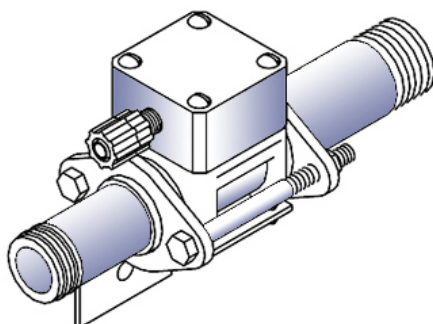


# Manual Básico

## Equipos Cloración y Decloración

### Capital Controls

serie 480 - 200 - NTX3000





## Puesta en Marcha :

El Ejector con su suministro de agua y línea de solución deben estar correctamente instaladas y operando antes de hacer andar el sistema de cloración.

Para esto debe sacarse el tubing a la salida del ejector y comprobar que exista vacío para hacer funcionar la válvula de vacío, el módulo de cambio automático y la válvula de control.

Proceder así:

- 1 Desconecte el tubing de vacío desde el ejector.
- 2 Haga funcionar la bomba booster para alimentar el agua al ejector. El ejector deberá ahora generar vacío.
- 3 Coloque su dedo en el conector del ejector y sienta la succión, no debe haber duda de que hay vacío. Si no hay vacío consultenos (56 2) 776 3060 no puede seguir con la puesta en marcha hasta no solucionar este problema.
- 4 reconecte el tubing de vacío al ejector.
- 5 Configure el controlador WP840 en MANUAL, debe presionar ENTER, luego SELECT y cuando aparezca MANUAL en la pantalla, presionar ENTER.
- 6 Con la perilla abajo de la válvula de control proceda a abrir la válvula hasta un 20%, éste porcentaje puede verse en el controlador.
- 7 Revise que no existan fugas de gas con un rociador con una solución de amoníaco para detectar la presencia de cloro gas.
- 8 Con el ejector funcionando y la válvula del cilindro de gas cerrada, la bolita del rotámetro debe estar quieta en el fondo, si ésta se mueve indica que hay una fuga en el sistema, por lo que debe revisar todos las uniones del tubing de vacío.y corrija si es necesario.
- 9 Cuando la bolita del rotámetro caiga, el pin indicador de suministro de gas se recogerá indicando que no hay gas cloro.
- 10 Apague la bomba booster o el suministro de agua al ejector para detener el funcionamiento del ejector.
- 11 Desconecte el tubing de vacío a la salida de la válvula reguladora de vacío para que entre aire al sistema, el indicador de suministro de gas deberá ahora estar claramente afuera de la cara del regulador.
- 12 Reconecte el tubing de vacío a la válvula reguladora.
- 13 Abra la válvula del cilindro de gas cloro 1/4 de vuelta y ciérrela inmediatamente.
- 14 Revise el montaje de Yoke, buscando la presencia de fugas rociando amoníaco con la botella. Si hay un humo blanco reapriete el sello de plomo o en su defecto cambielo para eliminar la fuga.
- 15 Vuelva a abrir la válvula del cilindro 1/4 de vuelta y revise nuevamente que no hayan fugas.
- 16 Prenda nuevamente la bomba booster para generar vacío y confirme que está pasando gas cloro a la solución,
- 17 Puede regular manualmente con la perilla de la válvula automática o hacer funcionar el sistema en automático. Para esto sólo deberá presionar ENTER en el controlador y aparecerá AUTO en la pantalla, al volver a presionar ENTER la válvula comenzará a operar como fue programada, de acuerdo al residual o al caudal.

NOTA: Nunca use la válvula de regulación para cerrar el sistema, la válvula puede dañarse si es usada para cortar el suministro de gas cloro.



### Detención :

- 1 Cierre la válvula del cilindro de gas cloro.
- 2 Cuando el pin indicador de suministro se corra hacia atrás o quede escondido, significa que el sistema está vacío y el sistema detenido, recuerde que este sistema tiene cambio automático por lo que deberá cerrar ambos cilindros.
- 3 Detenga las bombas booster.

### Cambio de Cilindros :

- 1 Cierre la válvula del cilindro.
- 2 La bolita indicadora debe estar en cero y el pin indicador de suministro de gas cloro debe estar escondido.
- 3 Espere un minuto el pin indicador debe mantenerse escondido, lo mismo que la bolita del rotámetro no debe moverse.
- 4 Suelte la tuerca del yoke y saque el regulador de vacío de la válvula del cilindro.
- 5 Reemplace el cilindro de gas cloro.
- 6 Remueva el antiguo sello de plomo, inspeccione y limpie la superficie de unión de la válvula reguladora de vacío y la válvula del contenedor. Revise el filtro y cambie si es necesario. Coloque un nuevo sello de plomo.
- 7 Posicione el regulador de vacío en un cilindro de gas cloro lleno y apriete la tuerca del Yoke. NO APRIETE EXCESIVAMENTE.
- 8 Abra la válvula del cilindro de gas cloro 1/4 de vuelta y ciérrela inmediatamente.
- 9 Revise el montaje de Yoke, buscando la presencia de fugas rociando amoníaco con la botella. Si hay un humo blanco reapriete el sello de plomo o en su defecto cámbielo para eliminar la fuga.
- 10 Vuelva a abrir la válvula del cilindro 1/4 de vuelta y revise nuevamente que no hayan fugas.
- 16 Prenda nuevamente la bomba booster para generar vacío si es que no está funcionando con un sistema de cambio automático.



## Programación del sistema dosificación WP840 :

1 Presionar la tecla ENTER, presionar la tecla MODE hasta que en pantalla aparezca, Residual (La regulación se hace sólo por la señal que recibe del medidor de cloro residual), Flow (La regulación se hace proporcional al caudal), Compound (La regulación se hace en forma compuesta caudal y residual).

### REGULACION POR CAUDAL

2 Presionando la tecla MODE hasta que aparezca FLOW en la pantalla, seleccione la opción con la tecla ENTER y luego aparece AUTO, vuelva a presionar ENTER. El equipo ya está programado.

### REGULACION POR RESIDUAL

3 Presionando la tecla MODE hasta que aparezca RESIDUAL en la pantalla, seleccione la opción con la tecla ENTER y luego aparece RESIDUAL Mg/l, que corresponde a full escala del analizador de cloro residual, normalmente para aplicaciones de agua potable, este valor es 2.

4 Luego de presionar la tecla ENTER, aparece SET POINT mg/l que corresponde a la concentración, que se quiere lograr con el equipo, este valor para agua potable normalmente va entre 0,4 y 0,8 mg/l.

5 Luego de presionar la tecla ENTER, aparece MAX DESV mg/l que corresponde a la desviación que puede ser aceptable antes de que activar alarmas de alto y bajo concentración de cloro, este valor para agua potable normalmente va entre 0,2 mg/l.

6 Vuelva a presionar ENTER. El equipo ya está programado.

### REGULACION POR CAUDAL Y RESIDUAL

7 Siga los mismos pasos de la regulación por residual (3, 4, 5).

8 En la pantalla aparecerá FIXED TIME, que corresponde al tiempo, en segundos, mínimo antes de que la dosificación se vea afectada por la señal de residual. Este valor depende de la forma en que se haga el control, especialmente la ubicación del analizador de cloro residual con respecto al punto de inyección. Un valor razonable es al menos 120 segundos.

9 En la pantalla aparecerá VARIABLE TIME, que corresponde al tiempo, en segundos que se descuenta al tiempo fijo y éste varía de acuerdo al porcentaje del caudal máximo.

6 Vuelva a presionar ENTER. El equipo ya está programado.

## Regulación de la dosificación en WP840 :

1 Con el sistema funcionando en Automático, se reconoce cuando en la pantalla aparece una A en la esquina derecha superior (eventualmente aparecen los símbolos + y - en la misma posición).

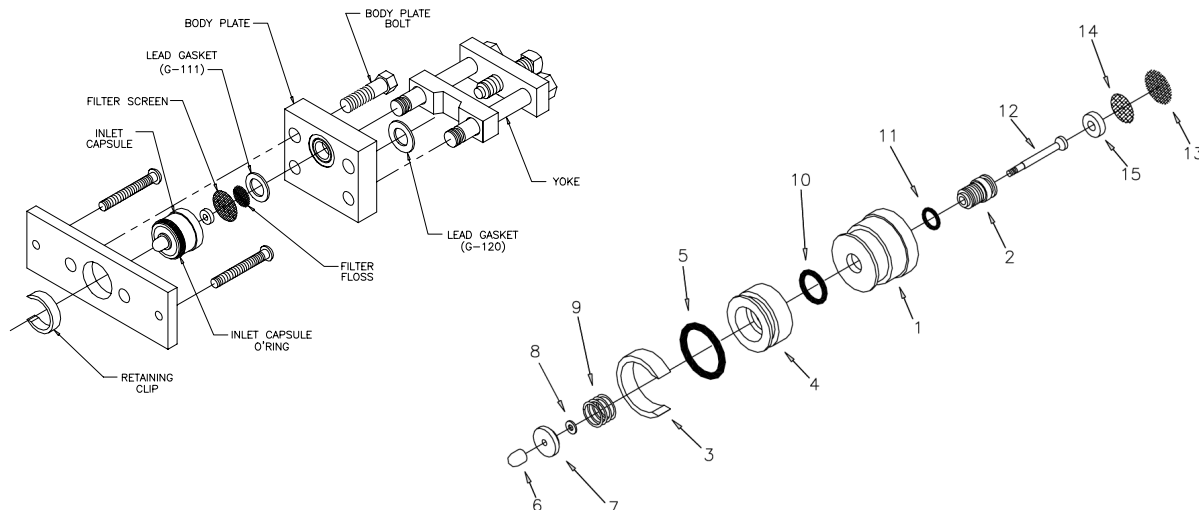
2 Presionando la tecla MODE del teclado de la WP840, aparecerán unas abreviaturas un poco más a la izquierda del símbolo A. POS (Posición de la válvula), FLOW (Porcentaje del flujo), LFLW (porcentaje del flujo en que asume que la dosificación es 0) y DOS (Porcentaje Dosificación)

3 Al estar en dosificación, se puede cambiar ésta con las teclas + y - hasta llegar al caudal de gas cloro que se desee. Dado que la reacción del cloro con el agua sólo se puede verificar empíricamente, se debe tomar una muestra de agua por lo menos 10 DN aguas abajo del punto de inyección. Cuando se logra obtener la concentración de cloro residual requerida en el punto de medición, la programación está lista.



## Servicio :

## Recambio Capsula de Entrada :



| ITEM NO. | QTY. | DESCRIPTION                           | PART NO.    |                |           |
|----------|------|---------------------------------------|-------------|----------------|-----------|
|          |      |                                       | CHLORINE    | SULFUR DIOXIDE | AMMONIA   |
| 1        | 1    | INLET ADAPTOR                         | SEE CHART I | SEE CHART II   | T-1166    |
| + 2      | 1    | VALVE SEAT                            | W-110       | W-110          | W-110     |
| 3        | 1    | INLET RETAINING RING                  | U-1830      | U-1830         | U-1830    |
| 4        | 1    | ADAPTOR SEAL PLUG                     | U-182       | U-182-1        | U-182     |
| + 5      | 1    | O-RING                                | OV-11-212   | OV-11-212      | OA-11-212 |
| 6        | 1    | VENT PLUG                             | V-111       | V-111-1        | V-111-1   |
| 7        | 1    | SPRING RETAINER                       | U-183       | U-183          | U-183     |
| 8        | 1    | HOLDER                                | W-113       | W-113-1        | W-113-1   |
| 9        | 1    | INLET SPRING                          | S-104       | S-104          | S-104-1   |
| +10      | 1    | O-RING                                | OV-11-112   | OV-11-112      | OA-11-112 |
| +11      | 1    | O-RING                                | OV-11-011   | OV-11-011      | OA-11-011 |
| 12       | 1    | INLET VALVE PLUG                      | W-112       | W-112-1        | W-112-1   |
| +13      | 1    | FILTER FLOSS                          | BM-1023     | BM-1023        | BM-1023   |
| 14       | 1    | INLET FILTER SCREEN                   | W-101       | W-101-1        | W-101-1   |
| 15       | 1    | FILTER STOP                           | U-184       | U-184          | U-184     |
| 16       | 1    | INLET CAPSULE ASSEMBLY<br>-SEE NOTE 2 | SEE CHART I | SEE CHART II   | BM-4883   |
| 17       | 1    | MAINTENANCE KIT-SEE NOTE 1            | 14170       | 14170          | 14171     |

CHART I CL2

| ITEM NO. |        |
|----------|--------|
| 16       | 1      |
| BM-4865  | T-1170 |
| BM-4867  | T-1160 |
| BM-4868  | T-1164 |
| BM-4869  | T-1167 |
| BM-6332  | T-1541 |

CHART II SO2

| ITEM NO. |        |
|----------|--------|
| 16       | 1      |
| BM-4873  | T-1167 |
| BM-4877  | T-1160 |
| BM-4879  | T-1164 |
| BM-4881  | T-1170 |
| BM-6333  | T-1541 |

