

**Oteco Inc. Houston, Texas**  
**2" Reset Relief Valve Maintenance**  
Issued: BH      Date: 2/7/08

Manual: **OS-130279 Rev.A**  
Revision Date: 2/7/08  
Approved: WU      Date: 2/7/08

**OTECO INC.**  
**2" RESET RELIEF VALVE**  
**2" FIG.1502 FEMALE INLET &**  
**2" FIG.1502 MALE OUTLET**  
**INSTALLATION & MAINTENANCE**  
**MANUAL**  
**PART NO. 130279**

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## 1.0 PERIODIC MAINTENANCE

### WEEKLY

1. Unseat valve by striking release button at rear of valve. Release pressure in system to 0 PSI and reset valve with reset lever.

### 6 MONTHS

1. Lubrication-Remove 1/8 plastic pipe plug located behind right load spring on bottom of bonnet. Pump grease through grease fitting until new grease comes out of 7/16 hole. Replace 1/8 plastic pipe plug.
2. Replace seals as required.

### 13 MONTHS

1. Lubrication-Clean bonnet assembly and repack with new grease.
2. Replace parts and seals as required

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## 2.0 SPARE PARTS LIST

### SEALS FOR 6 MONTHS NORMAL OPERATION

| QUANTITY | DESCRIPTION                                      | PART NO. |
|----------|--------------------------------------------------|----------|
| 1        | Cushion Ring                                     | 142130   |
| 1        | Outer Seal                                       | 142180   |
| 1        | Sub Gasket                                       | 142150   |
|          | (3 above parts, Oteco repair kit <u>143223</u> ) |          |
| 1        | Seal Union Ring                                  | 301921   |

### REPAIR PARTS FOR 12 MONTHS NORMAL OPERATION

| QUANTITY | DESCRIPTION                                             | PART NO. |
|----------|---------------------------------------------------------|----------|
| 2        | Cushion Ring                                            | 142130   |
| 2        | Outer Seal                                              | 142180   |
| 2        | Sub Gasket                                              | 142150   |
|          | (3 above parts, Oteco repair kit <u>143223</u> , Qty.2) |          |
| 1        | Outer Retainer                                          | 142170   |
| 1        | Top Crank Pin                                           | 142200   |
| 2        | Link Pins                                               | 142403   |
| 2        | Bearing f/Upper Link<br>and Piston                      | 142423   |
| 2        | Bearing f/Bonnet                                        | 142424   |
| 2        | Bearing f/Crank                                         | 142422   |
| 1        | Bearing f/Bonnet Cover                                  | 142425   |
| 5        | Spiral Pin 1/8 X 5/8                                    | 142432   |
| 1        | Spiral Pin ¼ X 1-1/2                                    | 142435   |
| 1        | Spiral Pin 5/16 X 1-3/8                                 | 142434   |
| 2        | Seal Union Ring                                         | 301921   |

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## 2.0 SPARE PARTS LIST (continued)

### REPAIR PARTS FOR MAJOR REBUILD

| QUANTITY                                               | DESCRIPTION             | PART NO. |
|--------------------------------------------------------|-------------------------|----------|
| 1                                                      | Cushion Ring            | 142130   |
| 1                                                      | Outer Seal              | 142180   |
| 1                                                      | Piston/Bearing Assy.    | 142110   |
| 1                                                      | Stem Bushing            | 142140   |
| 1                                                      | Sub Gasket              | 142150   |
| 1                                                      | Outer Retainer          | 142170   |
| (6 above parts, Oteco major repair kit <u>143218</u> ) |                         |          |
| 1                                                      | Top Crank Pin           | 142200   |
| 2                                                      | Link Pins               | 142403   |
| 2                                                      | Bearing f/Bonnet        | 142424   |
| 2                                                      | Bearing f/Crank         | 142422   |
| 1                                                      | Bearing f/Bonnet Cover  | 142425   |
| 5                                                      | Spiral Pin 1/8 X 5/8    | 142432   |
| 1                                                      | Spiral Pin 1/4 X 1-1/2  | 142435   |
| 1                                                      | Spiral Pin 5/16 X 1-3/8 | 142434   |
| 1                                                      | Seal Union Ring         | 301921   |

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### 3.0 REPLACEMENT OF SEALS: Ref. Drawings 20820 and 20821

#### DISASSEMBLY

1. Remove pressure from relief valve.
2. Remove valve from piping system and grip in vice.
3. Remove (4) cap screws (item 7). Lift piston and bonnet assembly away from body (item 37).
4. Unscrew sub (item 46) from body (item 37). Remove outer retainer (item 43), gasket (item 44) and seal (item 45) from body. Remove union seal (item 47) from sub.
5. Thoroughly clean body, sub and parts. CAUTION: If grit blast is used, protect threads and seal surfaces from erosion.
6. Inspect all parts for wear or damage. Replace with new parts as needed.

