

# **TELEMARK** 246 Multi Pocket E-Beam Source Drawings

The current version of this drawing pdf can be found at

<https://telemark.com/electron-beam-sources/r-and-d-multi-pocket-sources/>

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# Reference Dimensions

## **E-Beam Source**

A

B

C

D

E

F

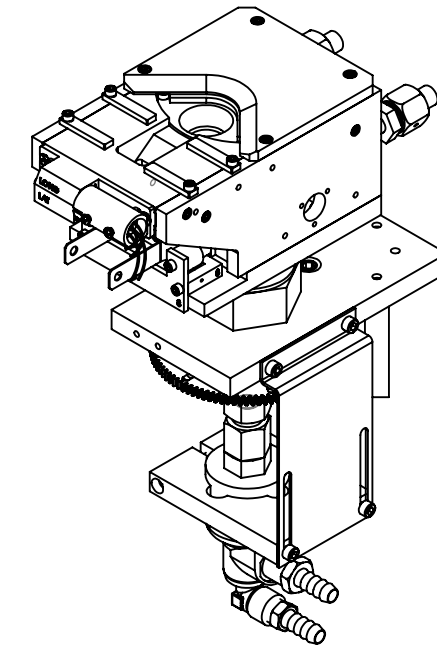
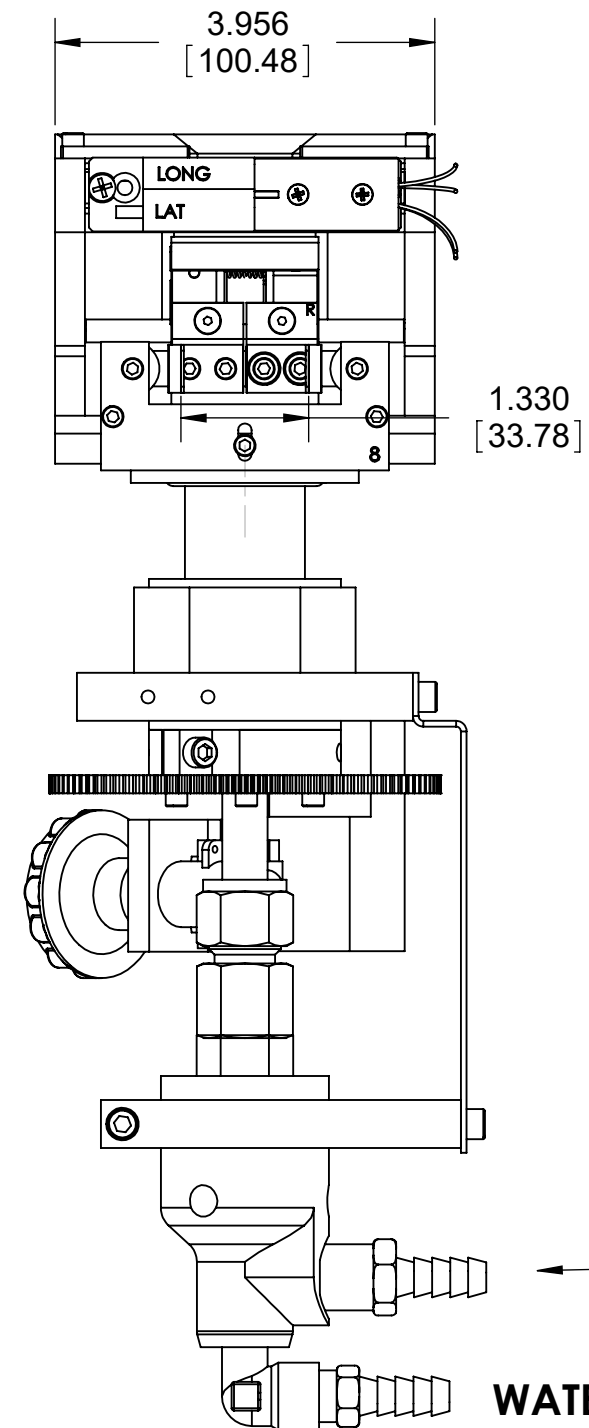
G

| ECN    | ZONE | REV | DESCRIPTION                 | BY  | DATE      |
|--------|------|-----|-----------------------------|-----|-----------|
|        |      | A   | RELEASE                     | PWF | 5/11/2010 |
|        |      | B   | UPDATE                      | PWF | 7/30/2010 |
|        |      | B1  | UPDATE                      | PWF | 5/3/2011  |
|        |      | B2  | UPDATE                      | JJT | 3/30/2012 |
| 990893 |      | B3  | UPDATE WATER FLOW DIRECTION | PWF | 5/7/2020  |

WATER FLOW EITHER WAY

1.390 TYP.  
[35.31]EXTERNAL ASSEMBLY  
POSITION ROTATES  
AROUND ROTATION  
CENTER

WATER FLOW EITHER WAY

1.962  
[49.83]1.215  
[30.86]**VACUUM**2X Ø 3/8 TUBE  
INSET .300 [7.62]2.025  
[51.44]7.174  
[182.22]6.435  
[163.45]3.629  
[92.18]1.943  
[49.35]Ø .200  
[5.08]TOP OF POCKET  
3.199  
[81.25]1.189  
[30.20]CHAMBER  
1.00±.25  
[25.40±6.35]**AIR**9.865  
[250.57]OPTIONAL  
MANUAL DRIVE  
PART NUMBER  
267-9025-1**BOLT FEEDTHRU  
PART # SELECTION  
246-99XX-1 Ø 1" BOLT  
246-99XX-2 Ø 1.25" [32mm] BOLT**Ø 1.750  
[44.45]

WATER IN

WATER OUT

INCH [mm]

|   |  |   |                              |                             |                                 |
|---|--|---|------------------------------|-----------------------------|---------------------------------|
| UNLESS OTHERWISE SPECIFIED<br>GLOBAL TOLERANCES   |  | DWG BY<br>CHECK BY<br>PROJ ENG<br>MFG ENG         | DATE<br>DATE<br>DATE<br>DATE | MATERIAL:                   | <b>TELEMARK</b><br>telemark.com |
| INCHES [mm]<br>X +/- .03 [0.762]<br>.XX +/- .01 [0.254]<br>.XXX +/- .005 [0.127]<br>ANGLES +/- .5°<br>SURF FINISH .63 RMS   |  | DO NOT SCALE DRAWING                              |                              | FINISH:                     |                                 |
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| C   |  | SCALE 1:2<br>SHEET 1 of 2                         |                              | DWG NO.<br><b>R246-0001</b> | REV<br><b>B3</b>                |