### NOTES:

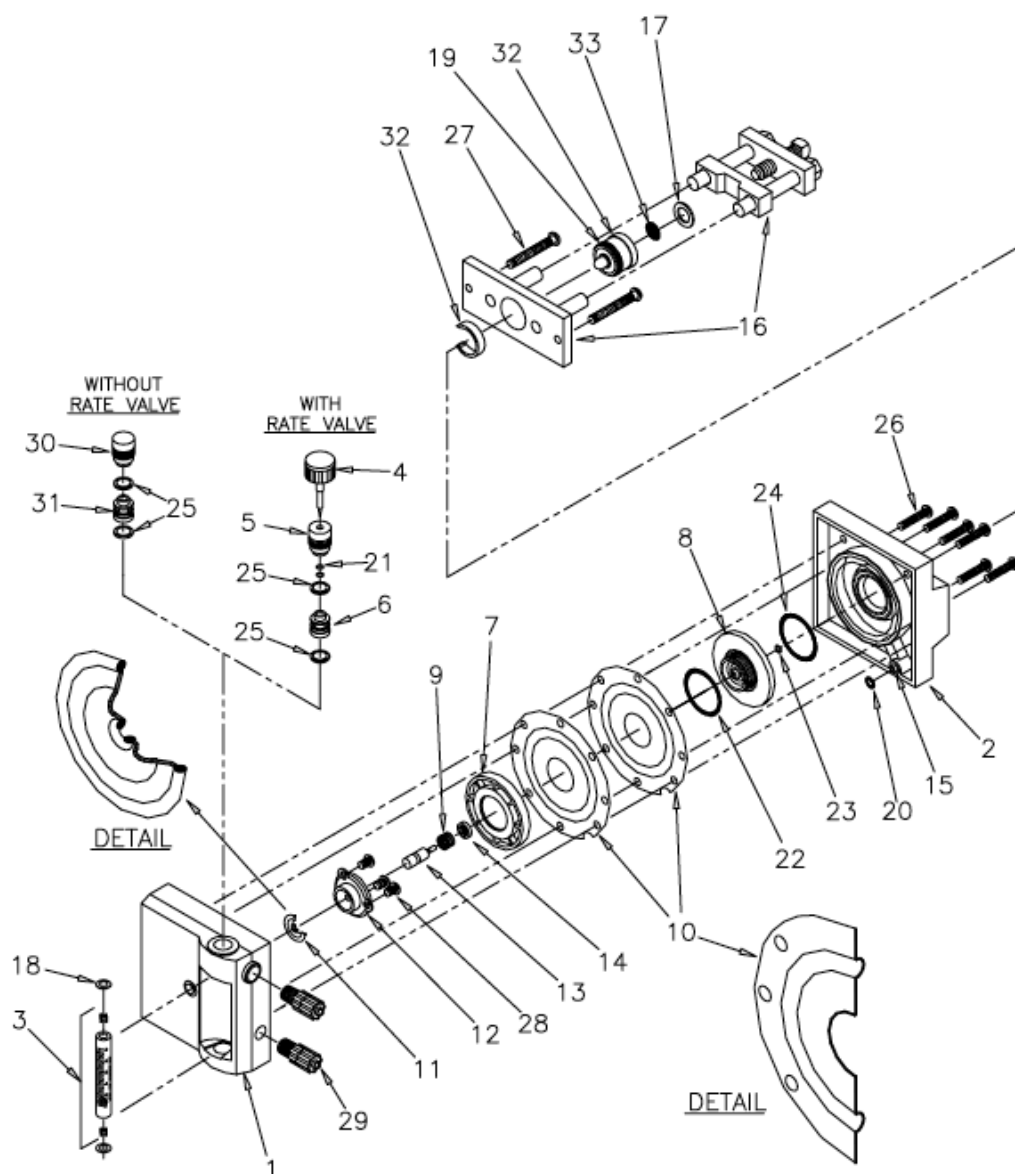
- (+) INDICATES PARTS INCLUDED IN PREVENTIVE MAINTENANCE KIT FOR THE INLET CAPSULE. TO ORDER KITS SPECIFY THE PART NO. PER ITEM NO. 17.
- ITEM NUMBER 16 INCLUDES ITEM NUMBERS 1 THRU 15. SEE YOKE ASSEMBLY PARTS LIST 100.7002 (SERIES 400) OR 100.7026 (SERIES 200) FOR COUNTRY GROUP INFORMATION.

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Datos de Utilidad



## Desmontaje del Regulador de Vacío Serie 480:



## Valores de Torque :

Los siguientes son los torque recomendados para el rearmado de la válvula reguladora de vacío.

Tornillos (Cantidad - 8): 10 inch pounds



## Lista de Partes Regulador de Vacío Serie 480:

| KEY NO. | QTY.  | DESCRIPTION                                      | PART NO.  |
|---------|-------|--------------------------------------------------|-----------|
| 1       | 1     | FRONT BODY ASSEMBLY                              | A-822     |
| 2       | 1     | BACK BODY                                        | U-198     |
| 3       | 1     | FLOWMETER ASSEMBLY                               | SEE CHART |
| 4       | 1     | RATE VALVE ASSEMBLY                              | SEE CHART |
| 5       | 1     | VALVE BONNET                                     | U-349     |
| 6       | 1     | VALVE SLEEVE                                     | U-350     |
| 7       | 1     | DIAPHRAGM FRONT PLATE                            | U-325     |
| 8       | 1     | DIAPHRAGM BACK PLATE                             | U-328     |
| 9       | 1     | RELIEF SPRING                                    | S-100     |
| 10      | 1 SET | DIAPHRAGM (2 PER SET)                            | D-108     |
| + 11    | 1     | SEALING DIAPHRAGM                                | D-102     |
| 12      | 1     | SEAL COVER                                       | U-351     |
| 13      | 1     | GUIDE PIN                                        | W-153     |
| 14      | 1     | SPRING RETAINER                                  | U-352     |
| 15      | 1     | FLOW TUBE                                        | U-162     |
| 16      | 1     | YOKE ASSEMBLY (SEE PARTS LIST 100.7002)          | -----     |
| 17      | 1     | LEAD GASKET (SEE PARTS LIST 100.7002)            | -----     |
| + 18    | 2     | METER GASKET                                     | SEE CHART |
| 19      | 1     | O-RING (SEE NOTE 3)                              | OV-11-212 |
| + 20    | 1     | O-RING                                           | OV-11-012 |
| + 21    | 2     | O-RING                                           | OV-11-008 |
| + 22    | 1     | O-RING                                           | OV-11-028 |
| + 23    | 1     | O-RING                                           | OV-11-009 |
| + 24    | 1     | O-RING                                           | OV-11-325 |
| + 25    | 2     | O-RING                                           | OV-11-112 |
| 26      | 6     | SCREW, 1/4-20 X 1-1/4 INCH LG                    | N-130     |
| 27      | 2     | SCREW, 1/4-20 X 2-1/4 INCH LG                    | N-129     |
| 28      | 3     | SCREW, 1/4-20 X 3/8 INCH LG                      | N-157     |
| 29      | 2     | 3/8 INCH TUBING CONNECTOR                        | F-100     |
| 30      | 1     | BONNET PLUG                                      | U-430     |
| 31      | 1     | VALVE SLEEVE                                     | U-436     |
| 32      | 1     | INLET CAPSULE ASSEMBLY (SEE PARTS LIST 100.7002) | -----     |
| 33      | 1     | REPLACEMENT FILTER                               | BM-1023   |

### CAPACITY PPD (G/H) (KG/H)

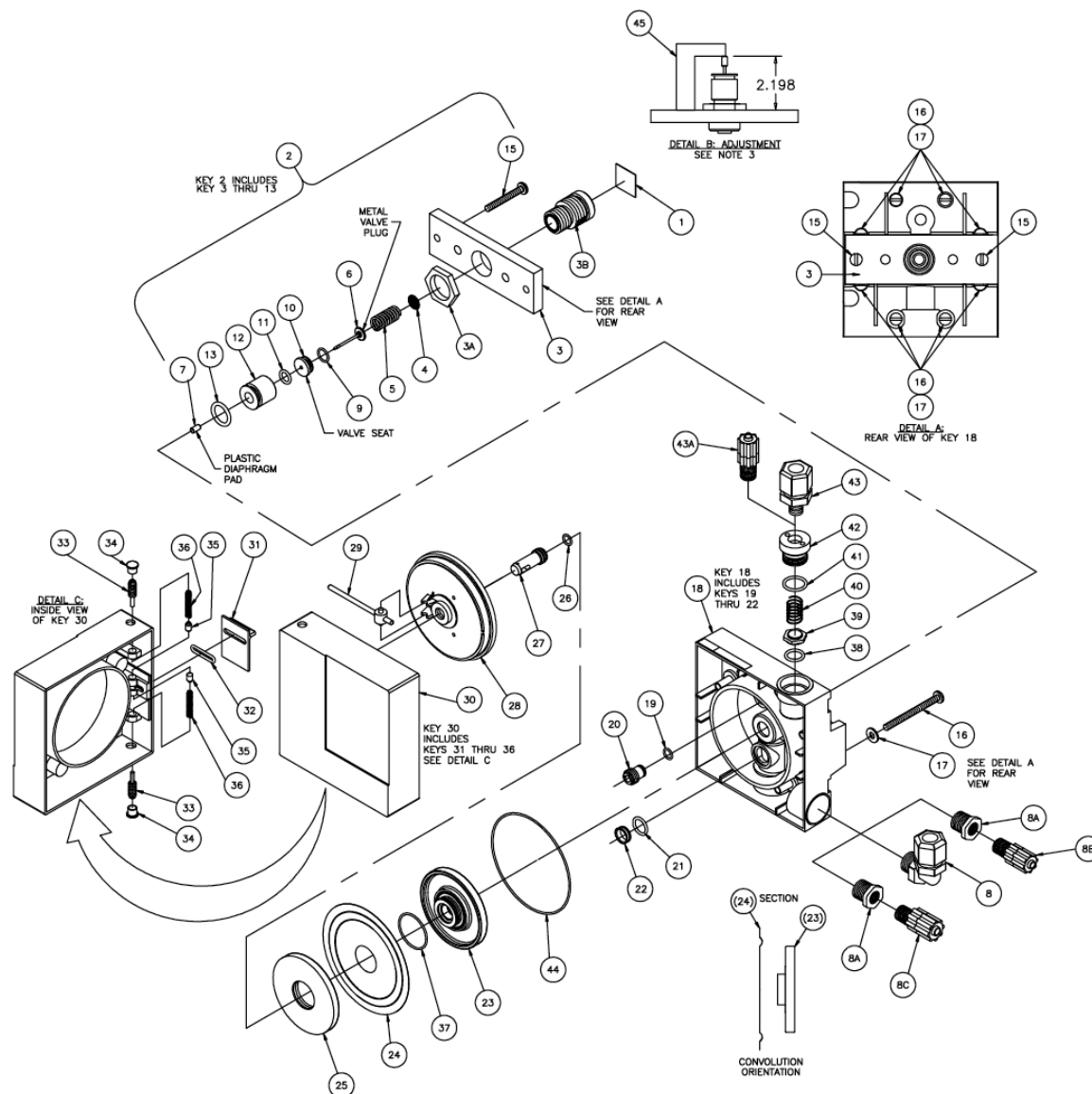
| KEY NO. |     | 4<br>(75) | 10<br>(200) | 25<br>(0.5 KG/H) | 50<br>(0.9 KG/H) | 100<br>(1.9 KG/H) |
|---------|-----|-----------|-------------|------------------|------------------|-------------------|
| 3       | PPD | A-108-3   | A-108-4     | A-108-5          | A-108-6          | A-108-8           |
|         | G/H | A-108-3-M | A-108-4-M   |                  |                  |                   |
| 4       |     | A-665-1   | A-665-1     | A-665-1          | A-665-2          | A-665-2           |
| 18      |     | G-100-1   | G-100-1     | G-100-2          | G-100-3          | G-100-3           |

### NOTES:

- (+) INDICATE PARTS INCLUDED IN KITS FOR MAINTAINING THE VACUUM REGULATOR. ADDITIONAL PARTS AND QUANTITIES SHOULD BE CONSIDERED WHERE THE EQUIPMENT IS USED TO ITS FULLEST CAPABILITY OR WHEN LOCATED IN AN AREA REMOTE FROM CONVENIENT SERVICE.  
TO ORDER A PREVENTIVE MAINTENANCE KIT, PARTS INDICATED BY (+) ORDER:  
50PPD(1.0KG/H) OR 100PPD(2.0KG/H)-----12843-1PM  
4PPD(75G/H); 10PPD(200G/H) OR 25PPD(.5KG/H)-----12843-2PM
- WHEN ORDERING PARTS, SPECIFY GAS FEEDER CAPACITY, MODEL NUMBER, AND SERIAL NUMBER.
- KEY NUMBER 19 AND KEY NUMBER 33 ARE INCLUDED IN KEY NUMBER 32 - INLET CAPSULE ASSEMBLY.



## Desmontaje del Regulador de Vacío Serie NXT3000:



### Valores de Torque :

Los siguientes son los torque recomendados para el rearmado de la válvula reguladora de vacío.

