



345 Carlingview Drive  
Toronto, Ontario M9W 6N9  
Tel.: 416.734.3300  
Fax: 416.231.1626  
Toll Free: 1.877.682.8772

[www.tssa.org](http://www.tssa.org)

February 27, 2023

PRESSURE VESSEL ENGINEERING LTD.  
1440 KING ST N UNIT 1  
ST. JACOBS ON N0B 2N0  
CANADA

**Workorder Type:** Registration - Fitting (Conventional)

**Workorder No:** 8230259

**Your Reference No.:** PVE-18562

**Registered to:** Parker Hannifin Corporation Industrial Gas Filtration and Generation Division

Dear NICOLE KILGORE,

Technical Standards and Safety Authority (TSSA) is pleased to inform you that your submission has been reviewed and registered as follows:

CRN : 0E15444.5R1

Main Design No.: C-11804 Rev.J, C-11826 Rev.F, C-12736 Rev.F, C-14794 Rev.F

Expiry Date: February 27, 2033

Please be advised that a valid quality control system must be maintained for the fitting registration to remain valid until the expiry date.

The stamped copy of the approved registration and the invoice are mailed separately (There will be no hard copies for electronic submissions). Should you have any questions or require further assistance, please contact a Customer Service Advisor at 1.877.682.TSSA (8772) or e-mail [customerservices@tssa.org](mailto:customerservices@tssa.org). We will be happy to assist you. When contacting TSSA regarding this file, please refer to the Work Order number provided above.

Yours truly,

Mehdi Talebi  
Engineer, BPV  
Tel : . +1 416-734-3413  
Email : [mtalebi@tssa.org](mailto:mtalebi@tssa.org)



Technical Standards and Safety Authority  
 345 Carlingview Drive  
 Toronto, Ontario M9W 6N9  
 www.tssa.org

Show facsimile of manufacturer's logo or trademark, as it will appear on the fitting, in the space below



## STATUTORY DECLARATION Registration of Fittings

I, John D'Antonio Engineering Supervisor  
(Name and Position, e.g. President, Plant Manager, Chief Engineer)

of Parker Hannifin Corporation Industrial Gas Filtration and Generation Division  
(Name of Manufacturer)

Located at 242/260 Neck Road, Haverhill, MA, 01835, USA (978) 478-2455  
(Plant Address) (Telephone No.) (Fax No.)

do solemnly declare that the fittings listed hereunder, which are subject to the **Technical Standards and Safety Act**, Boilers and Pressure Vessels Regulation, comply with all of the requirements of

(Title of recognized North American Standard)  
 which specifies the dimensions, materials of construction, pressure/temperature ratings, identification marking the fittings and service;

or are not covered by the provisions of a recognized North American standard and are therefore manufactured to comply with ASME VIII-1 2021 Edition as supported by the attached data which identifies the dimensions, material of construction, pressure/temperature ratings and the basis for such ratings, the marking of the fitting for identification and service.

I further declare that the manufacture of these fittings is controlled by a quality system meeting the requirements of ISO 9001:2015 which has been verified by the following authority, DNV GL - Business Assurance.

The items covered by this declaration, for which I seek registration, are category E type fittings. In support of this application, the following information and/or test data are attached as follows:

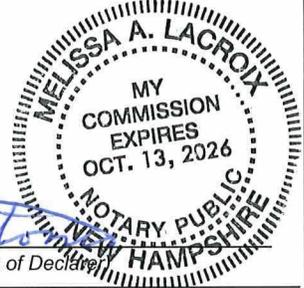
Calculations (18562c-1, 18562c-2, 18562c-3, 18562c-4), ISO Certificate, Scope Document (18562s-1), Original Acceptance Documentation  
(drawings, calculations, test reports, etc.)

Declared before me at Plaistow in the State of NH  
 the 31 day of October AD 2022

Commissioner for Oaths:

Melissa LaCroix  
(Printed name)  
Melissa LaCroix  
(Signature)

John D'Antonio  
(Signature of Declarant)



### FOR OFFICE USE ONLY

To the best of my knowledge and belief, the application meets the requirements of the **Technical Standards and Safety Act**, Boilers and Pressure Vessels Regulation, and CSA Standard B51 and is accepted for registration in Category E.

CRN: 0E15444.5R1  
 Registered by: \_\_\_\_\_  
 Dated: \_\_\_\_\_

NOTE: This registration expires on: **FEB 27, 2033**

Technical Standards and Safety Authority  
 Boilers and Pressure Vessels Safety Program

REGISTERED

C.R.N.: **0E15444.5R1**

Signed: **NT**

Date: **February 27, 2023.**

4

3

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1

| NO. | DESCRIPTION          | PART NO.  | DWG. NO. | MAT'L        | QTY |
|-----|----------------------|-----------|----------|--------------|-----|
| 1   | HEAD                 | 33185-1/4 | C-11734  | 316 SS       | 1   |
| 2   | TIEROD               | 33962     | B-11729  | 316 SS       | 1   |
| 3   | ELEMENT RETAINER     | 33963     | B-11730  | 316 SS       | 1   |
| 4   | TIE-NUT              | 33267     | B-11731  | 316 SS       | 1   |
| 5   | BOWL                 | 33160     | B-12651  | 316 SS       | 1   |
| 6   | FILTER TUBE          | 100-12    |          |              |     |
| 7   | SUPPORT CORE         | SS-100-12 | C-10118  | 316 SS       | 1   |
| 8   | PLUG                 | 11929     | A-11319  | 316 SS       | 1   |
| 9   | O-RING (-015)        | 22949-2   |          | EDGING GRADE | 1   |
| 10  | O-RING (-012)        | 22949-3   |          | EDGING GRADE | 1   |
| 11  | FLAT GASKET          | 22955-1   | A-11446  | EDGING GRADE | 1   |
| 12  | THREAD PROTECTOR     | 21208     | A-11862  | PLASTIC      | 2   |
| 13  | THREAD PROTECTOR     | 21207     | A-11862  | PLASTIC      | 1   |
| 14  | MOUNTING BRACKET KIT | 11038     | A-10235  | CAD/PTD      | 1   |

PARTS LIST

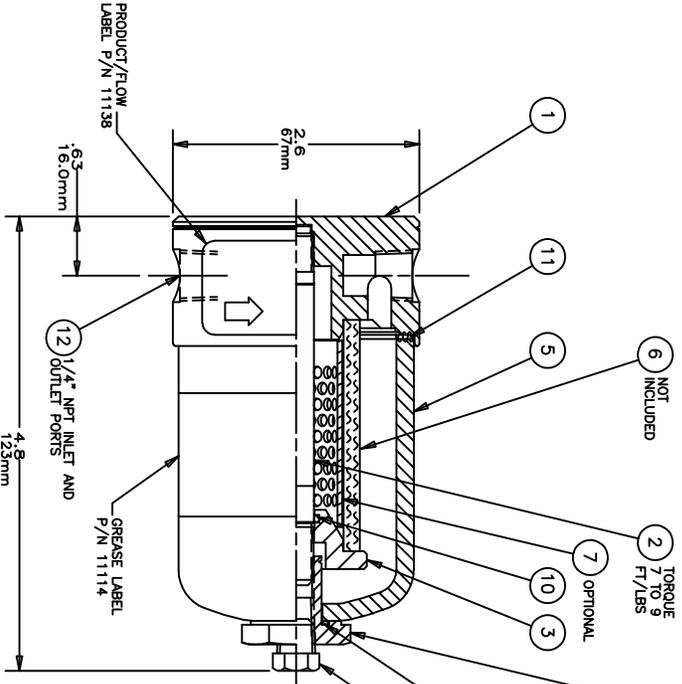
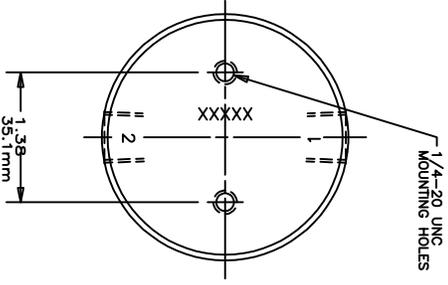
LEGEND

- = REPLACEABLE PARTS
- = OPTIONAL PARTS
- = SPECIFY FILTER TUBE GRADE (BX OR DX)

| REV | ECN NO. | DESCRIPTION   | NAME | DATE |
|-----|---------|---------------|------|------|
| G   |         | ADDED NOTE 6  | J.D. | 4/12 |
| H   |         | REVISED NOTES | J.D. | 6/12 |
| J   |         | REVISED NOTES | J.D. | 8/22 |

REVISIONS

1/4-20 UNC MOUNTING HOLES



| SEAL SET NUMBER | MAT'L      | NO | QTY | PART NO. |
|-----------------|------------|----|-----|----------|
| 22959           | EPR        | 9  | 1   | 22959-2  |
| 22959           | EPR        | 10 | 1   | 22959-3  |
| 22957           | BUTYL      | 9  | 1   | 22957-2  |
| 22957           | BUTYL      | 10 | 1   | 22957-3  |
| 22956           | TEFLON     | 9  | 1   | 22956-2  |
| 22956           | TEFLON     | 10 | 1   | 22956-3  |
| 22955           | VITON      | 9  | 1   | 22955-1  |
| 22955           | FOOD GRADE | 10 | 1   | 22949-3  |
| 22954           | SILICONE   | 9  | 1   | 22954-2  |
| 22954           | SILICONE   | 10 | 1   | 22954-3  |
| 22951           | BUNA       | 9  | 1   | 22950-2  |
| 22951           | BUNA       | 10 | 1   | 22950-3  |