A

B

C

D

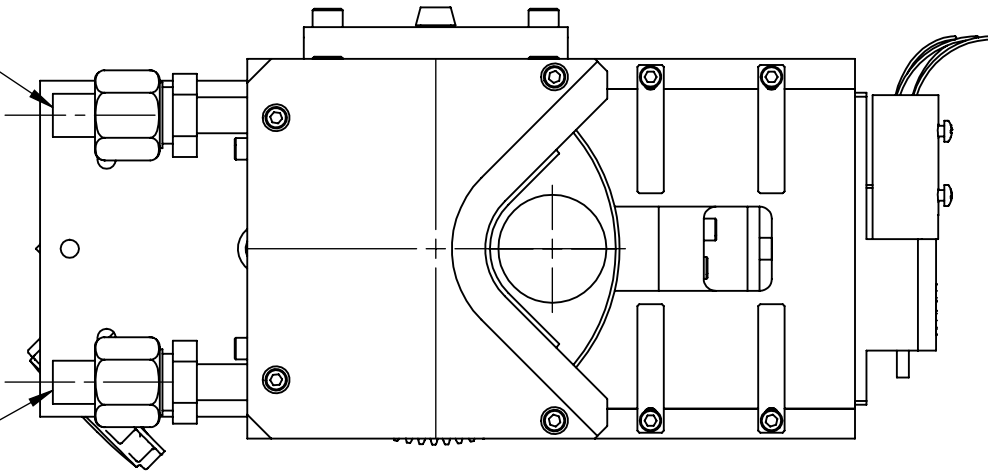
E

F

G

1

WATER FLOW EITHER WAY

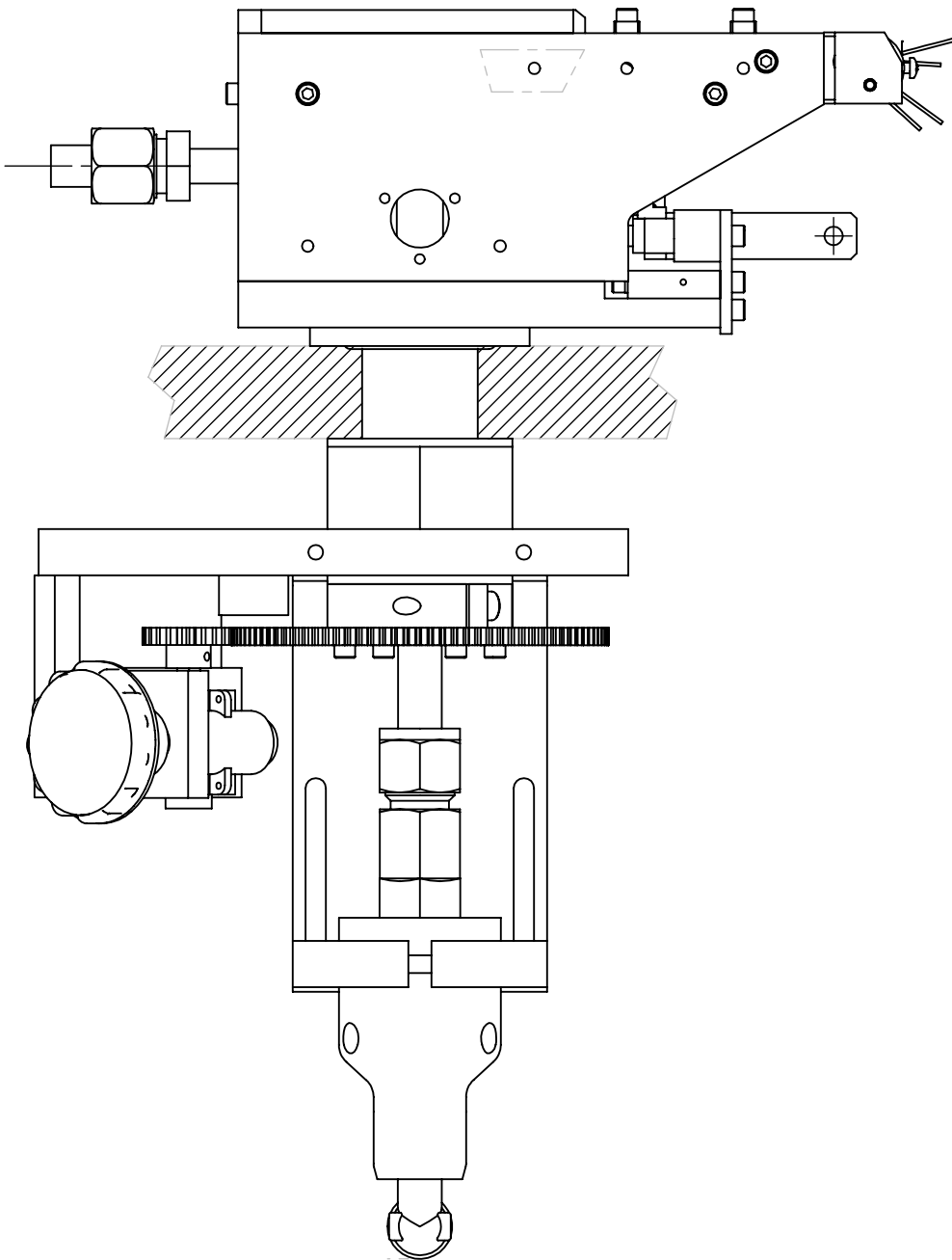


WATER FLOW EITHER WAY

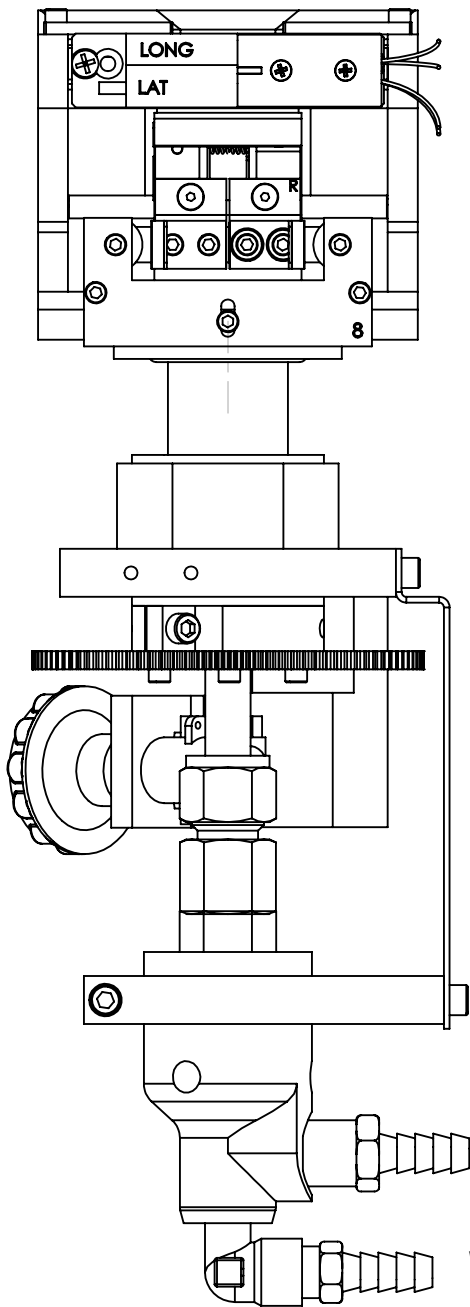
2

# MODEL 246 IMPORTANT WATER LINE CONNECTION INFORMATION

3




4



WATER IN

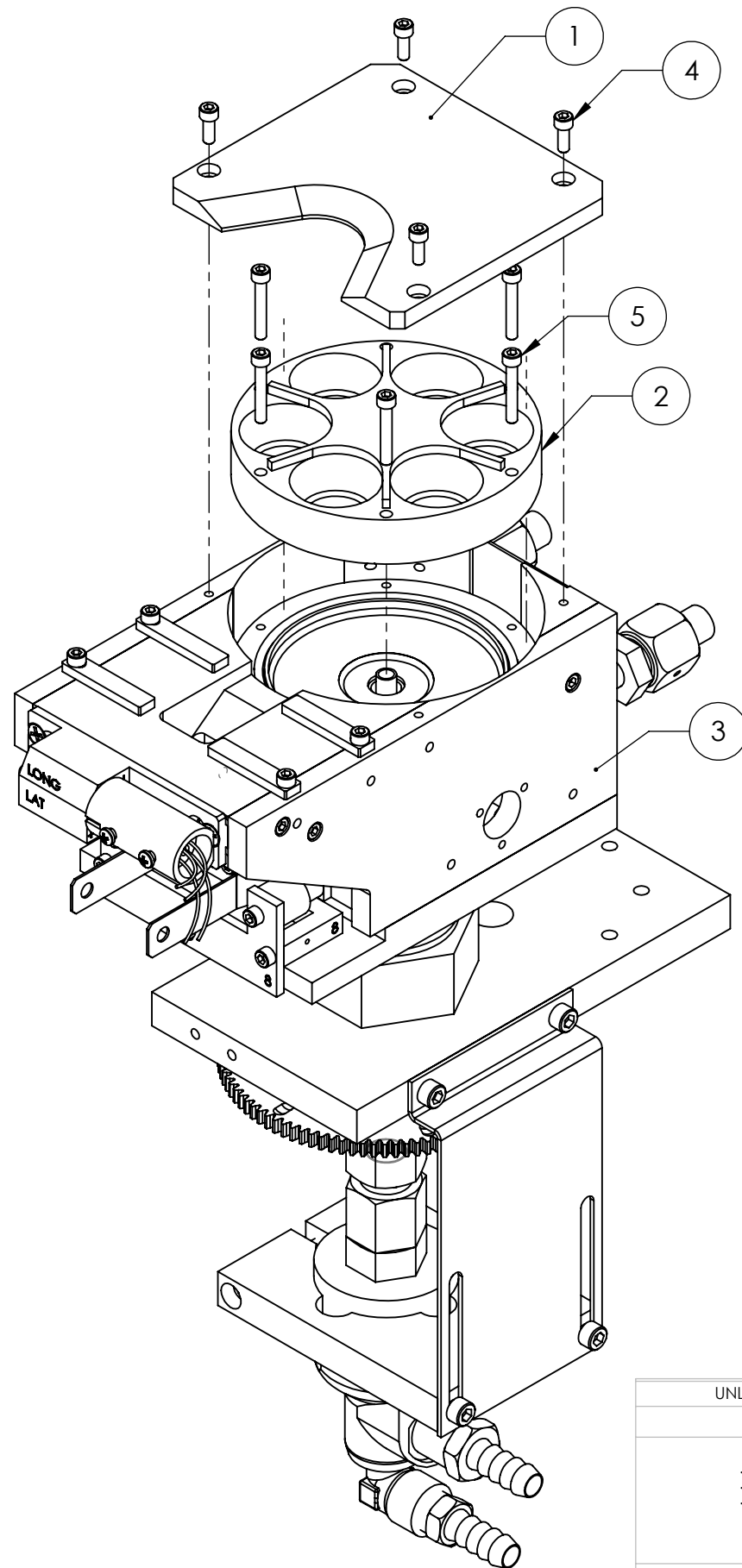
WATER OUT

|  |       |        |                          |          |      |                        |                            |              |   |  |
|--|-------|--------|--------------------------|----------|------|------------------------|----------------------------|--------------|---|--|
| UNLESS OTHERWISE SPECIFIED   |       |        | DWG BY                   | CHECK BY | DATE | MATERIAL:              | <b>TELEMARK</b>            | telemark.com |   |  |
| GLOBAL TOLERANCES  |       |        | PROJ ENG                 | MFG ENG  | DATE |                        |                            |              |   |  |
| INCHES [mm]  |       |        | DATE                     |          |      |                        |                            |              |   |  |
| .X +/- .03 [0.762]   |       |        | DATE                     |          |      |                        |                            |              |   |  |
| .XX +/- 0.01 [0.254]   |       |        | DATE                     |          |      | FINISH:                | <b>MODEL 246 EB SOURCE</b> |              |   |  |
| .XXX +/- 0.005 [0.127]   |       |        | DATE                     |          |      |                        |                            |              |   |  |
| ANGLES +/- .5°   |       |        | DO NOT SCALE DRAWING     |          |      | THIRD ANGLE PROJECTION |                            |              |  |  |
| SURF FINISH 63 RMS   |       |        | FILE NUMBER - 246-0135-x |          |      |                        |                            |              |   |  |
|  |       |        | INITIAL PROJECT - 246    |          |      |                        |                            |              |   |  |
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| <b>C</b>   | SCALE | 1:2    | DWG NO.                  |          | REV  |                        | <b>R246-0001</b>           | <b>B3</b>    |   |  |
|  | SHEET | 2 of 2 |                          |          |      |                        |                            |              |   |  |