Tornillos (Cantidad - 8): 10 inch pounds



## Lista de Partes Regulador de Vacío Serie NXT3000:

| PM Kit Ref Number |     |      | Service & Part Number                         |                                            |                 |
|-------------------|-----|------|-----------------------------------------------|--------------------------------------------|-----------------|
| (See Note 1)      | Key | Qty. | Part Description                              | CL <sub>2</sub>                            | SO <sub>2</sub> |
| 1, 2              | +1  | 1    | PAD, Filter – See Note 2                      | 350C067U01                                 | 350C067U01      |
|                   | 2   | 1    | Inlet Valve Assembly - See Note 3, 6          | 20052                                      | 20052           |
|                   | 2B  |      | Inlet Valve Assembly w/out Key 3 plate        | 19441                                      | 19441           |
|                   | 3   | 1    | Plate, Inlet Fitting Support-(See Note 6)     | 19481                                      | 19481           |
|                   | 3A  | 1    | Nut, Jam                                      | 397B067U01                                 | 397B067U01      |
|                   | 3B  | 1    | Fitting, Gas Inlet -(See Note 6)              | 364E187U03                                 | 364E187U03      |
|                   | 4   | 1    | Disc, Perforated                              | 350C016P30                                 | 350C016P30      |
|                   | 5   | 1    | Spring, Valve                                 | 424A431U01                                 | 424A431U01      |
| 2                 | 6   | 1    | Valve Plug Assembly                           | 668B146U01                                 | 668B146U01      |
| 2                 | 7   | 1    | Diaphragm Pad                                 | 433B063U01                                 | 433B063U01      |
|                   | 8   | 1    | Fitting, Adaptor: ½" NPT x 5/8" OD Tube Elbow | 111G001U06                                 | 111G001U06      |
|                   | 8A  | 1    | Bushing, 1/2" MNPT x 1/4" FNPT                | 111G002U07                                 | 111G002U07      |
|                   | 8B  | 1    | 1/4" NPT x 3/8" Tubing Connector              | F-100-1                                    | F-100-1         |
|                   | 8C  | 1    | 1/4" NPT x 1/2" Tubing Connector              | F-106-1                                    | F-106-1         |
|                   | 9   | 1    | O-ring, Seat Seal                             | 101W902U01                                 | 101W902U01      |
| 2                 | 10  | 1    | Valve Seat Assembly (Includes Key 9)          | 668B128U01                                 | 668B128U01      |
| 1, 2              | +11 | 1    | O-ring, Bonnet Seal                           | 101W709U01                                 | 101W709U01      |
|                   | 12  | 1    | Bonnet, Valve                                 | 433B060U01                                 | 433B060U01      |
| 1, 2              | +13 | 1    | O-ring, Inlet Seal                            | 101W716U01                                 | 101W716U01      |
|                   | 15  | 2    | Screw, Pan Head: ¼ - 20 x 2"                  | 036B208M10                                 | 036B208M10      |
|                   | 16  | 8    | Screw, Pan Head: ¼ - 20 x 3"                  | 036B308M10                                 | 036B308M10      |
|                   | 17  | 8    | Washer, Plain: ¼"                             | 095A008U01                                 | 095A008U01      |
|                   | 18  | 1    | Rear Body Assembly                            | 19538                                      | 19538           |
|                   | 19  | 1    | O-ring, Diaphragm Stop                        | 101A707U01                                 | 101A707U01      |
|                   | 20  | 1    | Stop, Diaphragm                               | 19545                                      | 19545           |
| 1                 | +21 | 1    | O-ring, Gas Shut-off Seal                     | 101W712U01                                 | 101W712U01      |
|                   | 22  | 1    | Retainer, O-ring                              | 19547                                      | 19547           |
|                   | 23  | 1    | Bolt, Diaphragm                               | 19550                                      | 19550           |
| 1                 | +24 | 1    | Diaphragm                                     | 425B142U01                                 | 425B142U01      |
|                   | 25  | 1    | Plate, Diaphragm Backing                      | 19551                                      | 19551           |
| 1                 | +26 | 1    | O-ring, Guide Rod Seal                        | 101W707U01                                 | 101W707U01      |
|                   | 27  | 1    | Diaphragm Guide Rod-Assembly                  | 649B062U01                                 | 649B062U01      |
|                   | 28  | 1    | Diaphragm Plate Guide-Assembly                | 19628                                      | 19628           |
|                   | 29  | 1    | Level, Status                                 | 647B161U01                                 | 647B161U01      |
|                   | 30  | 1    | Front Body Assembly                           | 19552                                      | 19552           |
|                   | 31  | 1    | Plate, Status indicator                       | 19539                                      | 19539           |
|                   | 32  | 1    | O-ring, Guard                                 | 101W917U01                                 | 101W917U01      |
|                   | 33  | 2    | Screw, Adjustment                             | 396G165U01                                 | 396G165U01      |
|                   | 34  | 2    | Caplug                                        | 114A033U01                                 | 114A033U01      |
|                   | 35  | 2    | Detent Plug                                   | 366A275U01                                 | 366A275U01      |
|                   | 36  | 2    | Spring                                        | 424A425U01                                 | 424A425U01      |
| 1                 | +37 | 1    | O-ring, Diaphragm Bolt Seal                   | 101W001U13                                 | 101W001U13      |
| 1                 | +38 | 1    | O-ring, seat seal                             | 102E077U33                                 | 102E077U33      |
|                   | 39  | 1    | Seat, Spring                                  | 378D051U01                                 | 378D051U01      |
|                   | 40  | 1    | Spring                                        | 424A424U01                                 | 424A424U01      |
| 1                 | +41 | 1    | O-ring, Adaptor Seal                          | 101W917U01                                 | 101W917U01      |
|                   | 42  | 1    | Adaptor                                       | 365B073U01                                 | 365B073U01      |
|                   | 43  | 1    | Fitting, Adaptor: ½" NPT x 5/8" OD Tube       | 111G002U09                                 | 111G002U09      |
|                   | 43A | 1    | Fitting, 1/4" NPT x 3/8" Tubing               | F-100-1                                    | F-100-1         |
| 1                 | +44 | 1    | O-ring, Rear Body Seal                        | 102E077U37                                 | 102E077U37      |
| 1, 2              | 45  |      | Gauge, Inlet Valve                            | Supplied in PM Kits 614090U01 & 668B130U01 |                 |



## Lista de Partes Regulador de Vacío Serie NXT3000:

### Vacuum Regulator Accessory Kit P/N 614S113U01

| <u>Qty.</u> | <u>Part Description</u>         | <u>Part Number</u> |
|-------------|---------------------------------|--------------------|
| 1           | Tube Fitting - Elbow 1/2 - 5/8" | 111G001U06         |
| 1           | Insect Screen                   | 127A009U01         |
| 1           | Grease Lubricant                | 140B001U01         |
| 6           | Filter Pad                      | 350C067U01         |
| 1           | Wrench, Chlorine                | 430A011S60         |
| 4           | Lead Gasket (U.S. Valves)       | G-111              |
| 1           | Poly bottle - 4 ox. #11637      | R-214              |

### Preventive Maintenance Kits:

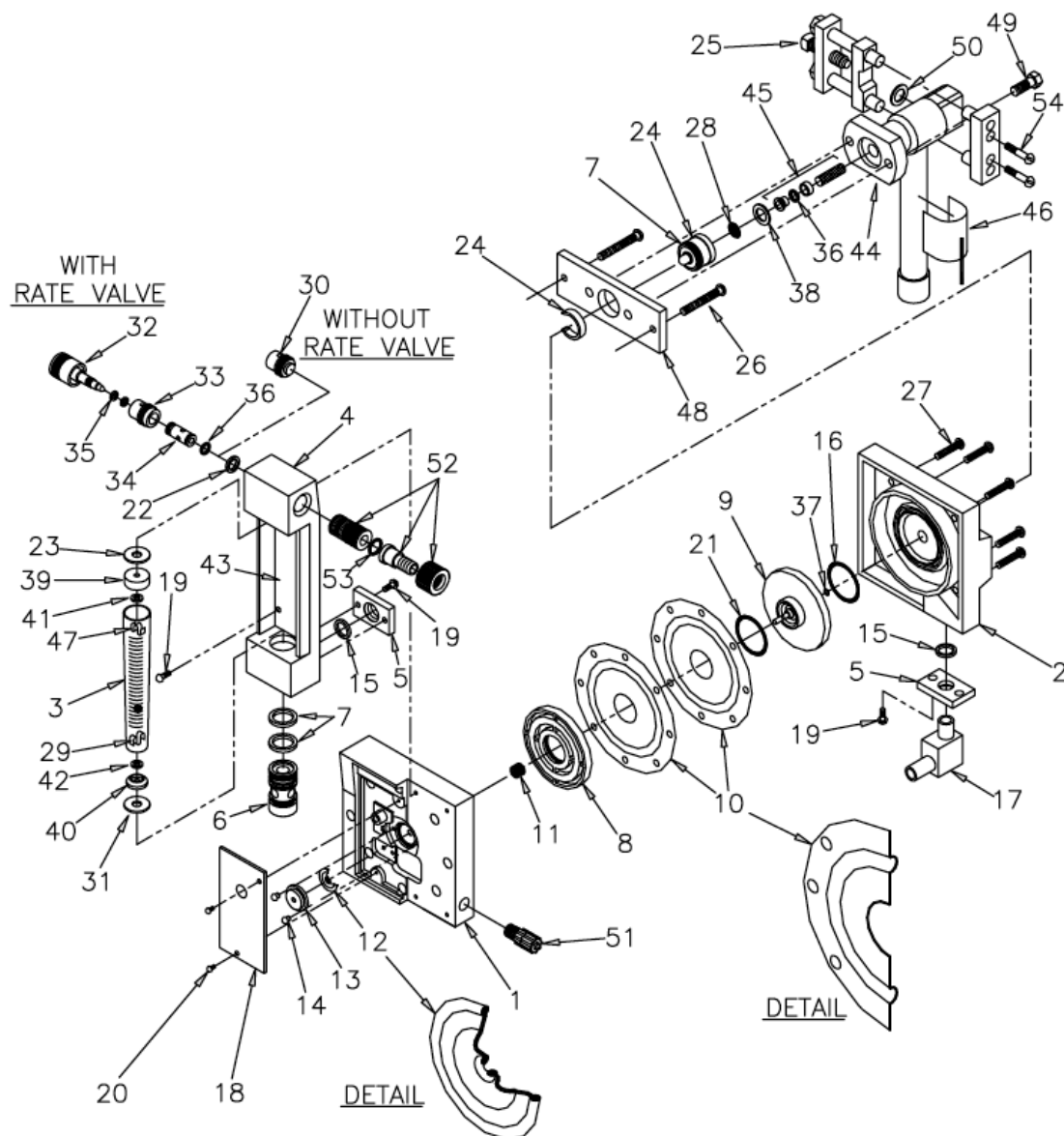
| <u>PM Kit Ref #.</u> | <u>PM Kit Description</u>                            | <u>Part Number</u> |
|----------------------|------------------------------------------------------|--------------------|
| 1                    | Vacuum Regulator (Chlorine & Sulfur Dioxide service) | 614S090U01         |
| 2                    | Inlet Valve (Chlorine & Sulfur Dioxide service)      | 668B130U01         |
|                      | Inlet Valve Filters & Lead Gaskets (10 each)         | 614S091U01         |
|                      | Lead Gaskets (25 each)                               | BM-4901            |

#### NOTES:

1. Listed parts are available in preventive maintenance kits for chlorine and sulfur dioxide service only. For ammonia service, order parts separately.
2. Filter pad (350C067U01) is used for, and restricted for use with cylinder mounted vacuum regulators supplied for chlorine gas service (CL2) and sulfur dioxide (SO2) service of 100 PPD or less.
3. When parts are replaced in the inlet valve assembly (Key 2), the dimension between the inside of the plate and the tip of the diaphragm pad (Key 7) must be as shown in Detail B. Adjustment is made by loosening jam nut (Key 3A) and rotating the gas inlet fitting (Key 3B). Use the Inlet Valve Gauge (Key 45) supplied in the PM Kits to set the proper dimension.
4. For a complete Vacuum Regulator (Chlorine & Sulfur Dioxide service) as shown w/out Key 8 Series fittings use P/N 19715.
5. Refer to price sheet 100.8040 for vacuum regulator assemblies complete with mounting yokes and accessories.
6. Refer to parts list 100.7605 for North American and 100.7604 for International yoke assemblies.



## Desmontaje del Regulador de Vacío Serie 200 500 PPD Ton:



### Valores de Torque :

Los siguientes son los torque recomendados para el rearmado de la válvula reguladora de vacío.