REPLACEMENT SEAL SETS

NOTES:

1. ALL O-RINGS TO BE LUBRICATED WITH APPROVED LUBRICANT ONLY.
  2. HOUSING TO BE SHIPPED WITH PLASTIC THREAD PROTECTORS (ITEMS 12 & 13) INSTALLED.
  3. PRESSURE RATING: 300 psig AT 200°F.
  4. "V" GROOVE IDENTIFIERS PARTS MADE FROM 316 SS.
  5. ALL ASSEMBLY AND PACKAGING MUST BE PERFORMED IN ACCORDANCE WITH THE APPROPRIATE MANUFACTURING METHOD SHEET SPECIFIED FOR THIS ASSEMBLY.
  6. DESIGNED LAW ASME VIII DIV 1 2021 ED.
- MDMT: -20 F  
 HYDROTEST PRESSURE: 390 PSIG  
 CORROSION ALLOWANCE: 0  
 NDE: NONE  
 NDT: NONE  
 FINISH: NONE  
 PRINT: NONE

|                                   |  |             |       |
|-----------------------------------|--|-------------|-------|
| THIRD ANGLE PROJECTION            | TOLERANCES EXCEPT AS NOTED   | ENG. APP'D: | DATE: |
|                                   | $\pm .015$<br>$\pm .030$<br>$\pm .005$<br>$\pm .13$ mm<br>ANGULAR: ±1°<br>SURFACE ROUGHNESS: 63/ OR BETTER | DATE:       | DATE: |
| REMOVE ALL BURRS AND SHARP EDGES. | SEE PARTS LIST   | DATE:       | DATE: |

|   |  |
|---|--|
| <br>Parker Filtration Corporation<br>15000 North Central Expressway<br>Houston, Texas 77040 USA | MODEL NO.: 3336-1/4<br>SCALE: 1 : 1<br>SHEET: 1 OF 1 |
|---|--|

A

B

C

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1

| NO. | DESCRIPTION          | PART NO.  | DWG. NO. | MAT'L      | QTY |
|-----|----------------------|-----------|----------|------------|-----|
| 1   | HEAD                 | 33185-1/2 | C-11733  | 316 SS     | 1   |
| 2   | TIEROD               | 45982     | B-11729  | 316 SS     | 1   |
| 3   | ELEMENT RETAINER     | 33963     | B-11730  | 316 SS     | 1   |
| 4   | TIIEU/IT             | 33267     | B-11731  | 316 SS     | 1   |
| 5   | BOWL                 | 45160     | B-12852  | 316 SS     | 1   |
| 6   | FILTER TUBE          | 100-25-1  | ---      | ---        | 1   |
| 7   | SUPPORT CORE         | SS-100-25 | C-10118  | 316 SS     | 1   |
| 8   | FLUC                 | 11929     | A-11319  | 316 SS     | 1   |
| 9   | O-RING (-015)        | 22949-2   | ---      | FOOD GRADE | 1   |
| 10  | O-RING (-012)        | 22949-3   | ---      | FOOD GRADE | 1   |
| 11  | FLAT GASKET          | 22955-1   | A-11446  | PLASTIC    | 1   |
| 12  | THREAD PROTECTOR     | 21209     | A-11862  | PLASTIC    | 2   |
| 13  | THREAD PROTECTOR     | 21207     | A-11862  | PLASTIC    | 1   |
| --- | MOUNTING BRACKET KIT | 11036     | A-10235  | CAD/PID    | 1   |

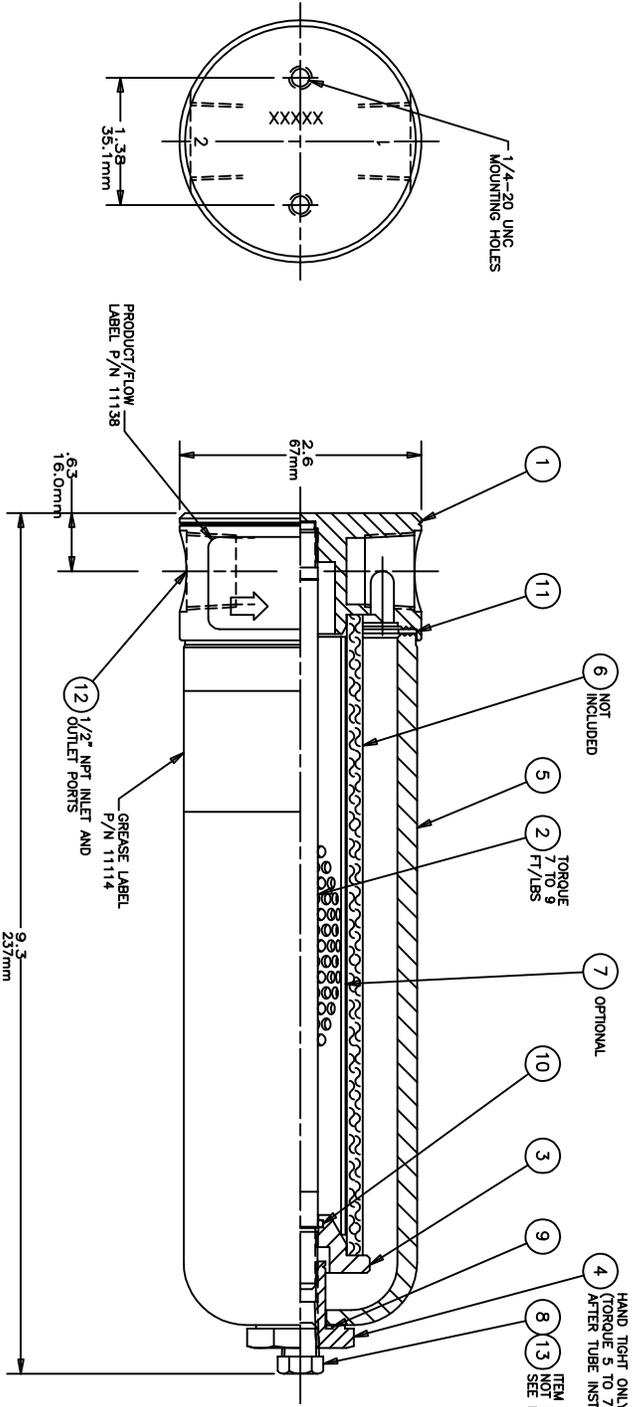
**LEGEND**

☒ = REPLACEABLE PARTS

⊕ = OPTIONAL PARTS

□ = INDICATE FILTER GRADE (BX OR DX)

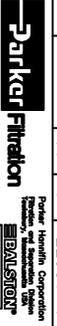
| REV | ECN. NO. | DESCRIPTION   | NAME | DATE |
|-----|----------|---------------|------|------|
| D   |          | ADDED NOTE 6  | J.D. | 6/12 |
| E   |          | REVISED NOTES | J.D. | 8/22 |
| F   |          | REVISED NOTES | J.D. | 8/22 |



| SEAL SET NUMBER | MAT'L       | CONSISTS OF |     |
|-----------------|-------------|-------------|-----|
|                 |             | NO          | QTY |
| 22959           | EPR         | 10          | 1   |
| 22957           | BUTYL       | 10          | 1   |
| 22956           | TEFLON      | 10          | 1   |
| 22955           | VITON GRADE | 10          | 1   |
| 22954           | SILICONE    | 10          | 1   |
| 22951           | BUNA        | 10          | 1   |

- NOTES:**
1. ALL O-RINGS TO BE LUBRICATED WITH APPROVED LUBRICANT ONLY.
  2. HOUSING TO BE SHIPPED WITH PLASTIC THREAD PROTECTORS (ITEMS 12 & 13) INSTALLED.
  3. PRESSURE RATING: 250 psig AT 200°F.
  4. 'V' GROOVE IDENTIFIES PARTS MADE FROM 316 SS.
  5. ALL ASSEMBLY AND PACKAGING MUST BE PERFORMED IN ACCORDANCE WITH THE APPROPRIATE MANUFACTURING METHOD SHEET SPECIFIED FOR THIS ASSEMBLY.
  6. DESIGNED IN ACCORDANCE WITH ASME VIII DIV 1 2021 ED.

DESIGNED BY: J.K. DATE: 6/26/85  
 DRAWN BY: J.K. DATE: 6/26/85  
 FINISH: 45S6  
 SCALE: 1 : 1  
 SHEET: 1 OF 1  
 DWG. NO.: C-11826



**Parker Filtration**  
 Filter Housing

**THIRD ANGLE PROJECTION**

THIS DOCUMENT CONTAINS INFORMATION THAT IS CONFIDENTIAL AND PROPRIETARY TO PARKER FILTRATION. IT IS THE PROPERTY OF PARKER FILTRATION AND IS TO BE KEPT CONFIDENTIAL. THE INFORMATION CONTAINED HEREIN IS TO BE USED ONLY FOR THE PURPOSES SPECIFIED IN THE ORDER. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF PARKER FILTRATION.