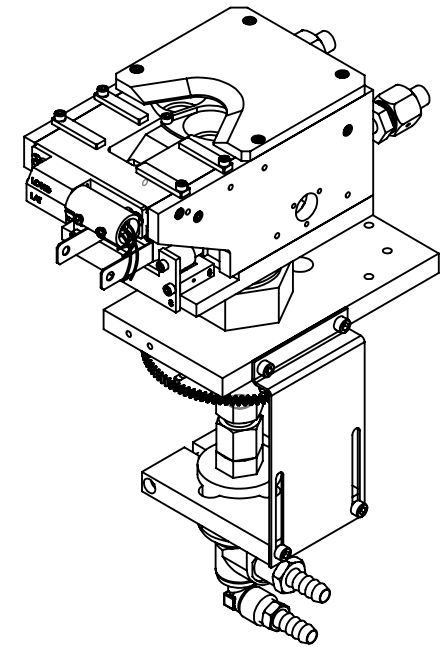


# Model Assemblies



## **E-Beam Sources**



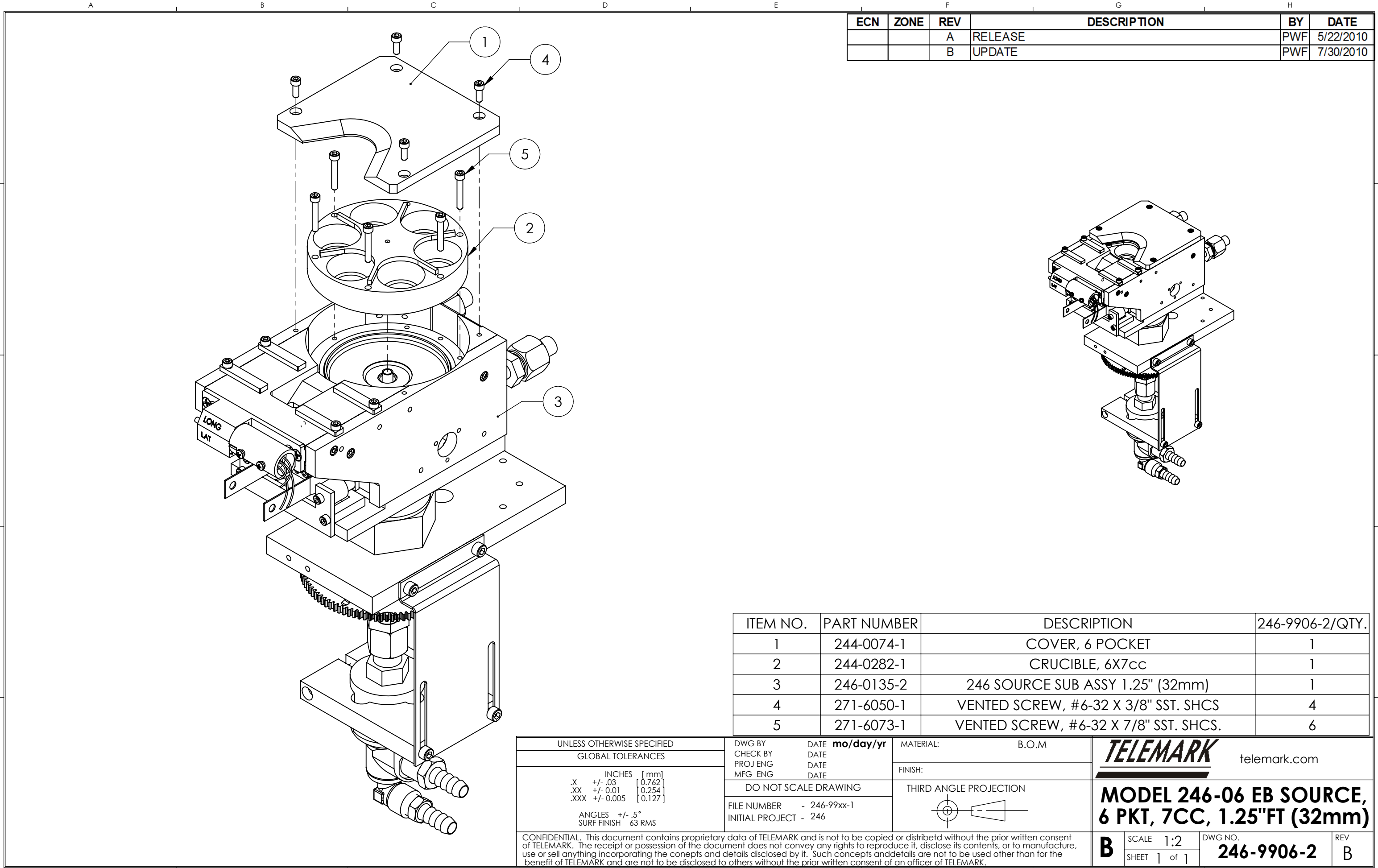
| ECN    | ZONE | REV | DESCRIPTION                       | BY  | DATE      |
|--------|------|-----|-----------------------------------|-----|-----------|
|        |      | A   | RELEASE                           | PWF | 5/22/2010 |
|        |      | B   | UPDATE                            | PWF | 7/30/2010 |
| 990848 |      | C   | P/N FROM 246-0135-2 TO 246-0135-1 | GPD | 1/7/2019  |



| ITEM NO. | PART NUMBER | DESCRIPTION                           | 246-9906-1/QTY. |
|----------|-------------|---------------------------------------|-----------------|
| 1        | 244-0074-1  | COVER, 6 POCKET                       | 1               |
| 2        | 244-0282-1  | CRUCIBLE, 6X7cc                       | 1               |
| 3        | 246-0135-1  | 246 SOURCE SUB ASSY 1"                | 1               |
| 4        | 271-6050-1  | VENTED SCREW, #6-32 UNC X 3/8" SHCS   | 4               |
| 5        | 271-6073-1  | VENTED SCREW, #6-32 X 7/8" SST. SHCS. | 6               |

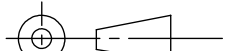
|   |  |                          |  |      |  |                        |  |   |  |   |  |
|---|--|--------------------------|--|------|--|------------------------|--|---|--|---|--|
| UNLESS OTHERWISE SPECIFIED  |  | DWG BY                   |  | DATE |  | MATERIAL:              |  | B.O.M   |  | <br>telemark.com |  |
| GLOBAL TOLERANCES   |  | CHECK BY                 |  | DATE |  | FINISH:                |  |   |  | <b>MODEL 246-06 EB SOURCE,</b><br><b>6 PKT, 7CC, 1" FT</b>  |  |
| INCHES [mm]   |  | PROJ ENG                 |  | DATE |  | THIRD ANGLE PROJECTION |  |  |  |   |  |
| .X +/- .03 [0.762]  |  | MFG ENG                  |  | DATE |  |                        |  |   |  |   |  |
| .XX +/- 0.01 [0.254]  |  | DO NOT SCALE DRAWING     |  |      |  |                        |  |   |  |   |  |
| .XXX +/- 0.005 [0.127]  |  | FILE NUMBER - 246-99xx-1 |  |      |  |                        |  |   |  |   |  |
| ANGLES +/- .5°  |  | INITIAL PROJECT - 246    |  |      |  |                        |  |   |  |   |  |
| SURF FINISH 63 RMS  |  |                          |  |      |  |                        |  |   |  |   |  |
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|   |  |                          |  |      |  |                        |  |   |  | SCALE 1:2<br>SHEET 1 of 1   |  |
|   |  |                          |  |      |  |                        |  |   |  | DWG NO.<br><b>246-9906-1</b>  |  |
|   |  |                          |  |      |  |                        |  |   |  | REV<br><b>C</b>   |  |