Tornillos (Cantidad - 8): 10 inch pounds

**E4**

**Datos de Utilidad**



## Listado de Partes Regulador de Vacío Serie 200 500 PPD Ton:

| ITEM | QTY.  | DESCRIPTION                               | PART NO.      | ITEM | QTY. | DESCRIPTION                  | PART NO.      |
|------|-------|-------------------------------------------|---------------|------|------|------------------------------|---------------|
| 1    | 1     | FRONT BODY                                | SEE CHART IV  | + 31 | 1    | BOTTOM METER GASKET          | G-115         |
| 2    | 1     | BACK BODY                                 | U-234         | 32   | 1    | VALVE STEM ASSEMBLY          | A-651         |
| 3    | 1     | FLOWMETER ASSEMBLY                        | SEE CHART I   | 33   | 1    | VALVE BONNET                 | W-118         |
| 4    | 1     | METER BODY                                | M-122         | 34   | 1    | VALVE SLEEVE                 | W-116         |
| 5    | 2     | CLAMP                                     | U-235         | + 35 | 2    | O-RING                       | OV-11-010     |
| 6    | 1     | METER INLET PLUG                          | U-232         | + 36 | 2    | O-RING (SEE NOTE 4)          | OV-11-012     |
| 7    | 3     | O-RING (SEE NOTE 5)                       | OV-11-212     | + 37 | 1    | O-RING                       | OV-11-009     |
| 8    | 1     | DIAPHRAGM FRONT PLATE                     | U-269         | + 38 | 1    | LEAD GASKET (SEE NOTE 6)     | G-111         |
| 9    | 1     | DIAPHRAGM BACK PLATE                      | A-363         | 39   | 1    | TOP END CAP                  | SEE CHART I   |
| 10   | 1 SET | DIAPHRAGM (2 PER SET)                     | D-106         | 40   | 1    | BOTTOM END CAP               | SEE CHART I   |
| 11   | 1     | RELIEF SPRING                             | S-100         | + 41 | 1    | TOP END CAP GASKET           | SEE CHART I   |
| + 12 | 1     | SEALING DIAPHRAGM                         | D-102         | + 42 | 1    | BOTTOM END CAP GASKET        | SEE CHART I   |
| + 13 | 1     | SEAL COVER                                | U-137-1       | 43   | 1    | METER SHIELD                 | U-247         |
| + 14 | 2     | SCREW, 10-24 X 3/16 LG                    | N-128         | + 44 | 1    | INLET ASSEMBLY               | SEE CHART III |
| + 15 | 2     | O-RING                                    | OV-11-114     | + 45 | 1    | INLET FILTER ASSEMBLY        | BM-1276       |
| + 16 | 1     | O-RING                                    | OV-11-332     | 46   | 1    | HEATER                       | SEE CHART II  |
| 17   | 1     | FLOW TUBE ASSEMBLY                        | A-321         | 47   | 1    | TOP FLOAT STOP               | SEE CHART I   |
| 18   | 1     | FRONT PLATE                               | U-1421        | 48   | 1    | BODY PLATE                   | T-1163-1      |
| 19   | 8     | SCREW, 10-24 X 1/2 LG                     | N-138         | 49   | 2    | BOLT, HEX 3/8-16 X 1 LG      | N-139         |
| 20   | 2     | SCREW, 6-32 X 1/4 LG                      | N-302         | 50   | 1    | LEAD GASKET (SEE NOTE 6)     | SEE CHART III |
| + 21 | 1     | O-RING                                    | OV-11-028     | 51   | 1    | 3/8 TUBING CONNECTOR(VENT)   | F-100         |
| + 22 | 1     | O-RING                                    | OV-11-112     | 52   | 1    | 5/8 TUBING CONNECTOR(VACUUM) | F-110         |
| + 23 | 1     | TOP METER GASKET                          | G-116         | + 53 | 1    | O-RING                       | OV-11-113     |
| 24   | 1     | INLET CAPSULE ASSEMBLY (SEE P/L 100.7040) | BM-4869       | 54   | 2    | SCREW/BOLT                   | SEE CHART III |
| 25   | 1     | YOKE ASSEMBLY (SEE NOTE 3)                | SEE CHART III |      |      |                              |               |
| 26   | 2     | SCREW, 1/4-20 X 2-3/4 LG                  | N-125         |      |      |                              |               |
| 27   | 6     | SCREW, 1/4-20 X 1-3/4 LG                  | N-124         |      |      |                              |               |
| 28   | 1     | REPLACEMENT FILTER (SEE NOTE 5)           | BM-1023       |      |      |                              |               |
| 29   | 1     | BOTTOM FLOAT STOP                         | SEE CHART I   |      |      |                              |               |
| 30   | 1     | BONNET PLUG                               | U-438         |      |      |                              |               |

P/L=PARTS LIST

CHART I

| ITEM NO. | CAPACITY IN PPD (KG/H) |          |           |           |          |
|----------|------------------------|----------|-----------|-----------|----------|
|          | 25 (0.5)               | 50 (1.0) | 100 (2.0) | 200 (4.0) | 500 (10) |
| 3        | A-129-2                | A-129-3  | A-129-5   | A-129-6   | BM-1165  |
| 29       | W/KEY 3                | W/KEY 3  | W/KEY 3   | W/KEY 3   | U-303    |
| 39       | M-128-1                | M-128-1  | M-126     | M-126     | N/R      |
| 40       | M-129-1                | M-129-1  | M-127     | M-127     | N/R      |
| 41       | G-119                  | G-119    | G-100-3   | G-100-3   | N/R      |
| 42       | G-119                  | G-119    | G-118     | G-118     | N/R      |
| 47       | W/KEY 3                | W/KEY 3  | W/KEY 3   | W/KEY 3   | U-304    |

CHART II

| ITEM NO. | VOLTAGE            |                    |
|----------|--------------------|--------------------|
|          | 120 VAC<br>25 WATT | 240 VAC<br>25 WATT |
| 46       | R-111              | R-260              |

CHART III

| ITEM NO. | CONNECTIONS                |                 |         |        |
|----------|----------------------------|-----------------|---------|--------|
|          | U.S. UNIVERSAL (LEFT HAND) | U.S. RIGHT HAND | JAPAN   | SAFE T |
| 25       | A-1608                     | A-128           | A-825   | A-1608 |
| 44       | A-1610                     | A-738-R         | BM-1150 | 13700  |
| 50       | G-111                      | G-111           | G-120   | G-111  |
| 54       | N-381                      | N-130           | N-130   | N-381  |
|          | SEE NOTE 3                 |                 |         |        |

CHART IV

| ITEM NO. | WITH LOSS OF GAS SWITCH | WITHOUT LOSS OF GAS SWITCH |
|----------|-------------------------|----------------------------|
| 1        | SEE P/L 100.7025        | A-256                      |

### NOTES:

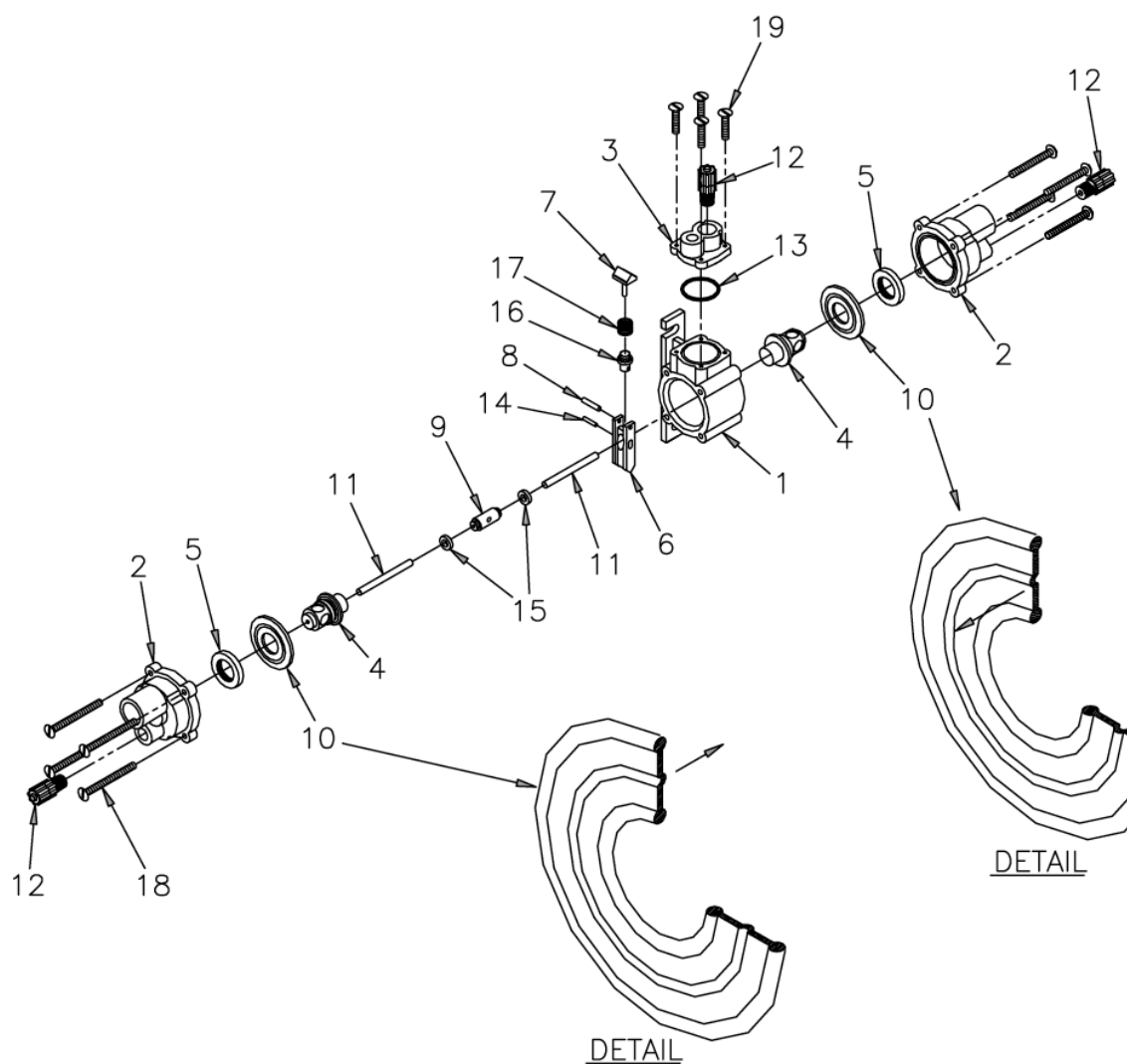
- (+) INDICATE PARTS INCLUDED IN MAINTENANCE KITS. ADDITIONAL PARTS AND QUANTITIES SHOULD BE CONSIDERED WHERE THE EQUIPMENT IS USED TO ITS FULLEST CAPABILITY OR WHEN LOCATED IN AN AREA REMOTE FROM CONVENIENT SERVICE.

TO ORDER A PREVENTIVE MAINTENANCE KIT, PARTS INDICATED BY (+) ORDER:  
500PPD(10KG/H) -----13092-1  
200PPD(4KG/H); AND LESS -----13092-2

- WHEN ORDERING PARTS, SPECIFY GAS FEEDER CAPACITY, MODEL NUMBER, AND SERIAL NUMBER.
- ITEMS 25 YOKE ASSEMBLY AND SCREWS/BOLTS ARE INCLUDED IN ITEM 44 INLET ASSEMBLY.
- ITEM 36 O-RING IS INCLUDED IN ITEM 45 INLET FILTER ASSEMBLY.
- ITEM 7 O-RING AND ITEM 28 FILTER INCLUDED IN ITEM 24 INLET ASSEMBLY.
- TO ORDER TWELVE (12) GASKETS SPECIFY THE FOLLOWING:  
FOR G-111 SPECIFY BM-918  
FOR G-120 SPECIFY BM-919
- TO ORDER COMPLETE TON YOKE ASSEMBLY INCLUDING INLET CAPSULE, SPECIFY THE FOLLOWING:  
FOR RIGHT HAND, 120 VAC, 25 WATT HEATER: SPECIFY BM-125-R-1  
FOR LEFT HAND, 120 VAC, 25 WATT HEATER: SPECIFY BM-125-L-1