**TOLERANCES EXCEPT AS NOTED**

XX X.Xmm ±.015  
 XXX ±.005  
 XX.XXmm ±.13mm  
 ANGULAR 1°  
 SURFACE FINISH 63 OR BETTER

REMOVE ALL BURRS AND SHARP EDGES.

SEE PARTS LIST

**Parker Filtration**  
 Filter Housing  
 MODEL NO.: 45S6  
 SCALE: 1 : 1  
 SHEET: 1 OF 1  
 DWG. NO.: C-11826



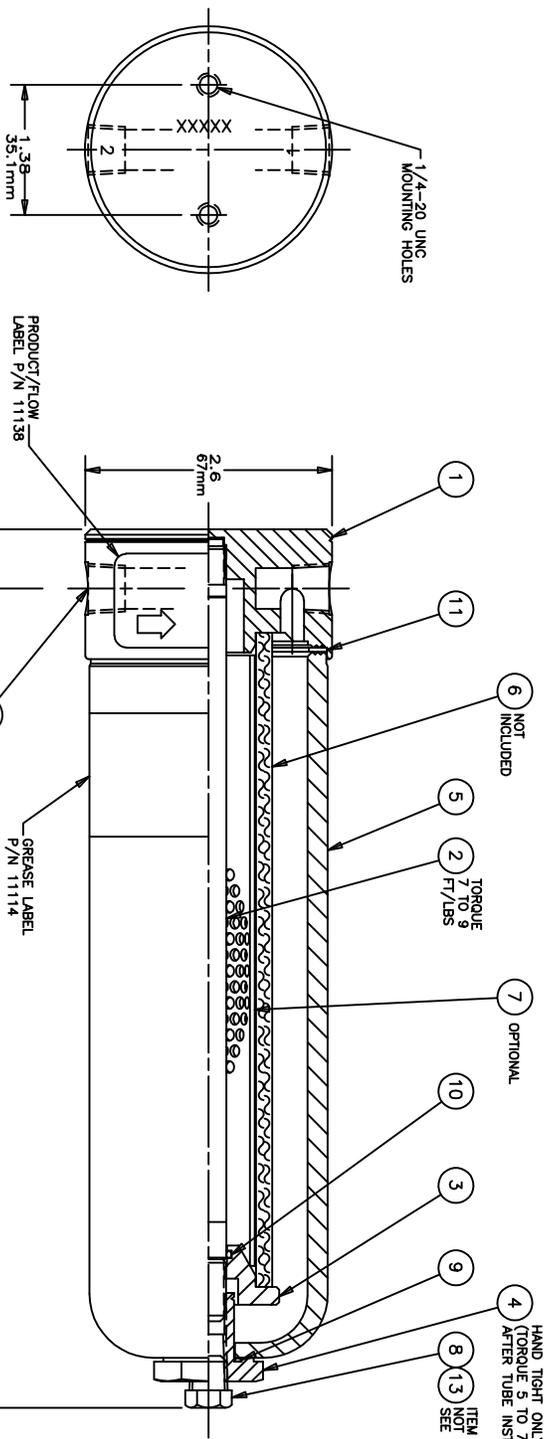
| NO. | DESCRIPTION          | PART NO.  | DWG NO. | MATL        | QTY |
|-----|----------------------|-----------|---------|-------------|-----|
| 1   | HEAD                 | 33185-1/4 | C-11734 | 316 SS      | 1   |
| 2   | THREAD               | 45962     | B-11729 | 316 SS      | 1   |
| 3   | ELEMENT RETAINER     | 33863     | B-11730 | 316 SS      | 1   |
| 4   | TIENUT               | 33267     | B-11731 | 316 SS      | 1   |
| 5   | BOWL                 | 45180     | B-12652 | 316 SS      | 1   |
| 6   | FILTER TUBE          | 100-25-U  | ---     | ---         | --- |
| 7   | SUPPORT CORE         | SS-100-25 | C-10118 | 316 SS      | 1   |
| 8   | PLUG (-015)          | 11929     | A-11319 | 316 SS      | 1   |
| 9   | O-RING (-012)        | 22949-2   | ---     | ---         | --- |
| 10  | O-RING (-012)        | 22949-3   | ---     | ---         | --- |
| 11  | FLAT GASKET          | 22945-1   | A-11446 | EXPO. METAL | 1   |
| 12  | THREAD PROTECTOR     | 21208     | A-11882 | EXPO. METAL | 1   |
| 13  | THREAD PROTECTOR     | 21207     | A-11882 | PLASTIC     | 2   |
| --- | MOUNTING BRACKET KIT | 11038     | A-10235 | PLASTIC     | 1   |

**LEGEND**

- = REPLACEABLE PARTS
- = OPTIONAL PARTS
- = INDICATE FILTER GRADE (BX OR DX)

| REV | EDN. NO. | DESCRIPTION   | NAME | DATE |
|-----|----------|---------------|------|------|
| D   |          | ADDED NOTE 6  | J.D. | 4/12 |
| E   |          | REVISED NOTES | J.D. | 6/12 |
| F   |          | REVISED NOTES | J.D. | 8/22 |

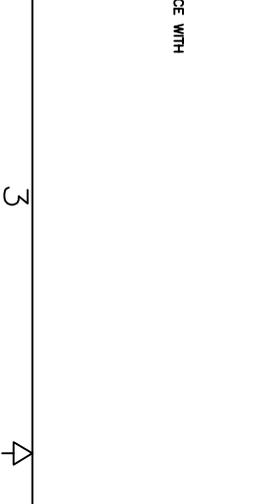
**REVISIONS**



| SEAL SET NUMBER | MAT'L            | NO. | QTY | CONSISTS OF |
|-----------------|------------------|-----|-----|-------------|
| 22959           | EPR              | 10  | 1   | 22959-2     |
|                 |                  | 11  | 1   | 22959-3     |
| 22957           | BUTL             | 9   | 1   | 22957-2     |
|                 |                  | 10  | 1   | 22957-3     |
| 22956           | TEFLON           | 11  | 1   | 22956-1     |
|                 |                  | 9   | 1   | 22956-2     |
|                 |                  | 10  | 1   | 22956-3     |
| 22955           | VITON FOOD GRADE | 11  | 1   | 22955-1     |
|                 |                  | 10  | 1   | 22954-2     |
| 22954           | SILICONE         | 11  | 1   | 22954-3     |
|                 |                  | 10  | 1   | 22950-2     |
|                 |                  | 9   | 1   | 22950-3     |
| 22951           | BUVA             | 10  | 1   | 22951-1     |

| REPLACEMENT SEAL SETS | MAT'L            | NO. | QTY | PART NO. |
|-----------------------|------------------|-----|-----|----------|
| 22959                 | EPR              | 10  | 1   | 22959-2  |
|                       |                  | 11  | 1   | 22959-3  |
| 22957                 | BUTL             | 9   | 1   | 22957-2  |
|                       |                  | 10  | 1   | 22957-3  |
| 22956                 | TEFLON           | 11  | 1   | 22956-1  |
|                       |                  | 9   | 1   | 22956-2  |
|                       |                  | 10  | 1   | 22956-3  |
| 22955                 | VITON FOOD GRADE | 11  | 1   | 22955-1  |
|                       |                  | 10  | 1   | 22954-2  |
| 22954                 | SILICONE         | 11  | 1   | 22954-3  |
|                       |                  | 10  | 1   | 22950-2  |
|                       |                  | 9   | 1   | 22950-3  |
| 22951                 | BUVA             | 10  | 1   | 22951-1  |

- NOTES:**
1. ALL O-RINGS TO BE LUBRICATED WITH APPROVED LUBRICANT ONLY.
  2. HOUSING TO BE SHIPPED WITH PLASTIC THREADED PROTECTORS (ITEMS 12 & 13) INSTALLED.
  3. PRESSURE RATING: 250 psig AT 200°F.
  4. "V" GROOVE IDENTIFIES PARTS MADE FROM 316 SS.
  5. ALL ASSEMBLY AND PACKAGING MUST BE PERFORMED IN ACCORDANCE WITH THE ASSEMBLY AND PACKAGING METHOD SHEET SPECIFIED FOR THIS ASSEMBLY.
  6. DESIGNED IN ACCORDANCE WITH ASTM A182, TYPE 316, HYDROTEST PRESSURE: 325 PSIG CORROSION ALLOWANCE: 0 NDE: NONE MAFCT TEST EXEMPT PER UHA-51(d) PMHT: NONE



