTELIGENTES AHORRADORES DE ENERGÍA



RED ELÉCTRICA

FUENTES DE
ENERGÍA
RENOVABLES



AHORRADORES INTELIGENTES DE ENERGIA TENSOL

Basado en tecnología de microprocesadores



(US Patent Pending)



BATERIAS DE
ALMACENAMIENTO
DE ENERGÍA



CARGA
ELÉCTRICA



- OPERACIÓN LIBRE DE MANTENIMIENTO
- NO CONSUME COMBUSTIBLE
- OPERACIÓN SILENCIOSA



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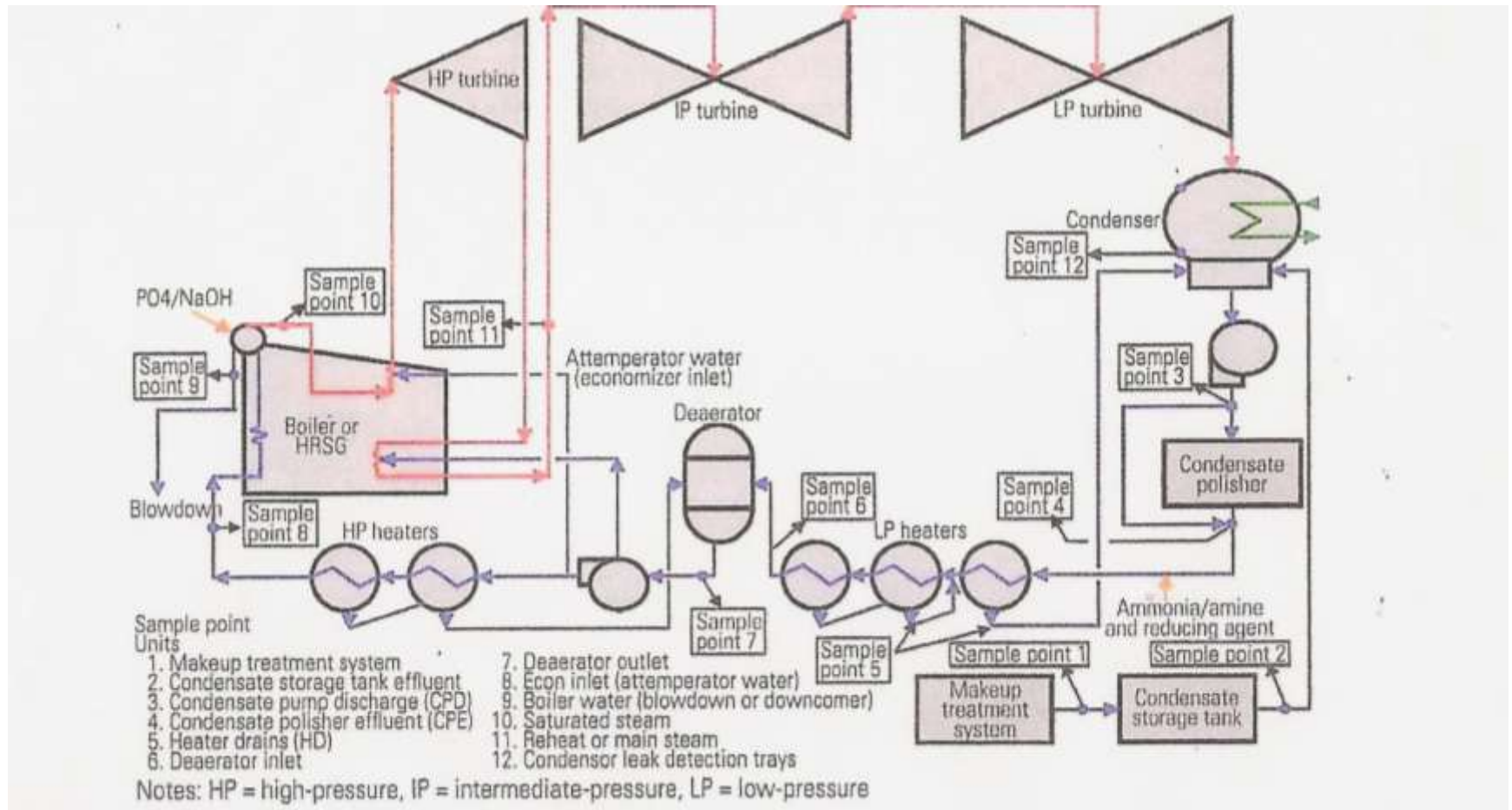
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Equipos y Repuestos



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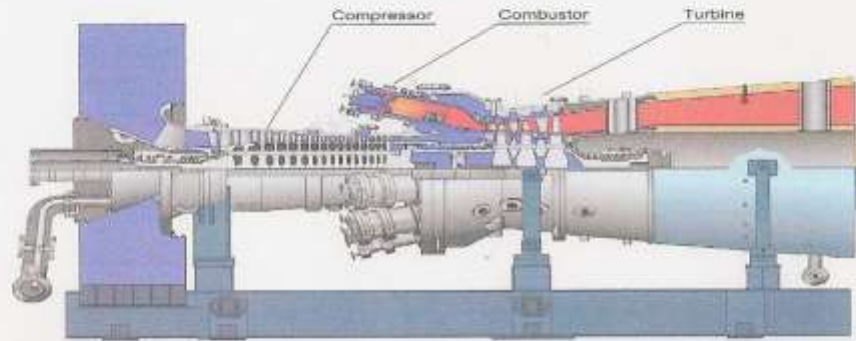
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Equipos y Repuestos

Specification— Major Components

The control compartment, gas turbine package, generator package, and generator auxiliary compartment make up the H-25 gas turbine generator set for 50 and 60 Hz application.



Specification

Components		Design
Gas Turbine	Type	Heavy Duty Design Simple Cycle Single Shaft Horizontal Split Casing, Stacking Rotor
		Rotating Speed H-25 : 7,280rpm / H-15 : 9,710rpm
Compressor	Type	17 Stages Axial Type
Turbine	Type	3 Stages Impulse Type
	Cooling	Air Cooled 1st and 2nd Stage Nozzle and Bucket Reverse Flow Type
Combustor	Type	Conventional Type or Low NOx Type (25ppm) Combustor
	Liner Cooling	H-25 : 10 Combustors / H-15 : 6 Combustors Slot Cooling

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