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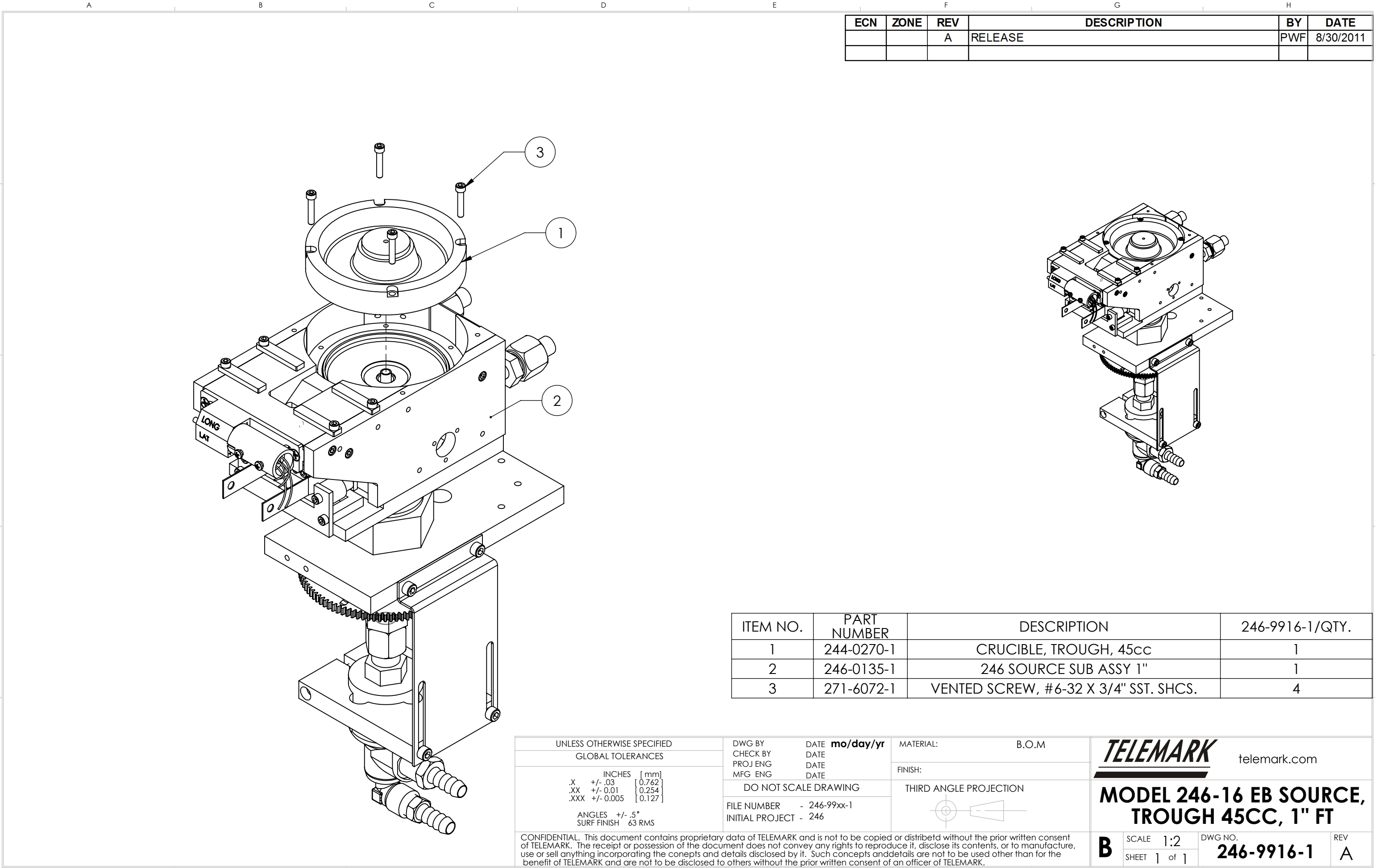


| ECN | ZONE | REV | DESCRIPTION | BY  | DATE      |
|-----|------|-----|-------------|-----|-----------|
|     |      | A   | RELEASE     | PWF | 5/22/2010 |
|     |      | B   | UPDATE      | PWF | 7/30/2010 |

| ITEM NO. | PART NUMBER | DESCRIPTION                           | 246-9906-2/QTY. |
|----------|-------------|---------------------------------------|-----------------|
| 1        | 244-0074-1  | COVER, 6 POCKET                       | 1               |
| 2        | 244-0282-1  | CRUCIBLE, 6X7cc                       | 1               |
| 3        | 246-0135-2  | 246 SOURCE SUB ASSY 1.25" (32mm)      | 1               |
| 4        | 271-6050-1  | VENTED SCREW, #6-32 X 3/8" SST. SHCS  | 4               |
| 5        | 271-6073-1  | VENTED SCREW, #6-32 X 7/8" SST. SHCS. | 6               |

|   |  |                      |  |              |           |   |  |       |  |  |  |
|---|--|----------------------|--|--------------|-----------|---|--|-------|--|--|--|
| UNLESS OTHERWISE SPECIFIED  |  | DWG BY               |  | DATE         | mo/day/yr | MATERIAL:   |  | B.O.M |  | <div>TELEMARK</div> <div>telemark.com</div>                              |  |
| GLOBAL TOLERANCES   |  | CHECK BY             |  | DATE         |           | PROJ ENG  |  | DATE  |  |  |  |
| <div>INCHES [mm]</div> <div>.X +/- .03 [0.762]</div> <div>.XX +/- 0.01 [0.254]</div> <div>.XXX +/- 0.005 [0.127]</div> <div>ANGLES +/- .5°</div> <div>SURF FINISH 63 RMS</div>  |  | MFG ENG              |  | DATE         |           | FINISH:   |  |       |  | <div>MODEL 246-06 EB SOURCE,</div> <div>6 PKT, 7CC, 1.25"FT (32mm)</div> |  |
|   |  | DO NOT SCALE DRAWING |  |              |           | THIRD ANGLE PROJECTION  |  |       |  |  |  |
|   |  | FILE NUMBER          |  | - 246-99xx-1 |           |  |  |       |  | <div>B</div> <div>SCALE 1:2</div> <div>SHEET 1 of 1</div>                |  |
|   |  | INITIAL PROJECT      |  | - 246        |           |   |  |       |  |  |  |
|   |  |                      |  |              |           |   |  |       |  | <div>REV</div> <div>B</div>  |  |
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1

2

3

4

5

A

B

C

D

E

F

G

H

| ECN | ZONE | REV | DESCRIPTION | BY  | DATE      |
|-----|------|-----|-------------|-----|-----------|
|     |      | A   | RELEASE     | PWF | 8/30/2011 |
|     |      |     |             |     |           |

| ITEM NO. | PART NUMBER | DESCRIPTION                            | 246-9916-2/QTY. |
|----------|-------------|--|-----------------|
| 1        | 244-0270-1  | CRUCIBLE, TROUGH, 45cc                 | 1               |
| 2        | 246-0135-2  | 246 SOURCE SUB ASSY 1.25\" (32mm)      | 1               |
| 3        | 271-6072-1  | VENTED SCREW, #6-32 X 3/4\" SST. SHCS. | 4               |

UNLESS OTHERWISE SPECIFIED

GLOBAL TOLERANCES

|      |           |         |
|------|-----------|---------|
|      | INCHES    | [mm]    |
| .X   | +/- .03   | [0.762] |
| .XX  | +/- 0.01  | [0.254] |
| .XXX | +/- 0.005 | [0.127] |

ANGLES

+/- .5°

SURF FINISH

63 RMS

DWG BY

CHECK BY

PROJ ENG

MFG ENG

DATE

DATE

DATE

DATE

mo/day/yr

MATERIAL:

B.O.M

FINISH:

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

FILE NUMBER

- 246-99xx-1

INITIAL PROJECT

- 246

TELEMARK

telemark.com

MODEL 246-16 EB SOURCE,

TROUGH 45cc, 1.25\" FT, 32mm

B

SCALE

1:2

DWG NO.