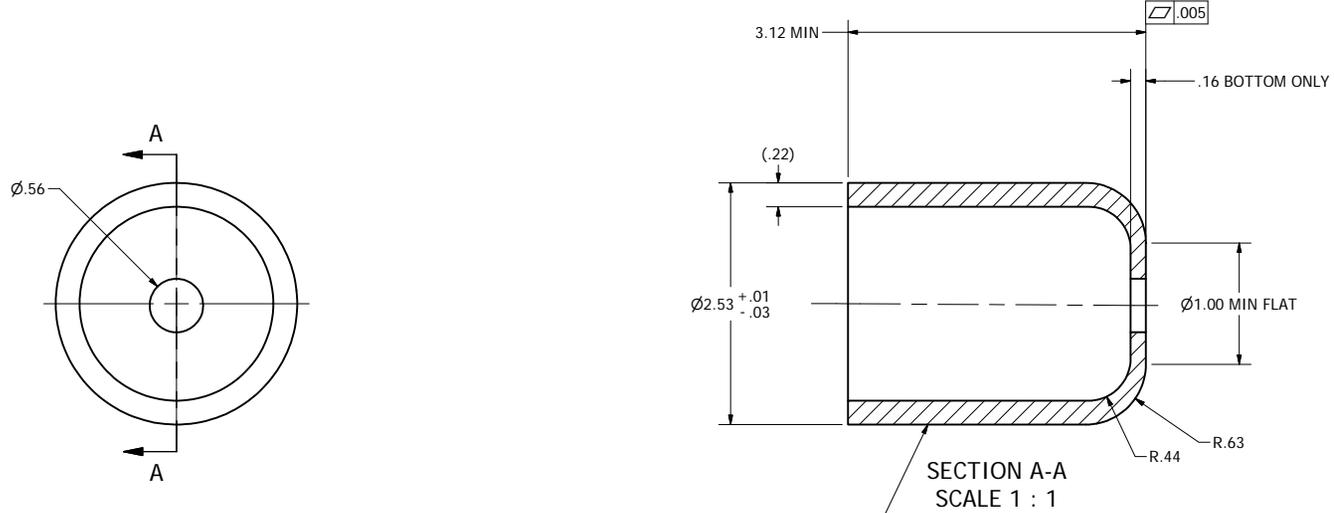
| THIRD ANGLE PROJECTION | TOLERANCES EXCEPT AS NOTED                                     | ENG. APP'D:   | DATE: |
|------------------------|--|---------------|-------|
|                        | ±.015<br>±.005<br>±.13mm<br>ANGULAR ±.1°<br>SURFACES OR BETTER | CH'D: BR:     | DATE: |
|                        | REMOVE ALL BURRS AND SHARP EDGES.                              | DATE: 7/21/93 |       |
|                        | SEE PARTS LIST   |               |       |

| TITLE          | FINISH: | MODEL NO.: | SCALE: | SHEET: |
|----------------|---------|------------|--------|--------|
| FILTER HOUSING | ---     | 45S6-1/4   | 1:1    | 1 OF 1 |
|                |         |            |        |        |
|                |         |            |        |        |

Parker Filtration  
Balsston



| REVISIONS |         |                                       |      |       |
|-----------|---------|---------------------------------------|------|-------|
| REV       | ECN.NO. | DESCRIPTION                           | NAME | DATE  |
| -         | ----    | ORIGINATED FOR RELEASE                | LRS  | 01/88 |
| A         | 1857    | REVISED PER ECN                       | CB   | 08/07 |
| B         |         | DELETED WELDED OPTION, REVISED NOTE 1 | JD   | 06/12 |



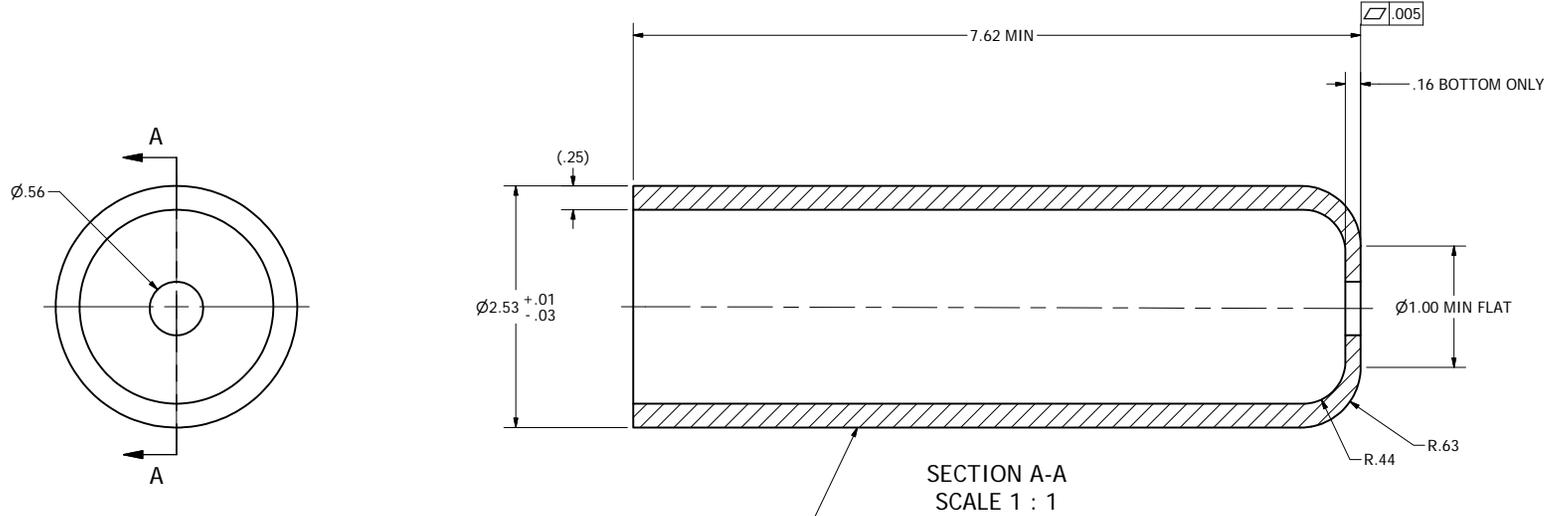
FINISH AND SHAPE TO BE AS DRAWN.  
SLIGHT TAPER PERMITTED.  
MUST BE FREE OF EXCESSIVE DRAW MARKS.

NOTES:

- MATERIAL: SA-240 316SS  
MILL CERTIFICATE TO BE SUPPLIED.

|   |  |                             |  |
|---|--|-----------------------------|--|
| <p>THIRD ANGLE PROJECTION</p> <p>THIS DOCUMENT CONTAINS INFORMATION THAT IS CONFIDENTIAL AND PROPRIETARY TO PARKER FILTRATION AND SEPARATION DIVISION (PARKER). THIS DOCUMENT IS FURNISHED ON THE UNDERSTANDING THAT THE DOCUMENT AND THE INFORMATION IT CONTAINS WILL NOT BE COPIED OR DISCLOSED TO OTHERS OR USED FOR ANY PURPOSE OTHER THAN CONDUCTING BUSINESS WITH PARKER, AND WILL BE RETURNED AND ALL FURTHER USE DISCONTINUED UPON REQUEST BY PARKER. COPYRIGHT PARKER, YEAR OF COPYRIGHT IS FIRST YEAR INDICATED ON DOCUMENT. ALL RIGHTS RESERVED.</p> | <p>TOLERANCES EXCEPT AS NOTED</p> <p>.XX ±.015<br/>X.Xmm ±.38mm<br/>.XXX ±.005<br/>XX.XXmm ±.13mm</p> <p>ANGULAR ±1°<br/>63/ ✓ SURFACE ROUGHNESS OR BETTER</p> <p>REMOVE ALL BURRS AND SHARP EDGES</p> | <p>ENG. APVD.: DATE:</p>    | <p>Parker Hannifin Corporation<br/>Filtration and Separation Division<br/>Haverhill, Massachusetts USA</p> |
|   |  | <p>CHKD BY: DATE:</p>       |  |
| <p>DRAWN BY: DATE:<br/>C.BERUBE 08/07</p>   | <p>MATL:<br/>SEE NOTES</p>   | <p>FINISH:<br/>AS DRAWN</p> | <p>MODEL NO.:<br/>MODEL 45</p>   |
|   |  | <p>PIN:<br/>33160-2</p>     | <p>SCALE:<br/>1 OF 1</p> <p>DWG.NO.:<br/>C-12658</p>   |

| REVISIONS |         |                                       |      |       |
|-----------|---------|---------------------------------------|------|-------|
| REV       | ECN.NO. | DESCRIPTION                           | NAME | DATE  |
| -         | ----    | ORIGINATED FOR RELEASE                | PES  | 05/97 |
| A         | 1657    | REVISED PER ECN                       | CB   | 08/07 |
| B         |         | DELETED WELDED OPTION, REVISED NOTE 1 | J.D. | 06/12 |



FINISH AND SHAPE TO BE AS DRAWN.  
SLIGHT TAPER PERMITTED.  
MUST BE FREE OF EXCESSIVE DRAW MARKS.