### 3.0 REPLACEMENT OF SEALS: (continued)

#### ASSEMBLY

1. Apply a light coat of grease to items 43, 44, 45 and 47.
2. Install outer retainer (item 43), seal (item 45) and sub gasket (item 44) into body (item 37). Install union seal (item 47) into sub.
3. Install body sub (item 46) into body (item 37). Tighten body sub to 400 ft-lbs. torque.
4. Apply a light coat of grease to small diameter of piston (item 42) extending from bonnet assembly. Install cushion ring (item 41) onto piston (item 42).
5. Install bonnet assembly onto body assembly. Use screwdriver to start entry of cushion ring into body.
6. Install (4) socket head screws (item 7). Tighten to 50 ft.-lbs. Torque.
7. Pressure test valve for correct operation before installing into system. Precautions should be taken to protect personnel while testing.

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#### 4.0 REPAIR OF BONNET ASSEMBLY: Ref. Drawings 20820 and 20821

##### DISASSEMBLY

1. Remove pressure from relief valve.
2. Remove valve from piping system and grip in vise.
3. Remove adjusting nut (item 1) and upper spring retainer (item 4).
4. Remove load springs (item 31).
5. Remove (4) socket head cap screws (item 7) from bonnet (item 34).
6. Remove bonnet cover assembly (item 9).
7. Remove (4) socket head cap screws (item 7) from body (item 37) and lift bonnet assembly from body.
8. Remove old grease from bonnet assembly and bonnet cover assembly. Clean with solvent.
9. Inspect and replace worn parts as needed.



## 4.0 REPAIR OF BONNET ASSEMBLY (Continued)

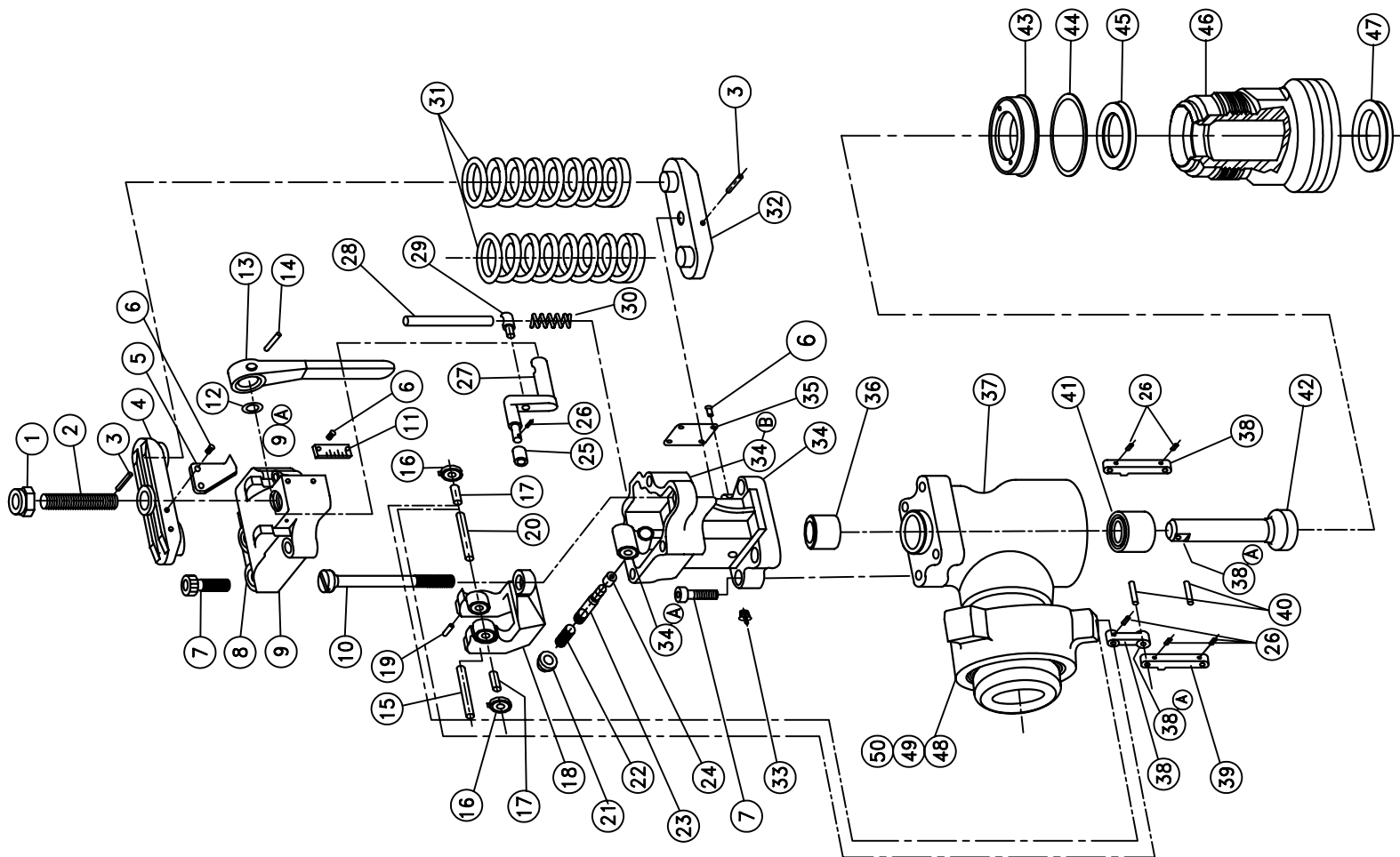
### ASSEMBLY:

1. Apply a light coat of grease to small diameter of piston (item 42) extending from bonnet assembly. Install cushion ring (item 41) onto piston (item 42).
2. Install bonnet assembly onto body assembly. Use screwdriver to start entry of cushion ring into body.
3. Install (4) socket head screw (item 7). Tighten to 50 Ft-lbs. torque.
4. Repack upper part of bonnet assembly (item 34) with Lubriplate Lo – Temp grease, or equivalent. Approximately 16 oz. is required.
5. Install bonnet cover assembly (item 9) onto bonnet assembly (item 34) using (4) socket head cap screws. Tighten to 50 ft-lbs. torque.
6. Install (2) load springs (item 31).
7. Install upper spring retainer (item 4).
8. Install adjusting nut (item 1). Tighten nut to obtain desired relief pressure as indicated by pressure relief scale.
9. Pressure test valve for correct operation before installing into system. Precautions should be taken to protect personnel while testing.

| ITEM | QTY | PART NO. | DESCRIPTION                | ITEM | QTY | PART NO. | DESCRIPTION                      |
|------|-----|----------|----------------------------|------|-----|----------|----------------------------------|
| 1    | 1   | 301786   | ADJUSTING NUT              | 32   | 1   | 142427   | RETAINER, LOWER SPRING           |
| 2    | 1   | 142414   | STUD, ADJUSTING            | 33   | 1   | 301616   | FITTING, GREASE                  |
| 3    | 1   | 142435   | PIN, SPIRAL                | 34   | 1   | 142401   | BONNET/BEARING ASSEMBLY          |
| 4    | 1   | 142426   | RETAINER, UPPER SPRING     | 34-A | 2   | 142424   | BEARING, BONNET                  |
| 5    | 1   | 142418   | INDICATOR, RELIEF PRESSURE | 34-B | 1   | 142431   | PLUG                             |
| 6    | 12  | 301729   | SELF TAP SCREW             | 35   | 1   | 142421   | INSTRUCTION PLATE                |
| 7    | 8   | 143310   | SOCKET HEAD CAP SCREW      | 36   | 1   | 142140   | STEM BUSHING                     |
| 8    | 1   | 142420   | NAMEPLATE                  | 37   | 1   | 142046   | BODY, 2" FIG 1502 MALE UNION     |
| 9    | 1   | 142419   | COVER, BEARING ASSEMBLY    | 38   | 1   | 142404   | UPPER LINK/BEARING ASSEMBLY      |
| 9-A  | 1   | 142425   | BEARING, BONNET COVER      | 38-A | 2   | 142423   | BEARING, F/UPPER LINK, PISTON    |
| 10   | 1   | 143220   | SCREW, LOAD                | 39   | 2   | 142402   | LINK, LOWER                      |
| 11   | 1   | 142430   | RELIEF PRESSURE SCALE      | 40   | 2   | 142403   | PIN, LINK                        |
| 12   | 1   | 142439   | "O" RING, RESET LEVER      | 41   | 1   | 142130   | CUSHION RING                     |
| 13   | 1   | 142409   | HANDLE, RESET              | 42   | 1   | 142110   | PISTON/BEARING ASSEMBLY          |
| 14   | 1   | 142434   | PIN, SPIRAL                | 43   | 1   | 142170   | RETAINER, OUTER                  |
| 15   | 1   | 142405   | PIN, CRANK PIVOT           | 44   | 1   | 142150   | SUB GASKET                       |
| 16   | 2   | 142406   | SPRING, SPRIAL             | 45   | 1   | 142180   | SEAL, OUTER                      |
| 17   | 2   | 142422   | BEARING, CRANK             | 46   | 1   | 142036   | SUB, 2" FIG 1502 FEMALE UNION    |
| 18   | 1   | 143210   | CRANK/BEARING ASSEMBLY     | 47   | 1   | 301921   | UNION SEAL RING                  |
| 19   | 1   | 142433   | PIN, SPIRAL                | 48   | 1   | 302626   | NUT, 2" FIG 1502 UNION,DNV       |