246-9916-2

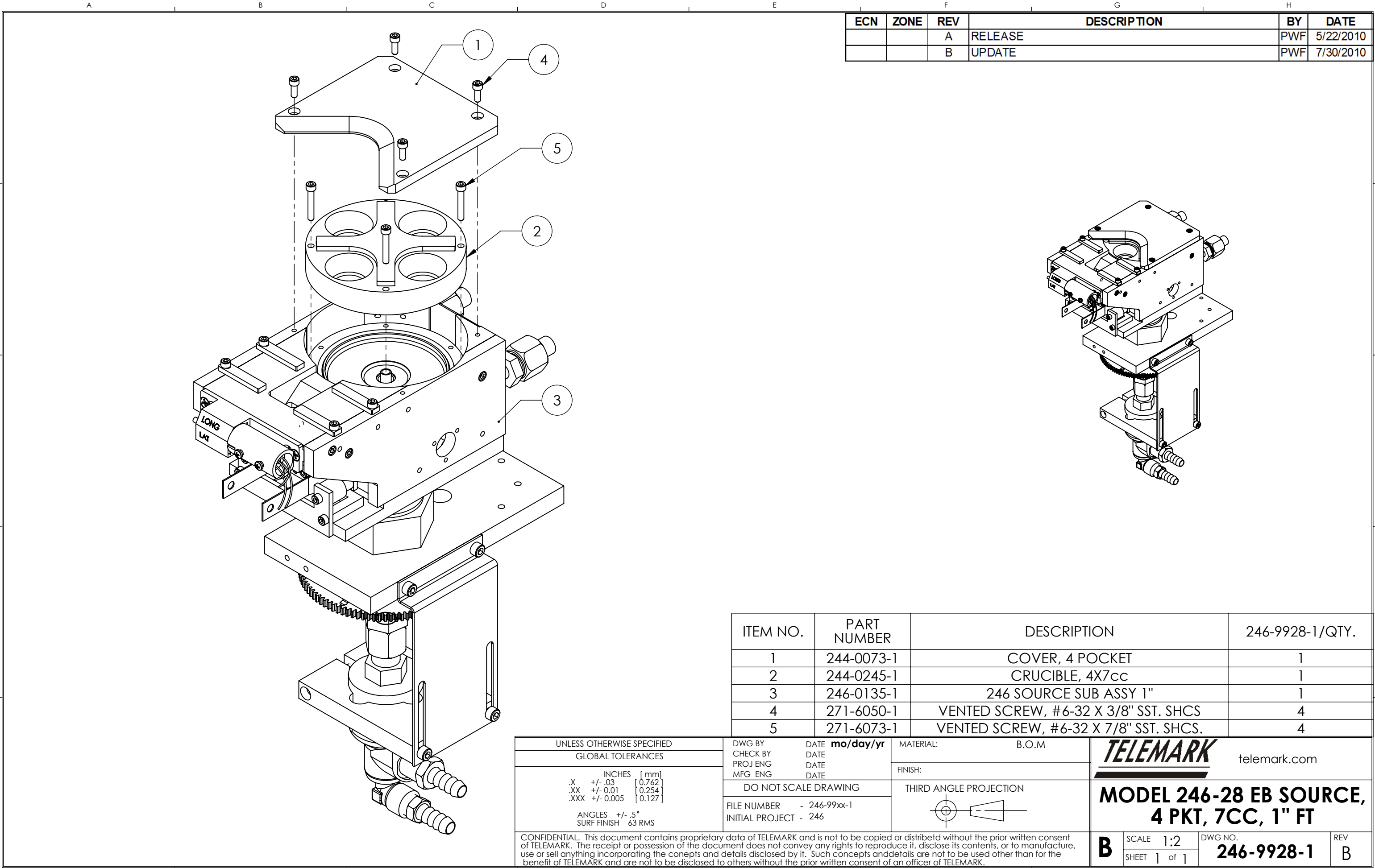
REV

A

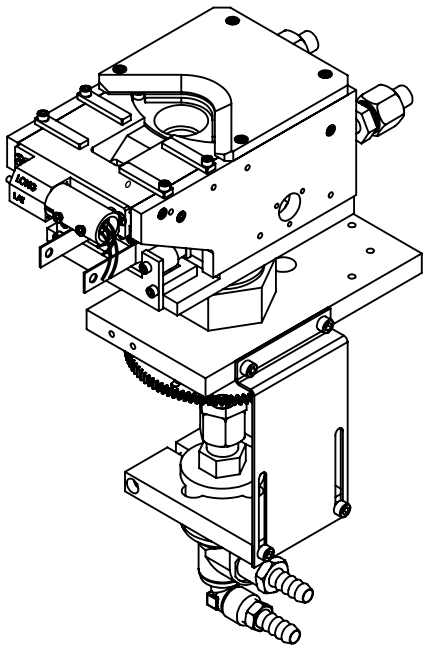
SHEET

1 of 1

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| ECN | ZONE | REV | DESCRIPTION | BY  | DATE      |
|-----|------|-----|-------------|-----|-----------|
|     |      | A   | RELEASE     | PWF | 5/22/2010 |
|     |      | B   | UPDATE      | PWF | 7/30/2010 |



| ITEM NO. | PART NUMBER | DESCRIPTION                           | 246-9928-1/QTY. |
|----------|-------------|---------------------------------------|-----------------|
| 1        | 244-0073-1  | COVER, 4 POCKET                       | 1               |
| 2        | 244-0245-1  | CRUCIBLE, 4X7cc                       | 1               |
| 3        | 246-0135-1  | 246 SOURCE SUB ASSY 1"                | 1               |
| 4        | 271-6050-1  | VENTED SCREW, #6-32 X 3/8" SST. SHCS  | 4               |
| 5        | 271-6073-1  | VENTED SCREW, #6-32 X 7/8" SST. SHCS. | 4               |

UNLESS OTHERWISE SPECIFIED  
GLOBAL TOLERANCES

|                |         |
|----------------|---------|
| INCHES         | [mm]    |
| .X +/- .03     | [0.762] |
| .XX +/- 0.01   | [0.254] |
| .XXX +/- 0.005 | [0.127] |

ANGLES +/- .5°  
SURF FINISH 63 RMS

DWG BY  
CHECK BY  
PROJ ENG  
MFG ENG

DATE  
DATE  
DATE  
DATE

mo/day/yr

DO NOT SCALE DRAWING

FILE NUMBER - 246-99xx-1  
INITIAL PROJECT - 246

MATERIAL: B.O.M

FINISH:

THIRD ANGLE PROJECTION

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**MODEL 246-28 EB SOURCE,  
4 PKT, 7CC, 1" FT**