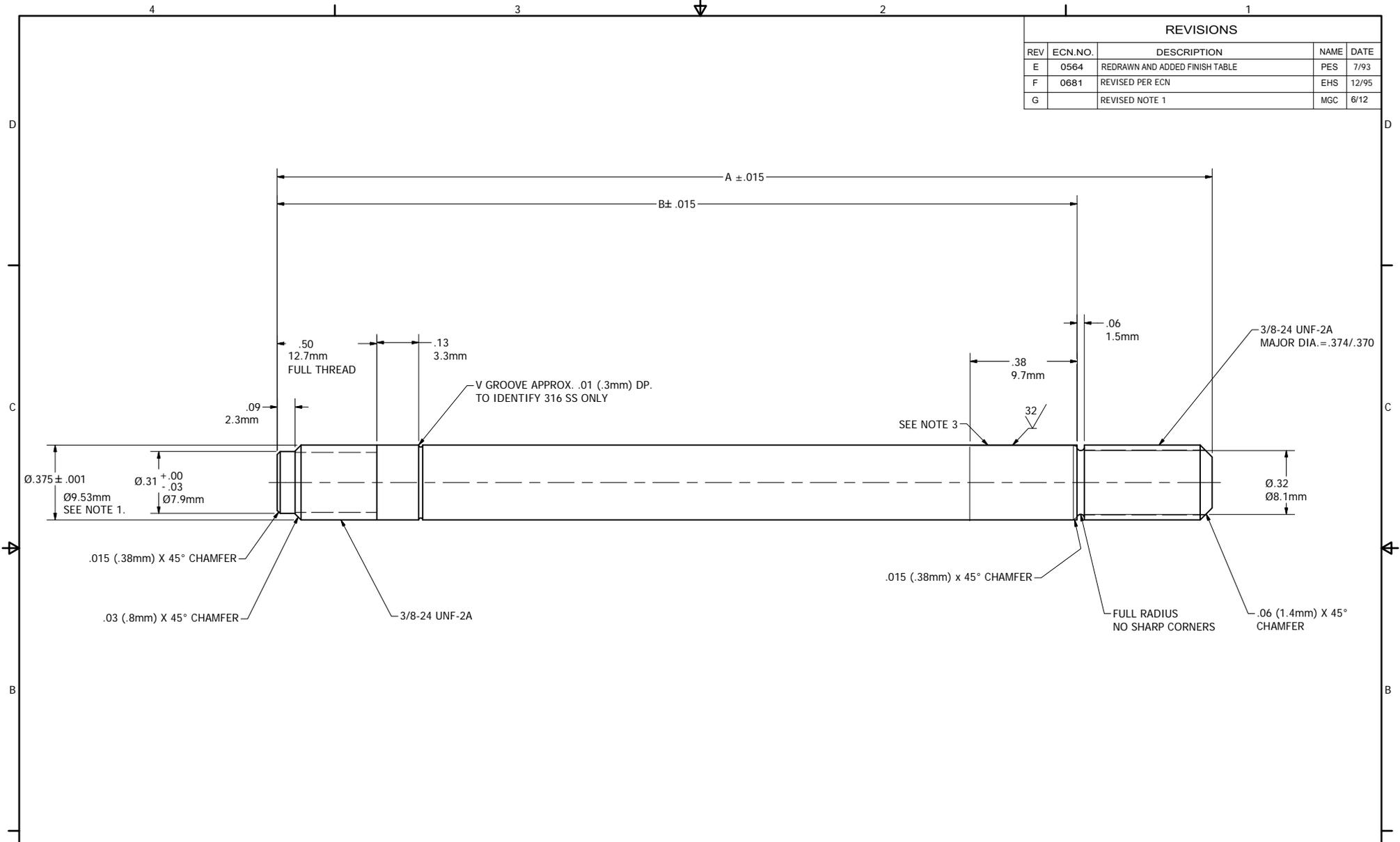
SECTION A-A  
SCALE 1 : 1

NOTES:

- MATERIAL: SA-240 316SS  
MILL CERTIFICATE TO BE SUPPLIED

|   |  |  |  |
|---|--|--|--|
| <p>THIRD ANGLE PROJECTION</p> <p>THIS DOCUMENT CONTAINS INFORMATION THAT IS CONFIDENTIAL AND PROPRIETARY TO PARKER FILTRATION AND SEPARATION DIVISION ('PARKER'). THIS DOCUMENT IS FURNISHED ON THE UNDERSTANDING THAT THE DOCUMENT AND THE INFORMATION IT CONTAINS WILL NOT BE COPIED OR DISCLOSED TO OTHERS OR USED FOR ANY PURPOSE OTHER THAN CONDUCTING BUSINESS WITH PARKER, AND WILL BE RETURNED AND ALL FURTHER USE DISCONTINUED UPON REQUEST BY PARKER. COPYRIGHT PARKER, YEAR OF COPYRIGHT IS FIRST YEAR INDICATED ON DOCUMENT. ALL RIGHTS RESERVED.</p> | <p>TOLERANCES EXCEPT AS NOTED</p> <p>.XX ±.015<br/>X.Xmm ±.38mm<br/>.XXX ±.005<br/>XX.XXmm ±.13mm</p> <p>ANGULAR ±1°<br/>63/ ✓ SURFACE ROUGHNESS OR BETTER</p> <p>REMOVE ALL BURRS AND SHARP EDGES</p> | <p>ENG. APVD.: DATE:</p>                   | <p>Parker Hannifin Corporation<br/>Filtration and Separation Division<br/>Haverhill, Massachusetts USA</p> |
|   |  | <p>CHKD BY: DATE:</p>                      |  |
|   |  | <p>DRAWN BY: DATE:<br/>C. BERUBE 08/07</p> | <p>MODEL NO.:<br/>MODEL 45</p>   |
|   |  | <p>MATL:<br/>SEE NOTES</p>                 | <p>FINISH:<br/>AS DRAWN</p> <p>SCALE: SHEET:<br/>1 OF 1</p>  |
|   |  | <p>PIN:<br/>45160-2</p>                    | <p>DWG.NO.:<br/>C-12659</p>  |

| REVISIONS |         |                                |      |       |
|-----------|---------|--------------------------------|------|-------|
| REV       | ECN.NO. | DESCRIPTION                    | NAME | DATE  |
| E         | 0564    | REDRAWN AND ADDED FINISH TABLE | PES  | 7/93  |
| F         | 0681    | REVISED PER ECN                | EHS  | 12/95 |
| G         |         | REVISED NOTE 1                 | MGC  | 6/12  |



NOTES:

1. MATERIAL: SA-479 316. COLD DRAWN, TURNED, GROUND AND POLISHED ROUND BAR STOCK (DO NOT ANNEAL).
2. REMOVE ALL BURRS AND SHARP EDGES.
3. .38 (9.7mm) AREA INDICATED MUST HAVE A 32 RMS OR BETTER SURFACE FINISH.
4. MATERIAL CERTIFICATION MUST BE SUPPLIED WITH EACH SHIPMENT.

| 45962    | 8.324 (211.43mm) | 7.664 (194.67mm) | 45G, 45S6  |
|----------|------------------|------------------|------------|
| 33962    | 3.834 (97.38mm)  | 3.174 (80.62mm)  | 33G, 33S6  |
| PART NO. | DIM. A           | DIM. B           | WHERE USED |

|   |  |   |  |  |
|---|--|---|--|--|
| <b>THIRD ANGLE PROJECTION</b><br><br><small>THIS DOCUMENT CONTAINS INFORMATION THAT IS CONFIDENTIAL AND PROPRIETARY TO PARKER FILTRATION AND SEPARATION DIVISION (PARKER). THIS DOCUMENT IS FURNISHED ON THE UNDERSTANDING THAT THE DOCUMENT AND THE INFORMATION IT CONTAINS WILL NOT BE COPIED OR DISCLOSED TO OTHERS OR USED FOR ANY PURPOSE OTHER THAN CONDUCTING BUSINESS WITH PARKER, AND WILL BE RETURNED AND ALL FURTHER USE DISCONTINUED UPON REQUEST BY PARKER. COPYRIGHT PARKER, YEAR OF COPYRIGHT IS FIRST YEAR INDICATED ON DOCUMENT. ALL RIGHTS RESERVED.</small> | <b>TOLERANCES EXCEPT AS NOTED</b><br>.XX ±.015<br>X.Xmm ±.38mm<br>.XXX ±.005<br>XX.XXmm ±.13mm<br><br>ANGULAR ±1°<br>63/ SURFACE ROUGHNESS OR BETTER | ENG. APVD.: DATE:<br><br>CHKD BY: DATE:<br><br>DRAWN BY: DATE:<br><b>J. K. 2/26/85</b><br><br>MATL: |  <b>Parker Hannifin Corporation</b><br>Filtration and Separation Division<br>Haverhill, Massachusetts USA |  |
|   |  | <b>SEE NOTES 1, 4</b><br><br><b>REMOVE ALL BURRS AND SHARP EDGES</b>                                | <b>TIE ROD</b><br><br>FINISH: -----<br><br>P/N: SEE TABLE  |  |

4

3

2

1

| REVISIONS |         |                      |      |      |
|-----------|---------|----------------------|------|------|
| REV       | ECN.NO. | DESCRIPTION          | NAME | DATE |
| F         |         | ADDED MATERIAL SPEC. | JD   | 6/12 |