| 20   | 1   | 142200   | PIN, TOP CRANK             | 49   | 3   | 302627   | RETAINER SEGMENT, 2" FIG1502,DNV |
| 21   | 1   | 143320   | BUTTON, RELEASE            | 50   | 1   | 301924   | RETAINER RING, 2" FIG 1502 UNION |
| 22   | 1   | 142407   | SPRING, RELEASE BUTTON     |      |     |          |                                  |
| 23   | 1   | 143330   | SHAFT, RELEASE BUTTON      |      |     |          |                                  |
| 24   | 1   | 142408   | BUSHING, RELEASE BUTTON    |      |     |          |                                  |
| 25   | 1   | 142440   | ROLLER, RESET CRANK        |      |     |          |                                  |
| 26   | 5   | 142432   | PIN, SPRIAL                |      |     |          |                                  |
| 27   | 1   | 142442   | CRANK, RESET               |      |     |          |                                  |
| 28   | 1   | 142340   | ROD, SPRING GUIDE          |      |     |          |                                  |
| 29   | 1   | 142412   | KEEPER, SPRING             |      |     |          |                                  |
| 30   | 1   | 142413   | SPRING, RESET CRANK        |      |     |          |                                  |
| 31   | 2   | 142417   | LOAD SPRING                |      |     |          |                                  |

|                                                                                           |                                                                                                                              |  |                              |  |
|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--|------------------------------|--|
| NOTE:<br>SEE DRAWING 20820<br>FOR EXPLODED VIEW<br>OF VALVE ASSEMBLY<br>AND ITEM NUMBERS. |                                         |  | OTECO INC.<br>HOUSTON, TEXAS |  |
|                                                                                           | 2"- 5,000 PSI OTECO RESET RELIEF<br>VALVE STANDARD PARTS LIST<br>2" FIG.1502 FEMALE UNION INLET &<br>2" FIG.1502 MALE OUTLET |  |                              |  |
|                                                                                           | DATE: 2/7/08                                                                                                                 |  | PART NO.<br>130279           |  |
|                                                                                           | SCALE: NONE                                                                                                                  |  | DRAWING NO.<br>A-20821       |  |
|                                                                                           | DRAWN: B.H.<br>CHK'D: WU                                                                                                     |  | REV.<br>A                    |  |

|                                                                                                                          |  |
|--------------------------------------------------------------------------------------------------------------------------|--|
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NOTES:

1) SEE DRAWING 20821 FOR ITEM NUMBERS.

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OTECO INC.  
HOUSTON, TEXAS

OTECO 2" RESET RELIEF VALVE  
2" FIG.1502 FEMALE INLET &  
2" FIG.1502 MALE OUTLET

DATE: 2/7/08

SCALE: NTS

DRAWN: B.H.

CHK'D: WU

PART NO.