## Desmontaje Módulo de cambio Automático 500 PPD:



**E4**

Datos de Utilidad



## Lista de Partes Módulo cambio Automático 500 PPD:

| KEY NO. | QTY | DESCRIPTION                              | CHLORINE  | SULFUR DIOXIDE | AMMONIA   |
|---------|-----|------------------------------------------|-----------|----------------|-----------|
| 1       | 1   | CENTER BODY                              | U-808     | U-808          | U-808     |
| 2       | 2   | END BODY FLANGE                          | SEE CHART | SEE CHART      | SEE CHART |
| 3       | 1   | TOGGLE CAP                               | SEE CHART | SEE CHART      | SEE CHART |
| 4       | 2   | DIAPHRAGM BOLT                           | U-627     | U-627-1        | U-627     |
| 5       | 2   | DIAPHRAGM NUT                            | U-1683    | U-917-1        | U-1683    |
| 6       | 1   | TOGGLE SPINDLE                           | U-751     | U-751          | U-751     |
| 7       | 1   | SPRING PIVOT                             | A-277     | A-277          | A-277-1   |
| 8       | 1   | PIN                                      | W-176     | W-176          | W-176-1   |
| 9       | 1   | VALVE STUD                               | U-628     | U-628          | U-628     |
| + 10    | 2   | DIAPHRAGM                                | D-104     | D-104          | D-104-2   |
| 11      | 2   | GUIDE PIN                                | W-196     | W-196          | W-196-1   |
| 12      | 3   | TUBING CONNECTOR                         | SEE CHART | SEE CHART      | SEE CHART |
| + 13    | 1   | O-RING                                   | OV-11-028 | OV-11-028      | OA-11-028 |
| 14      | 1   | TOGGLE PIN                               | W-168     | W-168          | W-168-1   |
| + 15    | 2   | O-RING                                   | OV-11-203 | OV-11-203      | OA-11-203 |
| 16      | 1   | PIN PIVOT                                | U-513     | U-513          | U-513     |
| 17      | 1   | SPRING                                   | S-125     | S-125          | S-125     |
| 18      | 8   | 1/4-20 X 3/4 INCH LG<br>END FLANGE SCREW | N-189     | N-189          | N-189     |
| 19      | 4   | 10-24 X 1/2 INCH LG<br>TOGGLE CAP SCREW  | N-138     | N-138          | N-138     |

| CAPACITY<br>IN PPD (KG/H) |                                | KEY NO. |       |                      |                   |
|---------------------------|--------------------------------|---------|-------|----------------------|-------------------|
| AMMONIA                   | CHLORINE/<br>SULFUR<br>DIOXIDE | 2       | 3     | 12                   |                   |
|                           |                                |         |       | CHLORINE/<br>AMMONIA | SULFUR<br>DIOXIDE |
| 50<br>(1)                 | 100<br>(2)                     | U-809   | U-810 | F-100                | F-100-1           |
| 100<br>(2)                | 200<br>(4)                     | U-809   | U-810 | F-106                | F-106-1           |
| 250<br>(5)                | 500<br>(10)                    | U-811   | U-812 | F-116-1              | F-116-1           |

### NOTES:

- (+) INDICATE PARTS INCLUDED IN MAINTENANCE KITS.  
ADDITIONAL PARTS AND QUANTITIES SHOULD BE CONSIDERED WHERE THE EQUIPMENT IS USED TO ITS FULLEST CAPABILITY OR WHERE LOCATED IN AN AREA REMOTE FROM CONVENIENT SERVICE.

TO ORDER A PREVENTIVE MAINTENANCE KIT, PARTS INDICATED BY (+) ORDER:

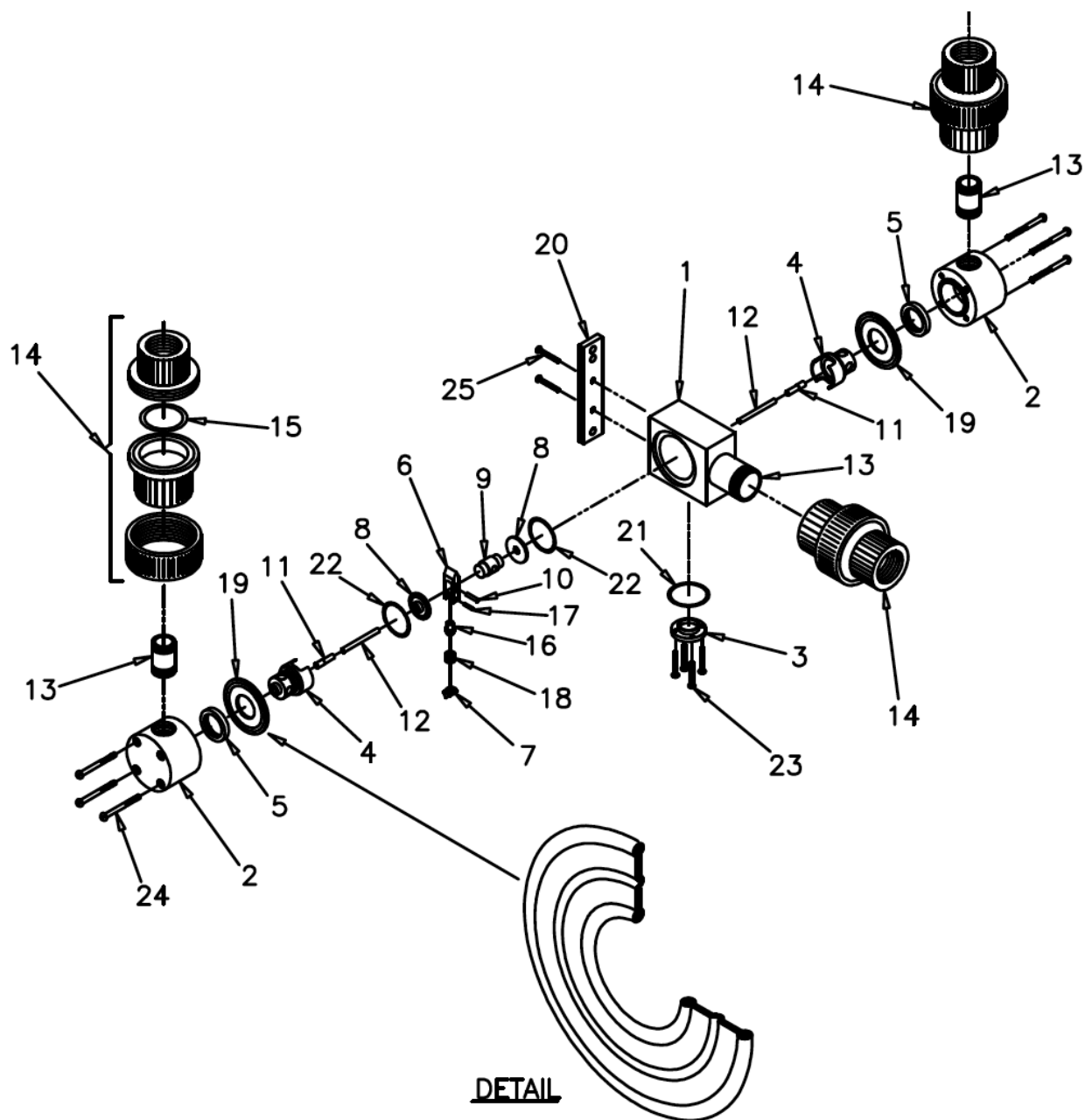
CHLORINE OR SULFUR DIOXIDE-----14428  
AMMONIA-----14429

- WHEN ORDERING PARTS, SPECIFY THE GAS, FEEDER CAPACITY, SERIAL NUMBER, AND MODEL NUMBER.

**E4**



## Desmontaje Módulo cambio Automático 2000 PPD:





### Lista de Partes Módulo cambio Automático 2000 PPD:

| KEY NO. | QTY. | DESCRIPTION                         | PART NO.                       |           |
|---------|------|-------------------------------------|--------------------------------|-----------|
|         |      |                                     | CHLORINE AND<br>SULFUR DIOXIDE | AMMONIA   |
| 1       | 1    | CENTER BODY ASSEMBLY                | A-255                          | A-255     |
| 2       | 2    | BODY FLANGE                         | U-483                          | U-483     |
| 3       | 1    | TOGGLE CAP                          | U-419-1                        | U-419-1   |
| 4       | 2    | DIAPHRAGM BOLT                      | U-487                          | U-487     |
| 5       | 2    | DIAPHRAGM NUT                       | U-917-1                        | U-917-1   |
| 6       | 1    | TOGGLE SPINDLE                      | U-486                          | U-486     |
| 7       | 1    | SPRING PIVOT ASSEMBLY               | A-277                          | A-277-1   |
| 8       | 2    | VALVE                               | U-1411                         | U-1411    |
| 9       | 1    | VALVE STUD                          | U-1413                         | U-1413    |
| 10      | 1    | TOGGLE PIN                          | W-168                          | W-168-1   |
| 11      | 2    | GUID SLEEVE                         | W-170                          | W-170-1   |
| 12      | 2    | GUIDE PIN                           | W-169                          | W-169-1   |
| 13      | 3    | 1 INCH NPT X 2 INCH LG NIPPLE, PVC  | R-150                          | R-150     |
| 14      | 3    | 1 INCH UNION ASSEMBLY               | BM-4475                        | BM-4476   |
| + 15    | 3    | O-RING                              |                                |           |
|         |      | PLASTILINE UNION                    | OV-11-222                      | OA-11-222 |
|         |      | GSR UNION                           | OV-11-219                      | OA-11-219 |
|         |      | SPEARS UNION                        | OV-11-126                      | OA-11-126 |
| 16      | 1    | PIN PIVOT                           | U-513                          | U-513     |
| 17      | 1    | PIN                                 | W-176                          | W-176-1   |
| 18      | 1    | SPRING                              | S-125                          | S-125     |
| + 19    | 2    | DIAPHRAGM                           | D-104                          | D-104-2   |
| 20      | 1    | MOUNTING BRACKET                    | U-396                          | U-396     |
| + 21    | 1    | O-RING                              | OV-11-025                      | OA-11-025 |
| + 22    | 2    | O-RING                              | OV-11-212                      | OA-11-212 |
| 23      | 4    | 10-24 X 1/2 INCH LG FILL. HD SCREW  | N-138                          | N-138     |
| 24      | 8    | 1/4-20 X 2-3/4 INCH LG RD HD SCREW  | N-125                          | N-125     |
| 25      | 2    | 1/4-20 X 1-1/4 INCH LG FLT HD SCREW | N-155                          | N-155     |

#### NOTES:

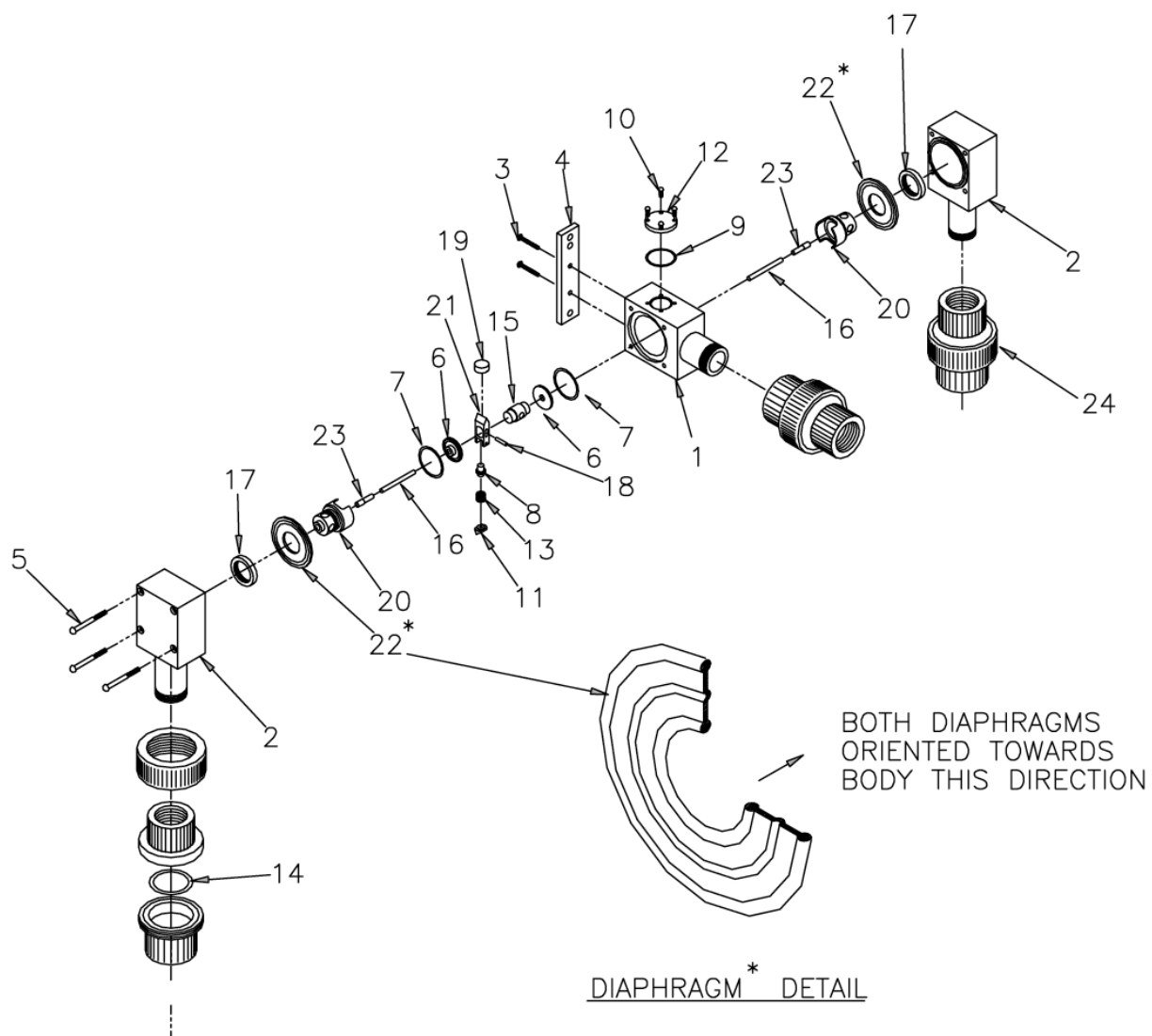
1. (+) INDICATES RECOMMENDED AS MINIMUM SPARE PARTS. QUANTITY RECOMMENDATIONS FOR AVERAGE USE AND CONDITIONS. ADDITIONAL PARTS AND QUANTITIES SHOULD BE CONSIDERED WHERE THE EQUIPMENT IS USED TO ITS FULLEST CAPABILITY OR WHERE LOCATED IN AN AREA REMOTE FROM CONVENIENT SERVICE.
2. WHEN ORDERING PARTS, SPECIFY GAS, FEEDER CAPACITY, MODEL NUMBER AND SERIAL NUMBER.