D

D

C

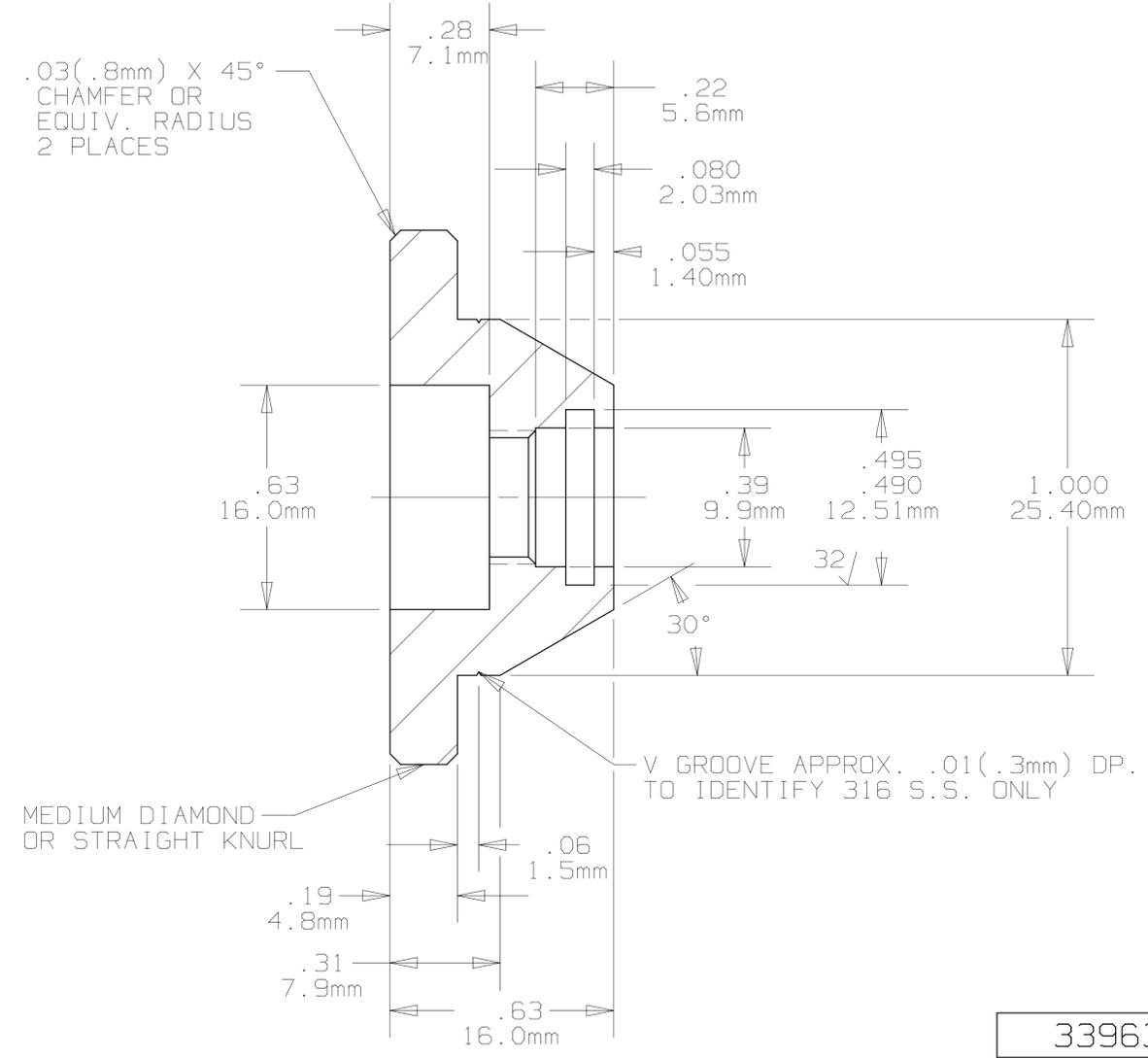
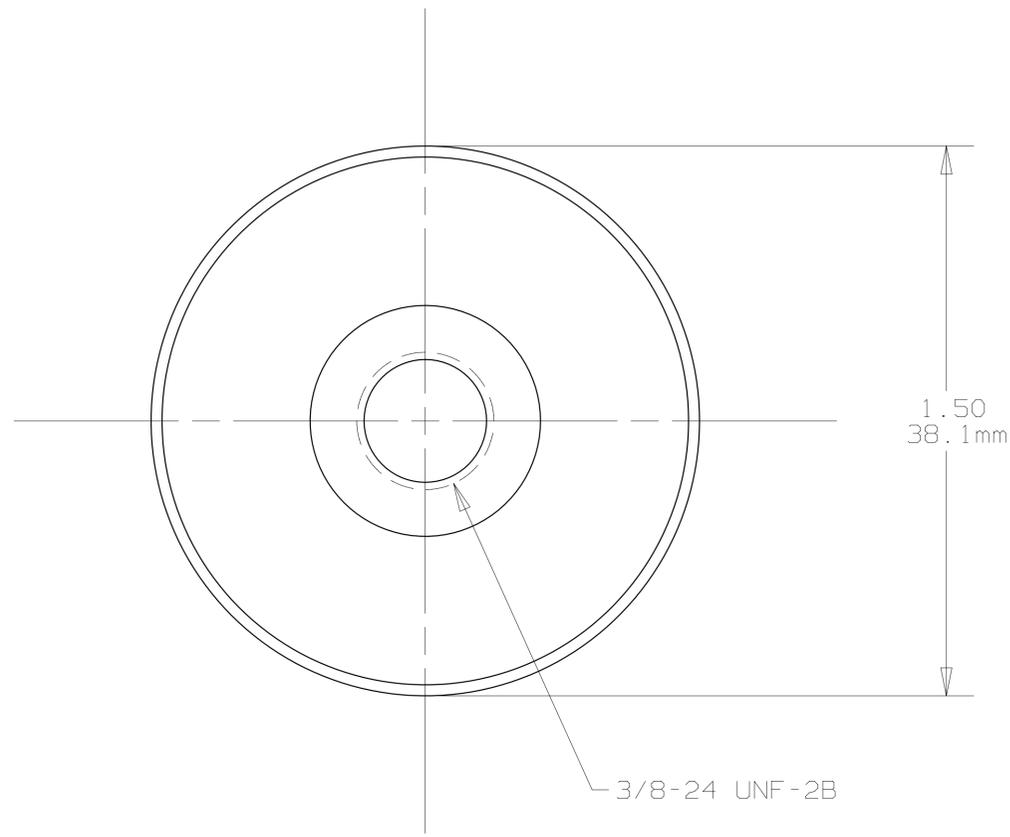
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B

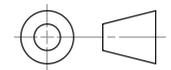
B

A

A



|          |                 |
|----------|-----------------|
| 33963    | ELECTROPOLISHED |
| 33963-1  | AS MACHINED     |
| PART NO. | DESCRIPTION     |

|   |                                 |                     |                |   |              |
|---|---------------------------------|---------------------|----------------|---|--------------|
| THIRD ANGLE PROJECTION  | TOLERANCES EXCEPT AS NOTED      | ENG. APVD.:         | DATE:          |   |              |
|    | .XX ±.015<br>X.Xmm ±.38mm       | CH'KD BY:           | DATE:          | TITLE: ELEMENT RETAINER   |              |
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|   | ANGULAR ±1°                     | J.K.                | 2/27/85        | MODEL NO.: 33 & 45  |              |
|   | 63/ SURFACE ROUGHNESS OR BETTER | MAT'L: SA-479 316SS | P/N: SEE TABLE |   | SCALE: 2 : 1 |
| REMOVE ALL BURRS AND SHARP EDGES.   |                                 | DWG. NO.: B-11730   |                |   |              |

4

3

2

1

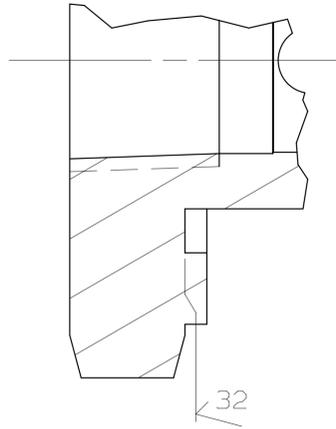
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3