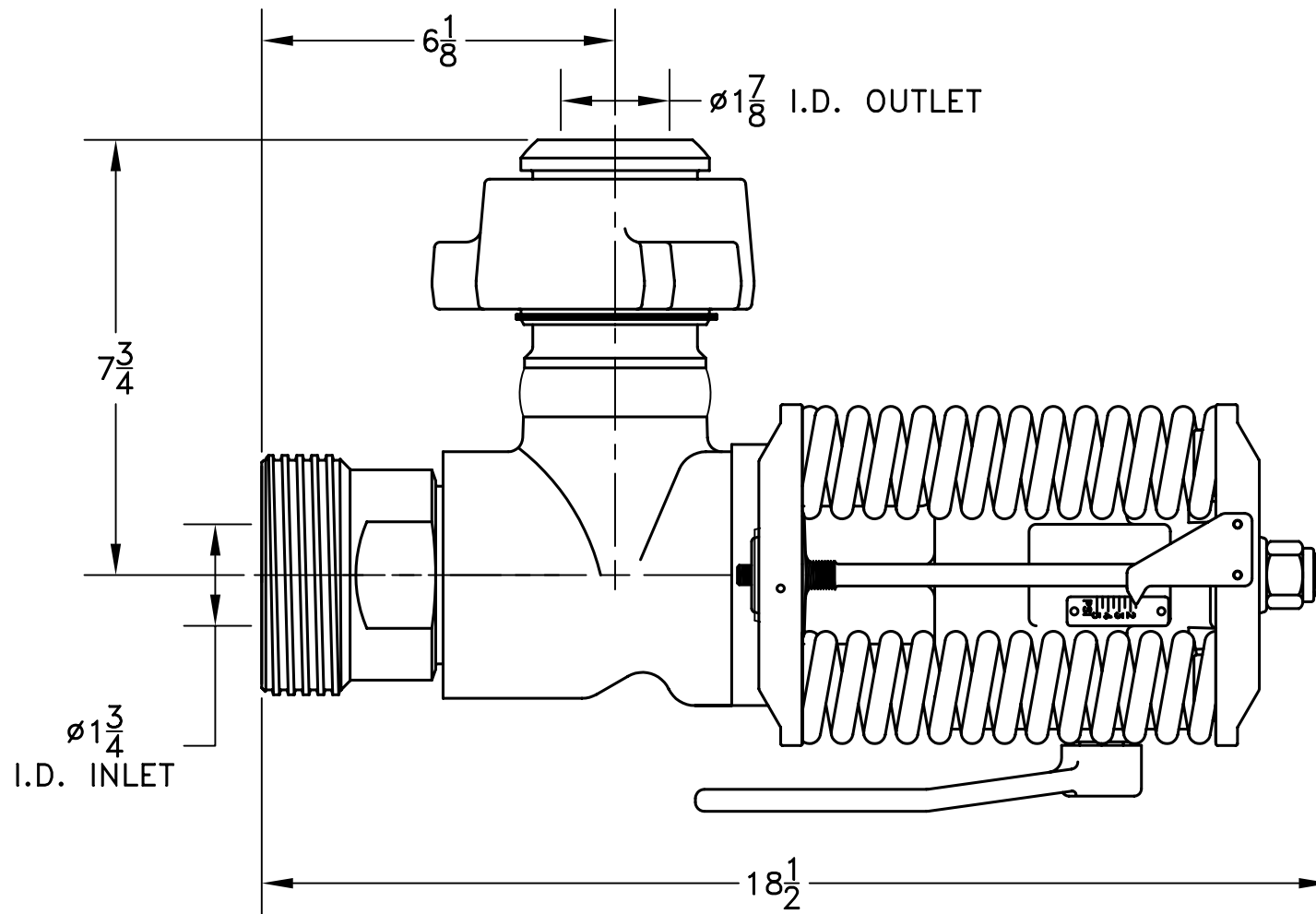
130279

DRAWING NO.

A-20820

REV.

A



OTECO INC.  
HOUSTON, TEXAS

2"-5000 PSI RRV  
2" FIG 1502 FEMALE INLET  
2" FIG 1502 MALE OUTLET

|     |      |         |
|-----|------|---------|
| D   | 1970 | 1/24/07 |
| C   | 1850 | 9/27/04 |
| REV | ECN  | DATE    |

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DATE: 9/3/04

SCALE: NONE

DRAWN: BH

CHK'D: HK

PART NO.

130279

DRAWING NO.  
A-20377

REV.  
D