E4

Datos de Utilidad



## Desmontaje Módulo cambio Automático 4000 PPD:



E4

Datos de Utilidad



## Lista de Partes Módulo cambio Automático 4000 PPD:

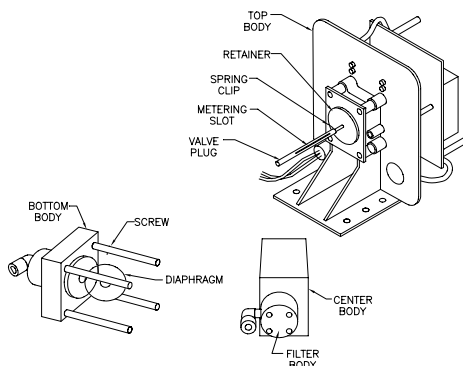
| ITEM | QTY | DESCRIPTION                      | PART NO.  |           |
|------|-----|----------------------------------|-----------|-----------|
|      |     |                                  | CL2 & SO2 | AMMONIA   |
| 1    | 1   | CENTER BODY                      | A-1397    | A-1397    |
| 2    | 2   | BODY FLANGE ASSEMBLY             | 12820     | 12820     |
| 3    | 2   | SCREW, 1/4-20 X 1-1/4 LG FL HD   | N-155     | N-155     |
| 4    | 1   | MOUNTING BRACKET                 | U-396     | U-396     |
| 5    | 8   | SCREW, 1/4-20 X 2-3/4 LG RD HD   | N-125     | N-125     |
| 6    | 2   | VALVE                            | U-1840    | U-1840    |
| + 7  | 2   | O-RING                           | OV-11-217 | OA-11-217 |
| * 8  | 1   | PIN PIVOT                        | 18013     | 18013     |
| + 9  | 1   | O-RING                           | OV-11-025 | OA-11-025 |
| 10   | 4   | SCREW, 10-24 X 1/2 LG FILL HD    | N-138     | N-138     |
| * 11 | 1   | SPRING PIVOT ASSEMBLY            | 14256     | 14256     |
| 12   | 1   | TOGGLE CAP                       | U-419-1   | U-419-1   |
| * 13 | 1   | SPRING                           | 17749     | 17749     |
| + 14 | 3   | O-RING (SPEARS)                  | OV-11-226 | OA-11-226 |
| 15   | 1   | VALVE STUD                       | U-1413    | U-1413    |
| 16   | 2   | GUIDE PIN                        | W-169     | W-169-1   |
| 17   | 2   | DIAPHRAGM NUT                    | E-163-1   | E-163-1   |
| 18   | 1   | TOGGLE PIN                       | W-168     | W-168-1   |
| 19   | 1   | TOGGLE PLATE                     | U-1854    | U-1854    |
| 20   | 2   | DIAPHRAGM BOLT                   | U-1839    | U-1839    |
| * 21 | 1   | TOGGLE SPINDLE                   | 19002     | 19002     |
| + 22 | 2   | DIAPHRAGM                        | D-116     | D-116-1   |
| 23   | 2   | GUIDE SLEEVE                     | W-170     | W-170-1   |
| 24   | 3   | 1-1/2 INCH UNION ASS'Y. (SPEARS) | BM-4298   | BM-4299   |

### NOTES:

1. (+) INDICATES RECOMMENDED AS MINIMUM SPARE PARTS. QUANTITY RECOMMENDATIONS ARE FOR AVERAGE USE AND CONDITIONS. ADDITIONAL PARTS AND QUANTITIES SHOULD BE CONSIDERED WHERE THE EQUIPMENT IS USED TO ITS FULLEST CAPABILITY OR WHERE LOCATED IN AN AREA REMOTE FROM CONVENIENT SERVICE.
2. WHEN ORDERING PARTS, SPECIFY GAS, FEEDER CAPACITY, MODEL NUMBER, AND SERIAL NUMBER.
3. (\*) AVAILABLE AS KIT 19126

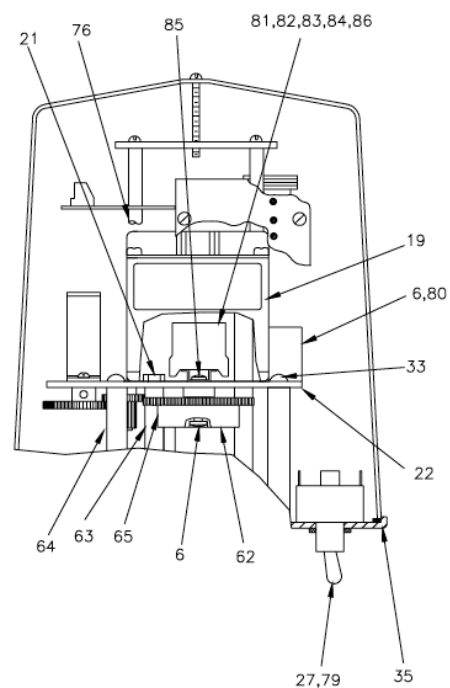
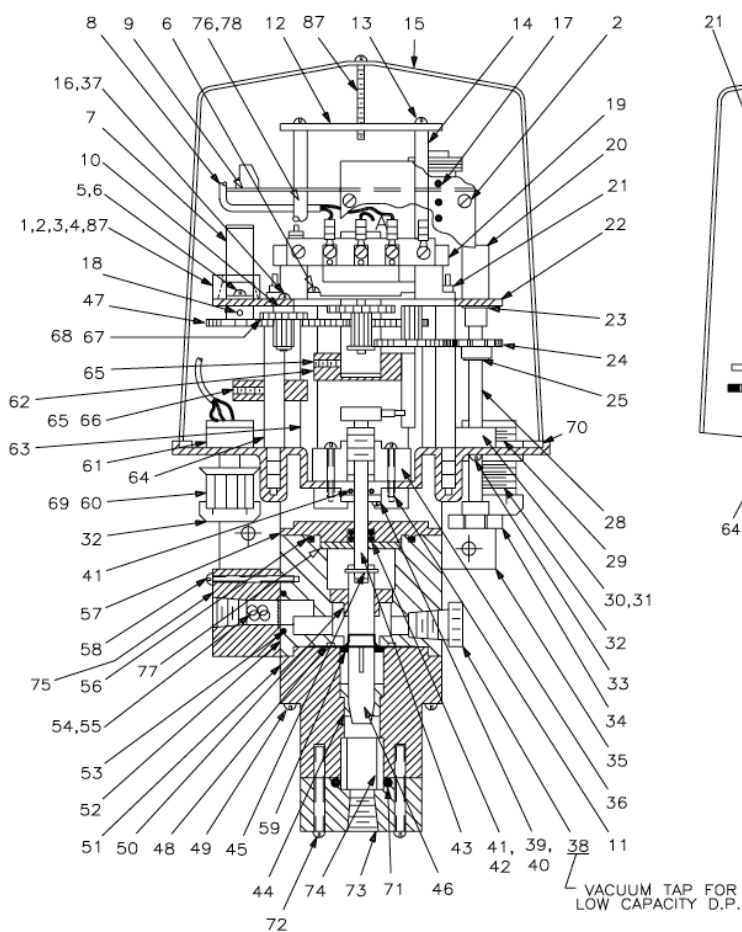


## Desmontaje Válvula de Control Automática :

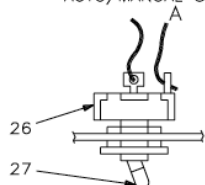


OLD MOTOR

NEW MOTOR



AUTO/MANUAL SWITCH



E4

Datos de Utilidad



## Lista de partes Válvula Control Automática :

| ITEM NO. | QTY         | DESCRIPTION                    | PART NO.     | CL2/SO2      | NH3          | ITEM NO. | QTY | DESCRIPTION                     | PART NO.      | CL2/SO2      | NH3          |
|----------|-------------|--------------------------------|--------------|--------------|--------------|----------|-----|---------------------------------|---------------|--------------|--------------|
| 1        | 1           | TERMINAL STRIP                 | SEE CHART I  | SEE CHART I  | SEE CHART I  | 46       | 1   | METER PLUG                      | SEE CHART III | SEE CHART IV | SEE CHART IV |
| 2        | 1           | 6-32 X 1/4 LG TRUSS HD SCREW   | N-127        | N-127        | N-127        | 47       | 1   | GEAR                            | A-700         | A-700        | A-700        |
| 3        | 2           | 6-32 X 5/8 LG BND HD SCREW     | SEE CHART I  | SEE CHART I  | SEE CHART I  | + 48     | 1   | DIAPHRAGM                       | D-115         | D-115        | D-115        |
| 4        | 2           | MARKER STRIP                   | SEE CHART I  | SEE CHART I  | SEE CHART I  | 49       | 4   | 1/4-20 X 4 LG RD HD SCREW       | N-180         | N-180        | N-180        |
| 5        | 2           | POTENTIOMETER CLAMP            | T-316        | T-316        | T-316        | 50       | 1   | VALVE GUIDE-TOP                 | U-586         | U-586        | U-586        |
| 6        | SEE CHART V | 6-32 X 3/8 LG BD HD SCREW      | N-144        | N-144        | N-144        | 51       | 1   | BOTTOM BODY                     | SEE CHART III | SEE CHART IV | SEE CHART IV |
| 7        | 1           | FEEDBACK POTENTIOMETER         | SEE CHART I  | SEE CHART I  | SEE CHART I  | 52       | 1   | CENTER BODY                     | U-1317-1      | U-1317-1     | U-1317-1     |
| 8        | 1           | MOTOR CONTROL CABLE            | 12448        | 12448        | 12448        | + 53     | 1   | O-RING                          | OV-11-114     | OA-11-114    | OA-11-114    |
| 9        | 1           | CIRCUIT BOARD                  | SEE CHART II | SEE CHART II | SEE CHART II | + 54     | 1   | FLOSS                           | BM-1023       | BM-1023      | BM-1023      |
| 10       | 1           | GEAR STUD                      | T-315        | T-315        | T-315        | + 55     | 2   | FILTER SCREEN                   | W-101         | W-101        | W-101        |
| 11       | 3           | 10-24 X 1 LG FILL HD SCREW     | N-126        | N-126        | N-126        | + 56     | 1   | O-RING                          | OV-11-129     | OA-11-129    | OA-11-129    |
| 12       | 1           | COVER MOUNT                    | T-776        | T-776        | T-776        | 57       | 1   | SPACER                          | U-1059-1      | U-1059-1     | U-1059-1     |
| 13       | 2           | 10-32 X 2 LG RD HD SCREW       | N-319        | N-319        | N-319        | 58       | 4   | 10-24 X 1-3/4 LG RD HD SCREW    | N-197         | N-197        | N-197        |
| 14       | 2           | SPACER TUBE                    | T-777        | T-777        | T-777        | 59       | 1   | SUPPORT DISC                    | 12419         | 12419        | 12419        |
| 15       | 1           | COVER                          | U-1574       | U-1574       | U-1574       | 60       | 1   | KNOB                            | R-2510        | R-2510       | R-2510       |
| 16       | 1           | 6-32 X 1/8 LG RD HD SCREW      | N-196        | N-196        | N-196        | 61       | 1   | POTENTIOMETER ASSEMBLY          | A-1068        | A-1068       | A-1068       |
| 17       | 1           | BAR GRAPH                      | R-2526       | R-2526       | R-2526       | 62       | 1   | DRIVER ASSEMBLY                 | SEE CHART V   | SEE CHART V  | SEE CHART V  |
| 18       | 1           | 4-40 X 1/4 LG SOCKET SET SCREW | N-193        | N-193        | N-193        | 63       | 2   | REAR POST                       | SEE CHART V   | SEE CHART V  | SEE CHART V  |
| 19       | 1           | MOTOR ASSEMBLY                 | SEE CHART V  | SEE CHART V  | SEE CHART V  | 64       | 2   | FRONT POST                      | SEE CHART V   | SEE CHART V  | SEE CHART V  |
| 20       | 1           | BEARING GUIDE                  | U-1416       | U-1416       | U-1416       | 65       | 4   | 8-32 X 3/16 LG SOCKET SET SCREW | N-141         | N-141        | N-141        |
| 21       | SEE CHART V | 10-32 HEX NUT                  | N-179        | N-179        | N-179        | 66       | 2   | STOP                            | T-281         | T-281        | T-281        |
| 22       | 1           | MOUNTING PLATE                 | SEE CHART V  | SEE CHART V  | SEE CHART V  | 67       | 1   | GEAR                            | U-888         | U-888        | U-888        |
| 23       | 1           | RETAINING RING                 | SEE CHART V  | SEE CHART V  | SEE CHART V  | 68       | 1   | RETAINING RING                  | R-551         | R-551        | R-551        |
| 24       | 1           | GEAR                           | SEE CHART V  | SEE CHART V  | SEE CHART V  | 69       | 1   | LOCK NUT, POTENTIOMETER         | R-2659        | R-2659       | R-2659       |
| 25       | 2           | RETAINING RING                 | SEE CHART V  | SEE CHART V  | SEE CHART V  | 70       | 1   | GASKET                          | C-145         | C-145        | C-145        |
| 26       | 1           | SWITCH ASSEMBLY                | SEE CHART V  | SEE CHART V  | SEE CHART V  | 71       | 1   | O-RING                          | SEE CHART III | SEE CHART IV | SEE CHART IV |
| 27       | SEE CHART V | SWITCH BOOT                    | R-1401       | R-1401       | R-1401       | 72       | 2   | 10-24 X 1-1/4 LG RD HD SCREW    | SEE CHART III | SEE CHART IV | SEE CHART IV |
| 28       | 1           | SHAFT                          | SEE CHART V  | SEE CHART V  | SEE CHART V  | 73       | 1   | ADAPTOR                         | SEE CHART III | SEE CHART IV | SEE CHART IV |
| 29       | 2           | LOCKNUT                        | R-736        | R-736        | R-736        | 74       | 1   | TUBE                            | SEE CHART III | SEE CHART IV | SEE CHART IV |
| 30       | 1           | BEARING BLOCK                  | SEE CHART V  | SEE CHART V  | SEE CHART V  | 75       | 1   | FILTER BODY                     | U-1503-1      | U-1503-1     | U-1503-1     |
| + 31     | SEE CHART V | O-RING                         | OV-11-010    | OA-11-010    | OA-11-010    | 76       | 2   | MOUNTING STUD                   | SEE CHART V   | SEE CHART V  | SEE CHART V  |
| 32       | 2           | CONNECTOR                      | R-1400       | R-1400       | R-1400       | 77       | 1   | RETAINER                        | U-589-1       | U-589-1      | U-589-1      |
| 33       | SEE CHART V | 8-32 X 3/8 LG RD HD SCREW      | N-169        | N-169        | N-169        | 78       | 1   | 10-32 X 1/2 LG RD HD SCREW      | N-260         | N-260        | N-260        |
| 34       | 1           | KNOB                           | SEE CHART V  | SEE CHART V  | SEE CHART V  | 79       | 1   | SWITCH, INCREASE/DECREASE       | SEE CHART V   | SEE CHART V  | SEE CHART V  |
| 35       | 1           | TOP BODY                       | SEE CHART V  | SEE CHART V  | SEE CHART V  | 80       | 1   | CAPACITOR ASSEMBLY              | SEE CHART V   | SEE CHART V  | SEE CHART V  |
| 36       | 1           | STEM NUT                       | T-276        | T-276        | T-276        | 81       | 1   | DIN RAIL, 1.6 INCH LG           | SEE CHART V   | SEE CHART V  | SEE CHART V  |
| 37       | 1           | LOCK WASHER                    | N-223        | N-223        | N-223        | 82       | 1   | TERMINAL, GROUND                | SEE CHART V   | SEE CHART V  | SEE CHART V  |
| 38       | 1           | PIPE PLUG                      | F-108        | F-108        | F-108        | 83       | 4   | TERMINAL                        | SEE CHART V   | SEE CHART V  | SEE CHART V  |
| 39       | 1           | O-RING RETAINER                | U-1061       | U-1061       | U-1061       | 84       | 1   | END COVER                       | SEE CHART V   | SEE CHART V  | SEE CHART V  |
| 40       | 2           | 6-32 X 1/2 LG SCREW            | 12421        | 12421        | 12421        | 85       | 2   | SCREW, 6-32 X 1/4 LG            | SEE CHART V   | SEE CHART V  | SEE CHART V  |
| + 41     | 3           | O-RING                         | OV-11-008    | OA-11-008    | OA-11-008    | 86       | 1   | MARKER STRIP, TERMINALS         | SEE CHART V   | SEE CHART V  | SEE CHART V  |
| + 42     | 1           | SPACER                         | U-504        | U-504        | U-504        | 87       | 1   | SCREW, 10-24 X 1-1/4 FILL HD    | N-264         | N-264        | N-264        |
| 43       | 1           | FOLLOWER ASSEMBLY              | A-1077       | A-1078       | A-1078       | N/S      | 1   | HEX KEY, 5/64 INCH              | R-4186        | R-4186       | R-4186       |
| 44       | 1           | VALVE GUIDE-BOTTOM             | U-588        | U-588        | U-588        | N/S      | 1   | HEX KEY, .050                   | R-4194        | R-4194       | R-4194       |
| + 45     | 1           | SPRING                         | S-113        | S-113        | S-113        | N/S      | 1   | BARGRAPH PCB INSULATION         | 19149         | 19149        | 19149        |