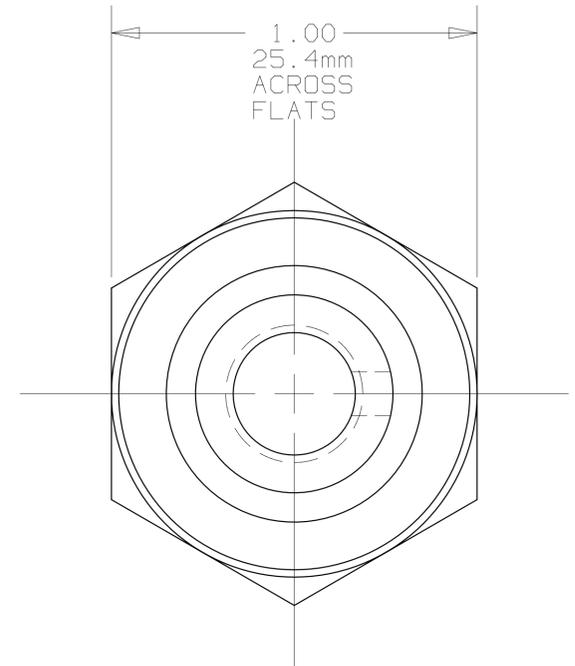
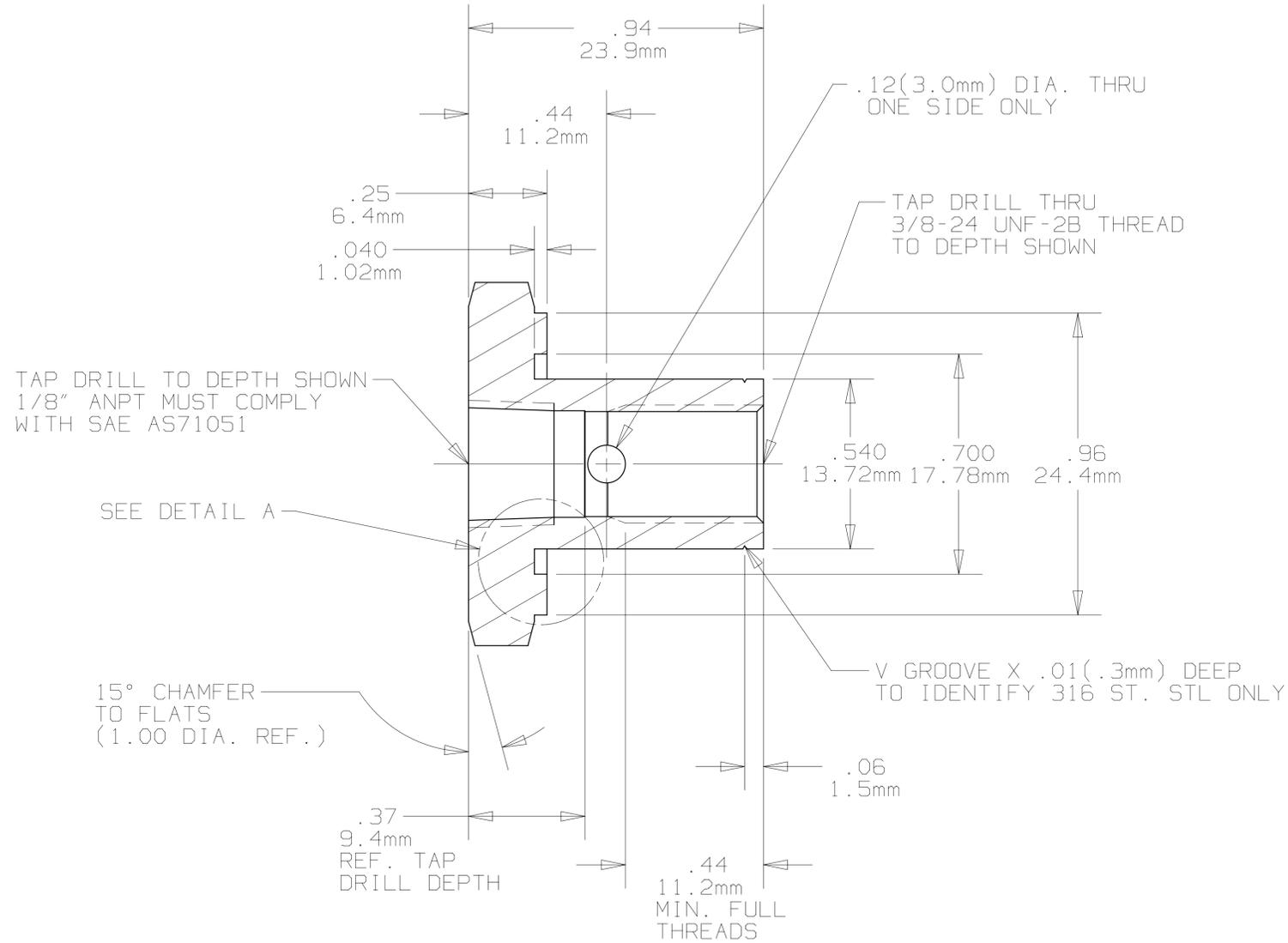
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1

| REVISIONS |         |                |      |      |
|-----------|---------|----------------|------|------|
| REV       | ECN.NO. | DESCRIPTION    | NAME | DATE |
| E         | 1076    | CHANGE PER ECN | PES  | 9/01 |
| F         |         | REVISED NOTE 1 | J.D. | 6/12 |



**DETAIL A**  
SCALE 3 : 1



|          |                 |
|----------|-----------------|
| 33267    | ELECTROPOLISHED |
| 33267-1  | AS FABRICATED   |
| PART NO. | DESCRIPTION     |

NOTES:

1. SA-479 TYPE 316, MATERIAL CERTIFICATION REQUIRED.

|   |  |                             |                 |  |         |
|---|--|-----------------------------|-----------------|--|---------|
| THIRD ANGLE PROJECTION  | TOLERANCES EXCEPT AS NOTED   | ENG. APVD.:                 | DATE:           | <br><small>Parker Hannifin Corporation<br/>Filtration and Separation Division<br/>Tewksbury, Massachusetts USA</small><br> |         |
|   | .XX ±.015<br>X.Xmm ±.38mm<br><br>.XXX ±.005<br>XX.XXmm ±.13mm<br><br>ANGULAR ±1°<br>63/√ SURFACE ROUGHNESS OR BETTER | CH'KD BY:                   | DATE:           |  |         |
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|   |  | 316 ST. STL.<br>SEE NOTE 1. | REDRAWN 8/31/94 | TIENUT   |         |
|   |  | FINISH:                     | MODEL NO.:      | SCALE:   | SHEET:  |
|   |  | SEE TABLE                   | 33 & 45         | 2 : 1  | 1 OF 1  |
|   |  | P/N:                        | DWG. NO.:       | SEE TABLE  | B-11731 |

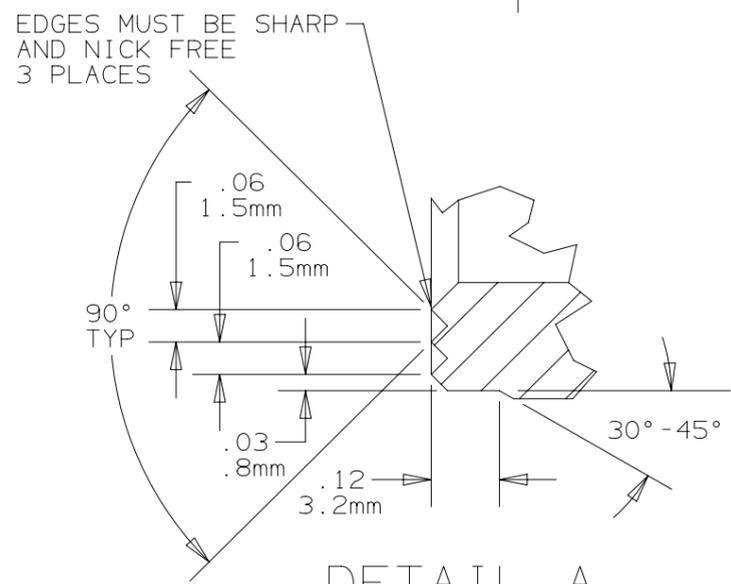
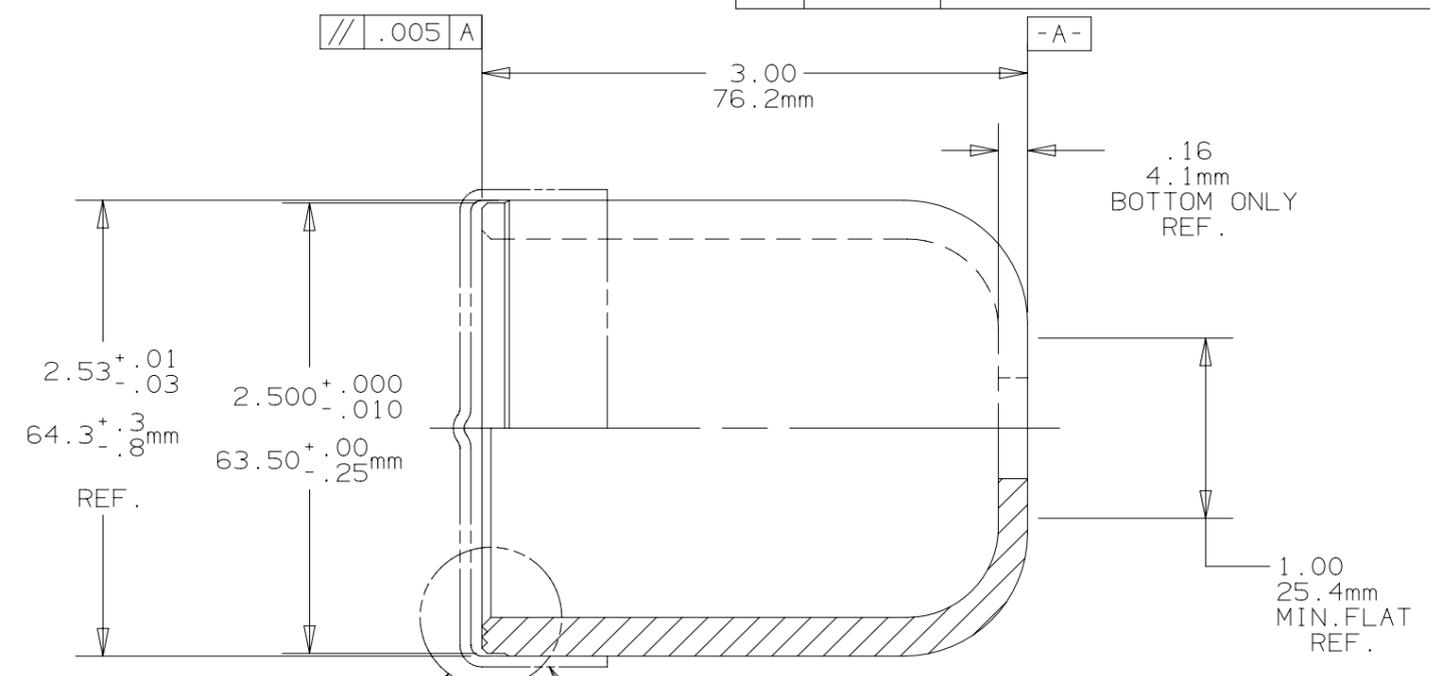
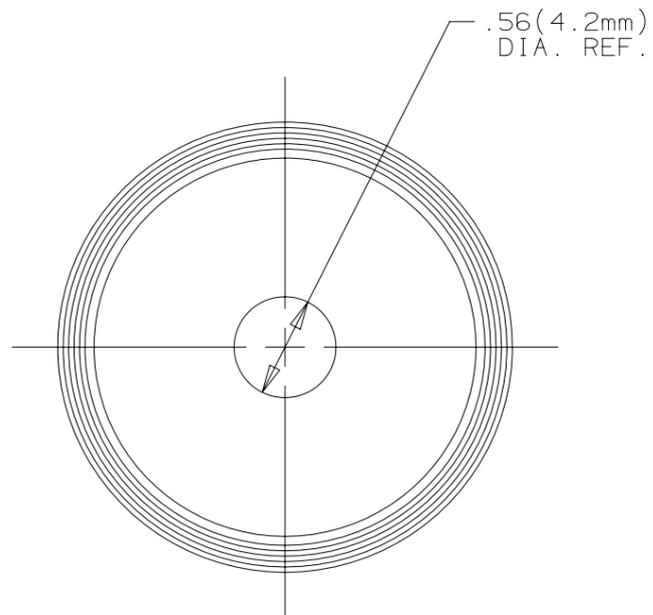
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3

2

1

| REVISIONS |         |                                 |      |       |
|-----------|---------|---------------------------------|------|-------|
| REV       | ECN.NO. | DESCRIPTION                     | NAME | DATE  |
| A         | 0564    | NOTE 2. REMOVE ALL PROCESS OILS | R.B. | 6/93  |
| B         | 0909    | REVISED PER ECN                 | EHS. | 3/99  |
| C         | 1657    | REVISED PER ECN                 | CB   | 08/07 |



DETAIL A  
SCALE = 3 : 1

SEE DETAIL A  
P/N 21233 PROTECTIVE CAP (SUPPLIED BY PARKER) MUST BE INSTALLED BEFORE SHIPPING SEE NOTE 2.

| 33160    | BUFFED TO A HIGH LUSTRE       |
|----------|-------------------------------|
| 33160-1  | AS MACHINED & ELECTROPOLISHED |
| PART NO. | DESCRIPTION                   |

SEE NOTES 1 & 2-

- NOTES:
1. REMOVE ALL PROCESS OILS AND CONTAMINATION.
  2. ALTERNATE METHODS FOR SURFACE PROTECTION MUST BE APPROVED BY PARKER PRIOR TO IMPLEMENTATION BY VENDOR.
  3. MATERIAL CERTIFICATION REQUIRED.

THIRD ANGLE PROJECTION

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TOLERANCES EXCEPT AS NOTED

|         |                             |
|---------|-----------------------------|
| .XX     | ±.015                       |
| X.Xmm   | ±.38mm                      |
| .XXX    | ±.005                       |
| XX.XXmm | ±.13mm                      |
| ANGULAR | ±1°                         |
| 63/     | SURFACE ROUGHNESS OR BETTER |

REMOVE ALL BURRS AND SHARP EDGES.

ENG. APVD.: DATE:

CH'KD BY: DATE:

DRAWN BY: DATE:  
LRS 1-12-88

MAT'L:  
MAKE FROM  
P/N 33160-2  
DWG NO. C-12658

Parker Hannifin Corporation  
Filtration and Separation Division  
Tewksbury, Massachusetts USA

TITLE: FILTER BOWL

FINISH: SEE TABLE

MODEL NO.: MODEL 33

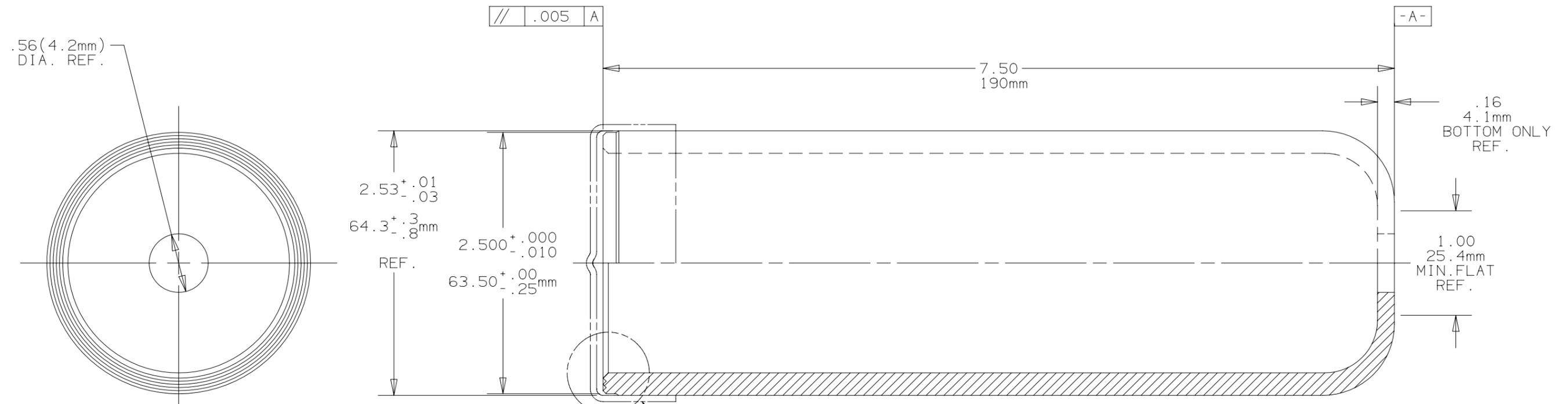
SCALE: 1 : 1

SHEET: 1 OF 1

P/N: SEE TABLE

DWG. NO.: B-12651

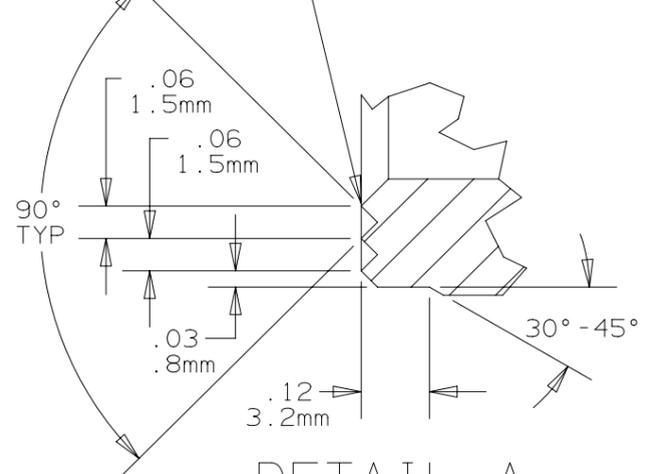
| REVISIONS |         |                               |      |      |
|-----------|---------|-------------------------------|------|------|
| REV       | ECN.NO. | DESCRIPTION                   | NAME | DATE |
| A         | 0512    | HIGH LUSTRE WAS ELECTROPOLISH | MJB  | 11/6 |
| B         | 0564    | ADDED NOTE 2                  | RCB  | 5/88 |
| C         | 0909    | REVISED PER ECN               | EHS  | 3/99 |



EDGES MUST BE SHARP AND NICK FREE 3 PLACES

SEE DETAIL A

P/N 21233 PROTECTIVE CAP (SUPPLIED BY PARKER) MUST BE INSTALLED BEFORE SHIPPING SEE NOTE 2.



DETAIL A  
SCALE = 3 : 1

- NOTES:
- REMOVE ALL PROCESS OILS AND CONTAMINATION.
  - ALTERNATE METHODS FOR SURFACE PROTECTION MUST BE APPROVED BY PARKER PRIOR TO IMPLEMENTATION BY VENDOR.

SEE NOTES 1 & 2-

| PART NO. | DESCRIPTION                   |
|----------|-------------------------------|
| 45160    | BUFFED TO A HIGH LUSTRE       |
| 45160-1  | AS MACHINED & ELECTROPOLISHED |

|   |  |  |           |   |
|---|--|--|-----------|---|
| THIRD ANGLE PROJECTION  | TOLERANCES EXCEPT AS NOTED   | ENG. APVD.:                              | DATE:     | <br>Parker Hannifin Corporation<br>Filtration and Separation Division<br>Haverhill, Massachusetts USA<br> |
|   | .XX ±.015<br>X.Xmm ±.38mm  | CH'KD BY:                                | DATE:     |   |
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|   | REMOVE ALL BURRS AND SHARP EDGES.  | MAKE FROM P/N 45160-2 (DWG. NO. C-12659) | LRS       | 1-12-88   |
|   |  | MAT'L:                                   | FINISH:   | MODEL NO.:  |
|   |  |  | SEE TABLE | MODEL 45  |
|   |  | P/N:                                     | SEE TABLE | SCALE:  |
|   |  |  |           | 1 : 1   |
|   |  |  |           | SHEET:  |
|   |  |  |           | 1 OF 1  |
|   |  |  |           | DWG. NO.:   |
|   |  |  |           | B-12652   |