N/S = NOT SHOWN  
N/R = NOT REQUIRED  
C/F = CONSULT FACTORY

CHART I

| ITEM NO. | DOUBLE FEEDBACK POTENTIOMETER | SINGLE FEEDBACK POTENTIOMETER |
|----------|-------------------------------|-------------------------------|
| 1        | R-383                         | N/R                           |
| 3        | N-171                         | N/R                           |
| 4        | R-419                         | N/R                           |
| 7        | A-1080                        | A-1079                        |

CHART II (SEE NOTE 3)

| ITEM NO. | INPUT  | NEW MOTOR DPDT AUTO/MANUAL SWITCH |         | NEW MOTOR SPST AUTO/MANUAL SWITCH |         | OLD      |          |
|----------|--------|-----------------------------------|---------|-----------------------------------|---------|----------|----------|
|          |        | 120 VAC                           | 240 VAC | 120 VAC                           | 240 VAC | 120 VAC  | 240 VAC  |
| 9        | 4-20mA | 18736                             | 18740   | 12554                             | 12557   | A-1532-1 | A-1533-1 |
|          | 1-5V   | 18737                             | 18741   | 12555                             | 12558   | A-1532-2 | A-1533-2 |
|          | 20-4mA | 18738                             | 18742   | 12553                             | 12556   | A-1421   | A-1422   |
|          | 0-20mA | 18739                             | 18743   | 12617                             | 12618   | -----    | -----    |

SEE NOTE 5

CHART IV - AMMONIA

| ITEM NO. | 50 PPD 1.0 KG/H OR LESS | 125 PPD 2.5 KG/H | 250 PPD 5 KG/H |
|----------|-------------------------|------------------|----------------|
| 46       | 17671                   | 17672            | W-202-1        |
| 51       | U-584-1                 | U-584-1          | U-648-1        |
| 71       | N/R                     | N/R              | OA-11-114      |
| 72       | N/R                     | N/R              | N-151          |
| 73       | N/R                     | N/R              | U-1586-1       |
| 74       | N/R                     | N/R              | U-1587         |

CHART III - CHLORINE AND SULFUR DIOXIDE

| ITEM NO. | 100 PPD 2.0 KG/H OR LESS | 250 PPD 5 KG/H | 500 PPD 10 KG/H |
|----------|--------------------------|----------------|-----------------|
| 46       | W-193-1                  | W-193-2        | W-202           |
|          |                          | 17672          | W-202-1         |
| 51       | U-584-1                  | U-584-1        | U-648-1         |
| 71       | N/R                      | N/R            | OV-11-114       |
| 72       | N/R                      | N/R            | N-151           |
| 73       | N/R                      | N/R            | U-1586-1        |
| 74       | N/R                      | N/R            | U-1587          |

MOTOR REPLACEMENT KIT CHART

| INPUT  | CHLORINE & SULFUR DIOXIDE |         | AMMONIA |         |
|--------|---------------------------|---------|---------|---------|
|        | 120 VAC                   | 240 VAC | 120 VAC | 240 VAC |
| 4-20mA | 15407                     | 15407-4 | 15972   | 15972-4 |
| 1-5V   | 15407-1                   | 15407-5 | 15972-1 | 15972-5 |
| 20-4mA | 15407-2                   | 15407-6 | 15972-2 | 15972-6 |
| 0-20mA | 15407-3                   | 15407-7 | 15972-3 | 15972-7 |

CHART V

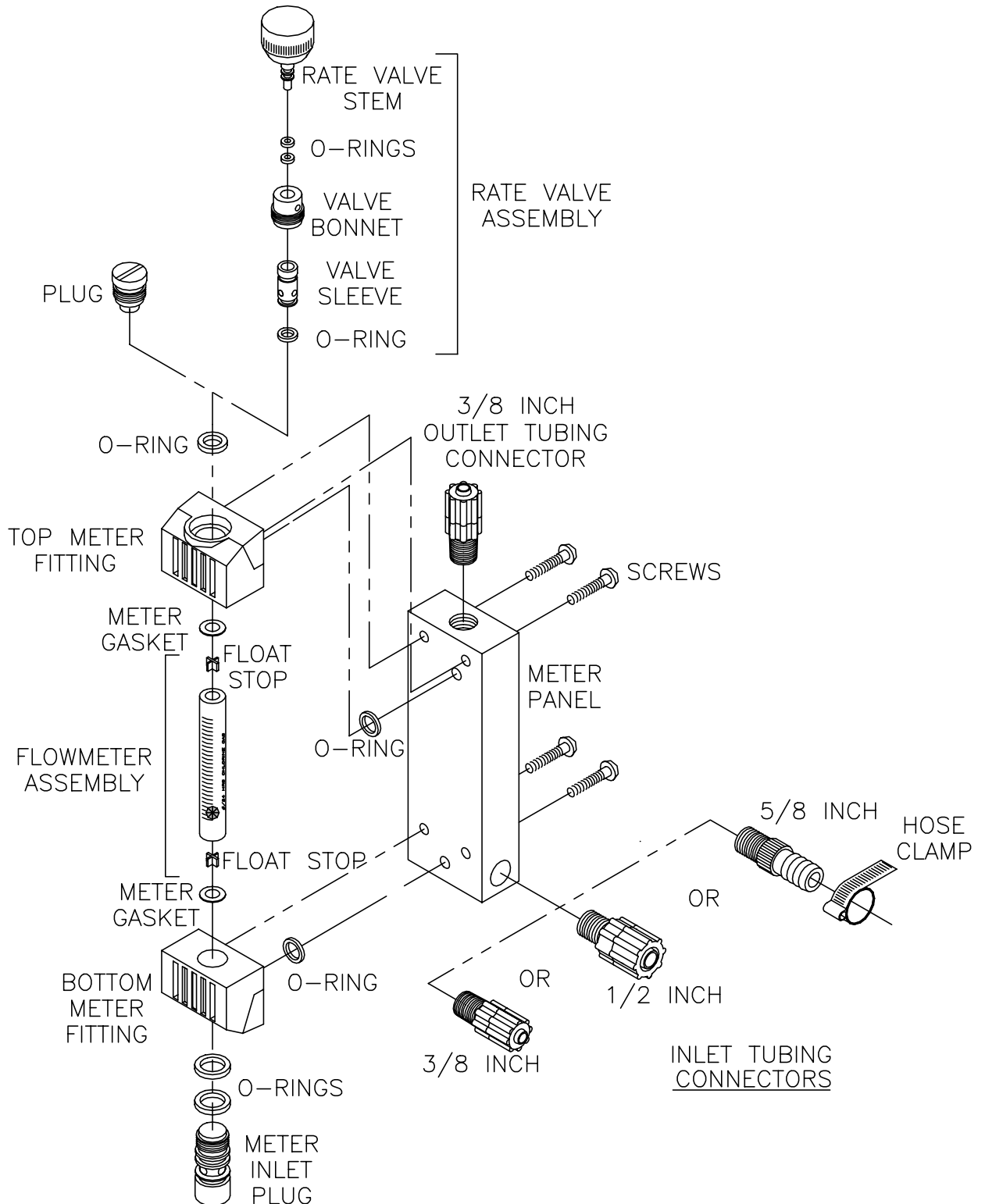
| ITEM | OLD MOTOR          | NEW MOTOR | ITEM | OLD MOTOR | NEW MOTOR | ITEM | OLD MOTOR | NEW MOTOR                        |
|------|--------------------|-----------|------|-----------|-----------|------|-----------|----------------------------------|
| 6    | 3                  | 5         | 30   | U-1417    | N/R       | 79   | N/R       | CL2 & SO2 - 15190<br>NH3 - 15403 |
| 19   | A-447 (SEE NOTE 4) | 15116     | 31   | 1         | N/R       | 80   | N/R       | 15175                            |
| 20   | U-1416             | N/R       | 33   | 2         | 4         | 81   | N/R       | 15174                            |
| 21   | 3                  | 1         | 34   | R-2194    | N/R       | 82   | N/R       | R-6591                           |
| 22   | T-706              | 15109     | 35   | U-1418-1  | 15207     | 83   | N/R       | R-6592                           |
| 23   | R-2192             | N/R       | 40   | A-747     | N/R       | 84   | N/R       | R-6595                           |
| 24   | R-2193             | N/R       | 62   | A-1076    | 15110     | 85   | N/R       | N-127                            |
| 25   | R-2191             | N/R       | 63   | T-302     | 15173     | 86   | N/R       | 15216                            |
| 27   | 1                  | 2         | 64   | T-303     | 15157     | 26   | 12447     | 12447                            |
| 28   | T-707              | N/R       | 76   | T-530     | 15172     |      |           | SEE NOTE 5                       |

### NOTES:

- (+) INDICATES RECOMMENDED AS MINIMUM SPARE PARTS. QUANTITY RECOMMENDATIONS ARE FOR AVERAGE USE AND CONDITIONS. ADDITIONAL PARTS AND QUANTITIES SHOULD BE CONSIDERED WHERE EQUIPMENT IS USED TO ITS FULLEST CAPABILITY OR WHERE LOCATED IN AN AREA REMOTE FROM CONVENIENT SERVICE. TO ORDER ALL RECOMMENDED SPARE PARTS INDICATED BY (+), SPECIFY 15455 FOR CHLORINE AND SULFUR DIOXIDE OR 15974 FOR AMMONIA. TO ORDER ALL THE RECOMMENDED SPARE PARTS INDICATED BY (\*), SPECIFY INDIVIDUAL PARTS.
- WHEN ORDERING PARTS SPECIFY GAS, FEEDER CAPACITY, INPUT, MODEL NUMBER, AND SERIAL NUMBER.
- ORDER NEW NUMBERS IF VALVE HAS METALLIZED COVER, ORDER OLD NUMBERS FOR UNITS PRIOR TO 18 APRIL 1997. WIRE PER DRAWING 12612.
- A-447 IS NO LONGER AVAILABLE. ALL PARTS IN CHART V, LISTED AS "NEW MOTOR", ARE REQUIRED TO RETROFIT THE VALVE AND CAN BE PURCHASED AS KIT 15407-\* FOR CHLORINE AND SULFUR DIOXIDE OR AS KIT 15972-\* FOR AMMONIA. (SEE CHART)
- AUTO/MANUAL & INCREASE/DECREASE SWITCH SOLD AS A SET WITH INTERCONNECTING WIRE, P/N 18746.



## Desmontaje Rotámetro de Pared :

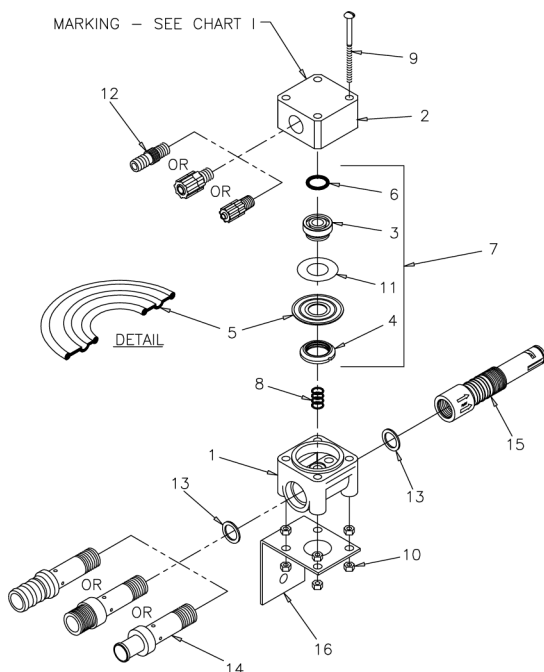


**E4**

Datos de Utilidad



## Desmontaje Ejector 100 PPD:



| ITEM | QTY. | DESCRIPTION                | PART NO.      |
|------|------|----------------------------|---------------|
| 1    | 1    | BOTTOM BODY                | E-153         |
| 2    | 1    | TOP BODY                   | U-2372        |
| 3    | 1    | DIAPHRAGM BOLT             | SEE CHART II  |
| 4    | 1    | DIAPHRAGM NUT              | SEE CHART II  |
| 5    | 1    | DIAPHRAGM                  | D-104         |
| 6    | 1    | O-RING                     | OC-11-210     |
| + 7  | 1    | DIAPHRAGM BOLT ASSEMBLY    | SEE NOTE 4    |
| 8    | 1    | SPRING                     | S-106         |
| 9    | 4    | SCREW, 5/16-18 X 4 INCH LG | N-136         |
| 10   | 8    | NUT, 5/16-18               | N-104         |
| 11   | 1    | SUPPORT DIAPHRAGM          | SEE CHART I   |
| 12   | 1    | TUBING CONNECTOR           | SEE CHART III |
| + 13 | 2    | GASKET                     | G-106         |
| # 14 | 1    | NOZZLE                     | SEE CHART IV  |
| 15   | 1    | DIFFUSER                   | U-892         |
| 16   | 1    | BRACKET                    | T-135         |

### NOTES:

- (+) INDICATE PARTS INCLUDED IN MAINTENANCE KITS. ADDITIONAL PARTS AND QUANTITIES SHOULD BE CONSIDERED WHERE EQUIPMENT IS USED TO ITS FULLEST CAPABILITY OR WHERE LOCATED IN AN AREA REMOTE FROM CONVENIENT SERVICE.  
TO ORDER A PREVENTIVE MAINTENANCE KIT, PARTS INDICATED (+), SEE CHART I
- WHEN ORDERING PARTS, SPECIFY GAS FEEDER CAPACITY, MODEL NUMBER, AND SERIAL NUMBER.
- (#) NOZZLE SIZE APPEARS ON PART (SPECIFY WHEN ORDERING).
- KEY NUMBER 7 INCLUDES KEY NUMBERS 3, 4, 5, 6, AND 11. TO ORDER COMPLETE DIAPHRAGM BOLT ASSEMBLY (KEY NUMBER 7) SEE CHART I.
- KEY NUMBER 11 (U-1415) CONSISTS OF TWO DIAPHRAGM SUPPORTS (ONE SET).

CHART I

| BACK PRESSURE AT EJECTOR     | MARKING | GAS            | KEY NUMBER |                      | KIT     |
|------------------------------|---------|----------------|------------|----------------------|---------|
|                              |         |                | 7          | 11                   |         |
| 0-20 PSIG<br>(0-1.3 BAR)     | L       | CHLORINE       | A-835-1    | D-105                | 14432-1 |
|                              |         | SULFUR DIOXIDE | BM-3572    |                      | 14432-3 |
| 20-140 PSIG<br>(1.3-9.5 BAR) | HI      | CHLORINE       | A-968      | U-1415<br>SEE NOTE 5 | 14432-2 |
|                              |         | SULFUR DIOXIDE | BM-3573    |                      | 14432-4 |

CHART II

| KEY NO. | GAS            | PART NO |
|---------|----------------|---------|
| 3       | CHLORINE       | U-236   |
|         | SULFUR DIOXIDE | U-236-1 |
| 4       | CHLORINE       | U-1683  |
|         | SULFUR DIOXIDE | U-917-1 |

CHART III

| KEY NO.        | TUBING CONNECTOR |         |         |
|----------------|------------------|---------|---------|
| 12             | 3/8"             | 1/2"    | 5/8"    |
| CHLORINE       | F-100            | F-106   | F-113-1 |
| SULFUR DIOXIDE | F-100-1          | F-106-1 | F-113-1 |

HOSE CLAMP FOR 5/8" TUBING - R-118

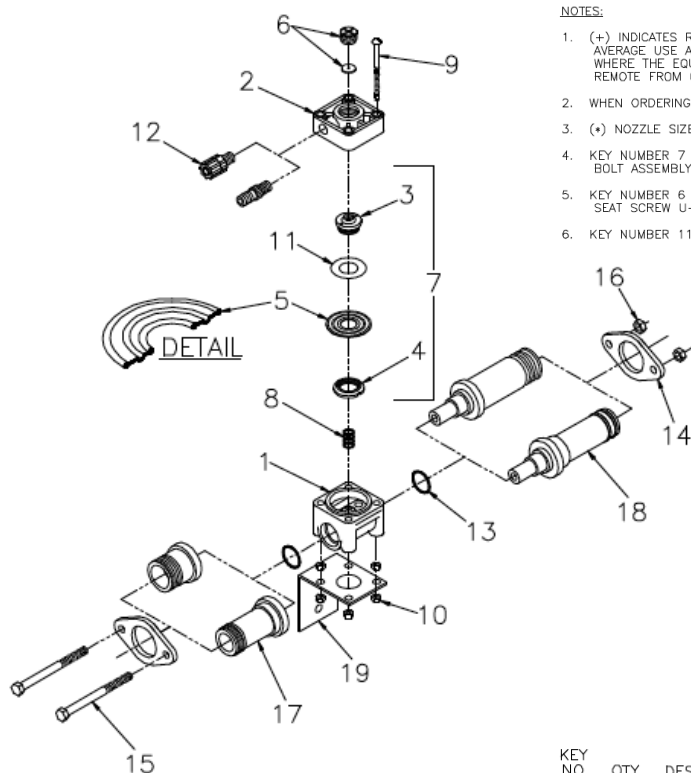
CHART IV

| KEY NO. | 3/4" NPT            | 1" I.D. HOSE        | 3/4" I.D. HOSE      |
|---------|---------------------|---------------------|---------------------|
| 14      | E-109<br>SEE NOTE 3 | E-106<br>SEE NOTE 3 | E-105<br>SEE NOTE 3 |

E4



## Desmontaje Ejector 200 PPD:



### NOTES:

1. (+) INDICATES RECOMMENDED AS MINIMUM SPARE PARTS. QUANTITY RECOMMENDATIONS ARE FOR AVERAGE USE AND CONDITIONS. ADDITIONAL PARTS AND QUANTITIES SHOULD BE CONSIDERED WHERE THE EQUIPMENT IS USED TO ITS FULLEST CAPABILITY OR WHERE LOCATED IN AN AREA REMOTE FROM CONVENIENT SERVICE.
2. WHEN ORDERING PARTS, SPECIFY GAS, FEEDER CAPACITY, MODEL NUMBER, AND SERIAL NUMBER.
3. (+) NOZZLE SIZE APPEARS ON PART (SPECIFY WHEN ORDERING).
4. KEY NUMBER 7 INCLUDES KEY NUMBERS 3, 4, 5, AND 11. TO ORDER COMPLETE DIAPHRAGM BOLT ASSEMBLY (KEY NUMBER 7) SEE CHART I.
5. KEY NUMBER 6 INCLUDES THE VALVE SEAT U-1755-1 (A-1232) OR U-1755-2 (A-2333) AND SEAT SCREW U-1756-1.
6. KEY NUMBER 11 (U-1415) CONSISTS OF TWO DIAPHRAGM SUPPORTS (ONE SET).

| KEY NO. | QTY | DESCRIPTION                     | PART NO.      |
|---------|-----|---------------------------------|---------------|
| 1       | 1   | BOTTOM BODY                     | E-153         |
| 2       | 1   | TOP BODY                        | U-208         |
| + 3     | 1   | DIAPHRAGM BOLT                  | SEE CHART I   |
| + 4     | 1   | DIAPHRAGM NUT                   | U-1683        |
| 5       | 1   | DIAPHRAGM                       | D-104         |
| + 6     | 1   | VALVE SEAT ASSEMBLY             | SEE CHART I   |
| 7       | 1   | DIAPHRAGM BOLT ASSEMBLY         | SEE NOTE 4    |
| 8       | 1   | SPRING                          | S-106         |
| 9       | 4   | SCREW, 5/16-18 X 3-1/2 LG RD HD | N-136         |
| 10      | 8   | NUT, 5/16-18                    | N-104         |
| + 11    | 1   | SUPPORT DIAPHRAGM               | SEE CHART I   |
| + 12    | 1   | 1/2 INCH TUBING CONNECTOR       | SEE CHART II  |
| + 13    | 2   | O-RING                          | OB-11-121     |
| 14      | 2   | FLANGE                          | T-136         |
| 15      | 2   | BOLT, 3/8-16 X 4-1/2 LG HEX HD  | N-145         |
| 16      | 2   | NUT, 3/8-16                     | N-146         |
| * 17    | 1   | NOZZLE                          | SEE CHART III |
| * 18    | 1   | THROAT                          | SEE CHART III |
| 19      | 1   | BRACKET                         | T-135         |

CHART I

| BACK PRESSURE AT EJECTOR     | MARKING | KEY NUMBER |        |         |                         |
|------------------------------|---------|------------|--------|---------|-------------------------|
|                              |         | 3          | 6      | 7       | 11                      |
| 0-20 PSIG<br>(0-1.3 BAR)     | L       | U-206      | A-1232 | A-834-1 | D-105                   |
| 20-140 PSIG<br>(1.3-9.5 BAR) | HI      | U-255-1    | A-1233 | A-967   | U-1415<br>SEE<br>NOTE 6 |

CHART II

| KEY NO. | TUBING SIZE * |         |
|---------|---------------|---------|
|         | 1/2"          | 5/8"    |
| 12      | F-106         | F-113-1 |

\*HOSE CLAMP FOR 5/8" TUBING - R-118

CHART III

| KEY NO. | 1-1/4" NPT | 1-1/2" HOSE |
|---------|------------|-------------|
| 17      | E-187      | E-190       |
| 18      | E-189      | E-188       |

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Datos de Utilidad