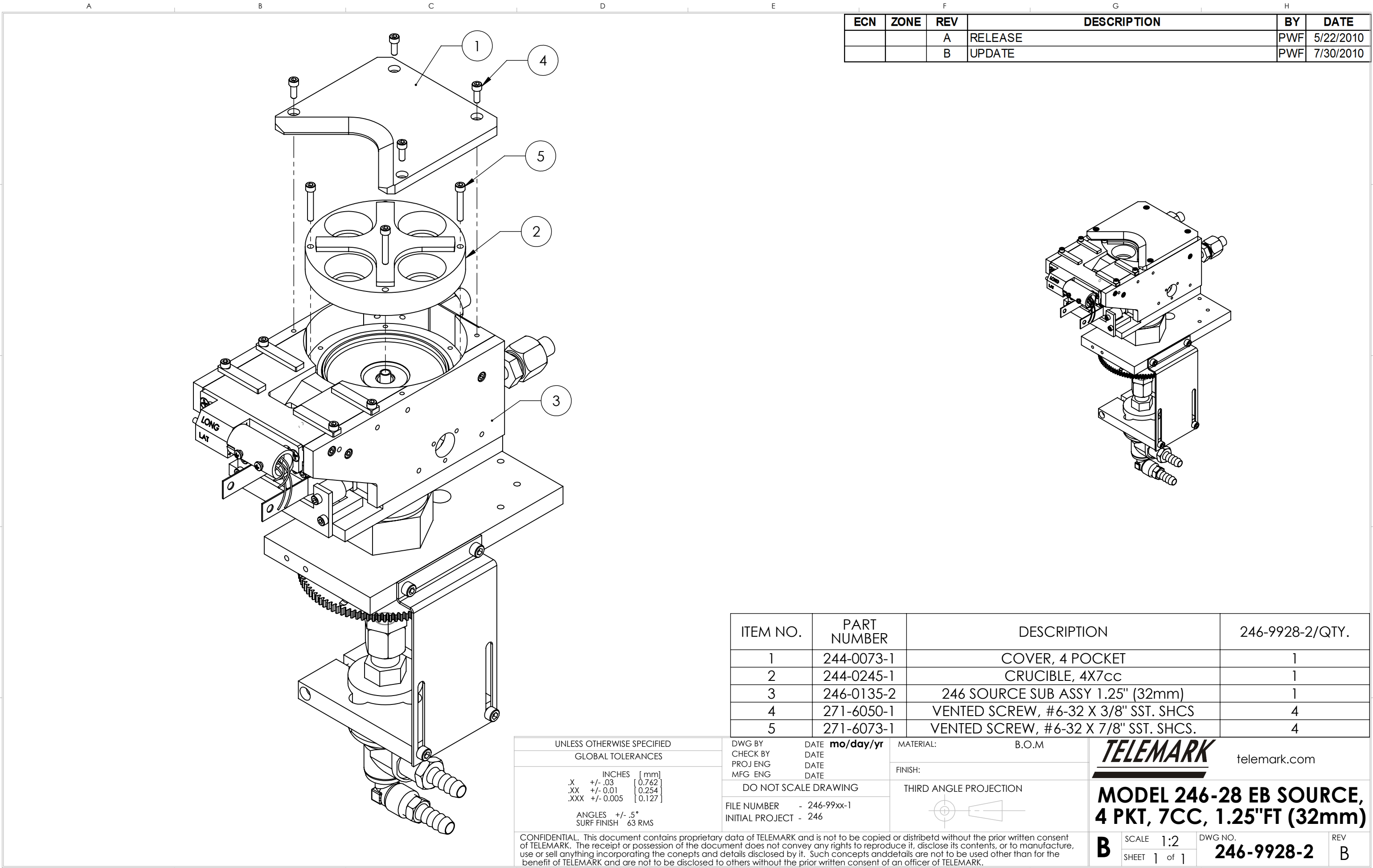
**B**

SCALE 1:2  
SHEET 1 of 1

DWG NO.  
**246-9928-1**

REV  
**B**

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| ECN | ZONE | REV | DESCRIPTION | BY  | DATE      |
|-----|------|-----|-------------|-----|-----------|
|     |      | A   | RELEASE     | PWF | 5/22/2010 |
|     |      | B   | UPDATE      | PWF | 7/30/2010 |

| ITEM NO. | PART NUMBER | DESCRIPTION                           | 246-9928-2/QTY. |
|----------|-------------|---------------------------------------|-----------------|
| 1        | 244-0073-1  | COVER, 4 POCKET                       | 1               |
| 2        | 244-0245-1  | CRUCIBLE, 4X7cc                       | 1               |
| 3        | 246-0135-2  | 246 SOURCE SUB ASSY 1.25" (32mm)      | 1               |
| 4        | 271-6050-1  | VENTED SCREW, #6-32 X 3/8" SST. SHCS  | 4               |
| 5        | 271-6073-1  | VENTED SCREW, #6-32 X 7/8" SST. SHCS. | 4               |

UNLESS OTHERWISE SPECIFIED  
GLOBAL TOLERANCES

|      |           |         |
|------|-----------|---------|
|      | INCHES    | [mm]    |
| .X   | +/- .03   | [0.762] |
| .XX  | +/- 0.01  | [0.254] |
| .XXX | +/- 0.005 | [0.127] |

ANGLES +/- .5°  
SURF FINISH 63 RMS

DWG BY  
CHECK BY  
PROJ ENG  
MFG ENG

DATE  
DATE  
DATE  
DATE

mo/day/yr

DO NOT SCALE DRAWING

FILE NUMBER - 246-99xx-1  
INITIAL PROJECT - 246

MATERIAL: B.O.M

FINISH:

THIRD ANGLE PROJECTION

**TELEMARK**  
telemark.com

**MODEL 246-28 EB SOURCE,  
4 PKT, 7CC, 1.25"FT (32mm)**

**B**

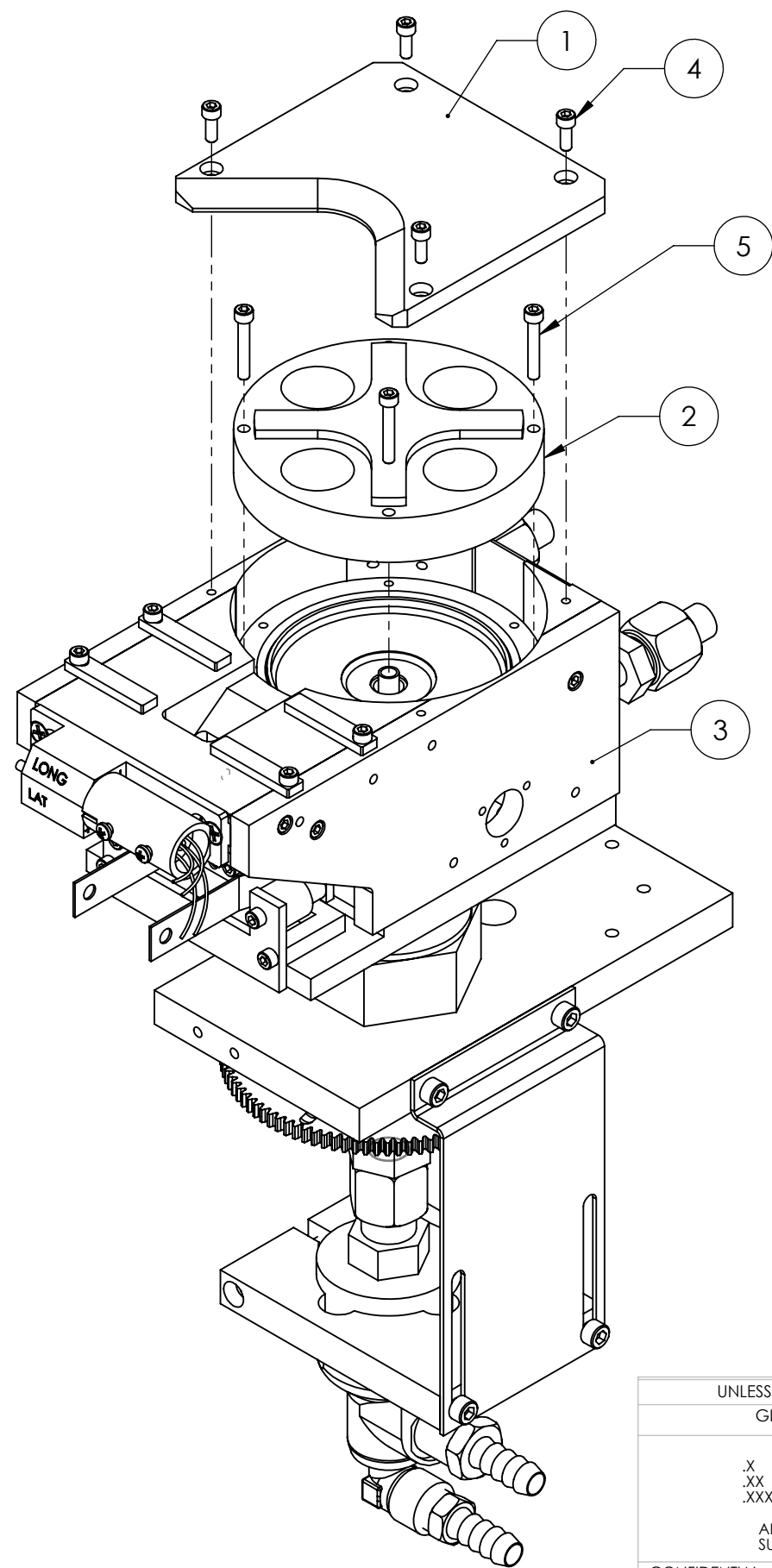
SCALE 1:2  
SHEET 1 of 1

DWG NO.  
**246-9928-2**

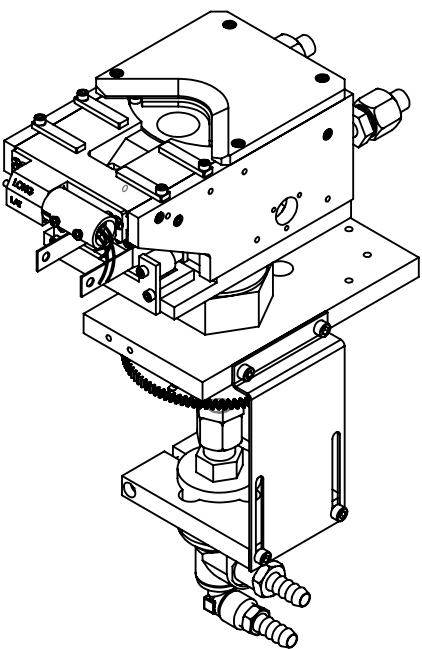
REV  
**B**

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| ECN | ZONE | REV | DESCRIPTION | BY  | DATE      |
|-----|------|-----|-------------|-----|-----------|
|     |      | A   | RELEASE     | PWF | 5/22/2010 |
|     |      | B   | UPDATE      | PWF | 7/30/2010 |



| ITEM NO. | PART NUMBER | DESCRIPTION                           | 246-9964-2/QTY. |
|----------|-------------|---------------------------------------|-----------------|
| 1        | 244-0073-1  | COVER, 4 POCKET                       | 1               |
| 2        | 244-0240-1  | CRUCIBLE, 4X4cc                       | 1               |
| 3        | 246-0135-2  | 246 SOURCE SUB ASSY 1.25" (32mm)      | 1               |
| 4        | 271-6050-1  | VENTED SCREW, #6-32 X 3/8" SST. SHCS  | 4               |
| 5        | 271-6073-1  | VENTED SCREW, #6-32 X 7/8" SST. SHCS. | 4               |

|                            |           |         |
|----------------------------|-----------|---------|
| UNLESS OTHERWISE SPECIFIED |           |         |
| GLOBAL TOLERANCES          |           |         |
|                            | INCHES    | [mm]    |
| .X                         | +/- .03   | [0.762] |
| .XX                        | +/- 0.01  | [0.254] |
| .XXX                       | +/- 0.005 | [0.127] |
| ANGLES +/- .5°             |           |         |
| SURF FINISH 63 RMS         |           |         |

|          |      |           |
|----------|------|-----------|
| DWG BY   | DATE | mo/day/yr |
| CHECK BY | DATE |           |
| PROJ ENG | DATE |           |
| MFG ENG  | DATE |           |

DO NOT SCALE DRAWING

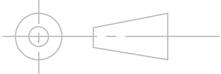
FILE NUMBER - 246-99xx-1

INITIAL PROJECT - 246

MATERIAL: B.O.M

FINISH:

THIRD ANGLE PROJECTION



**TELEMARK**

telemark.com

**MODEL 246-64 SOURCE,  
4 PKT, 4CC, 1.25"FT (32mm)**

**B**

SCALE 1:2  
SHEET 1 of 1

DWG NO.  
**246-9964-2**

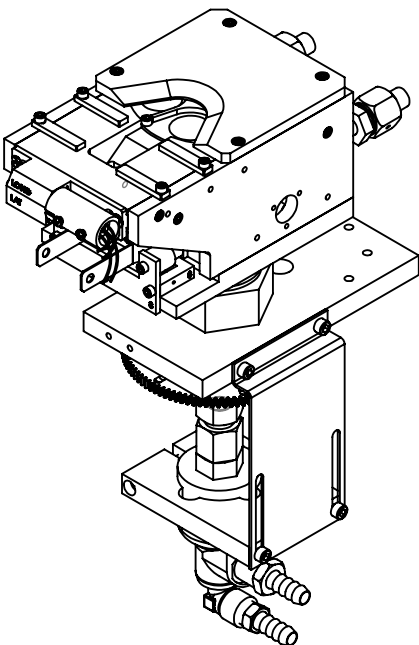
REV  
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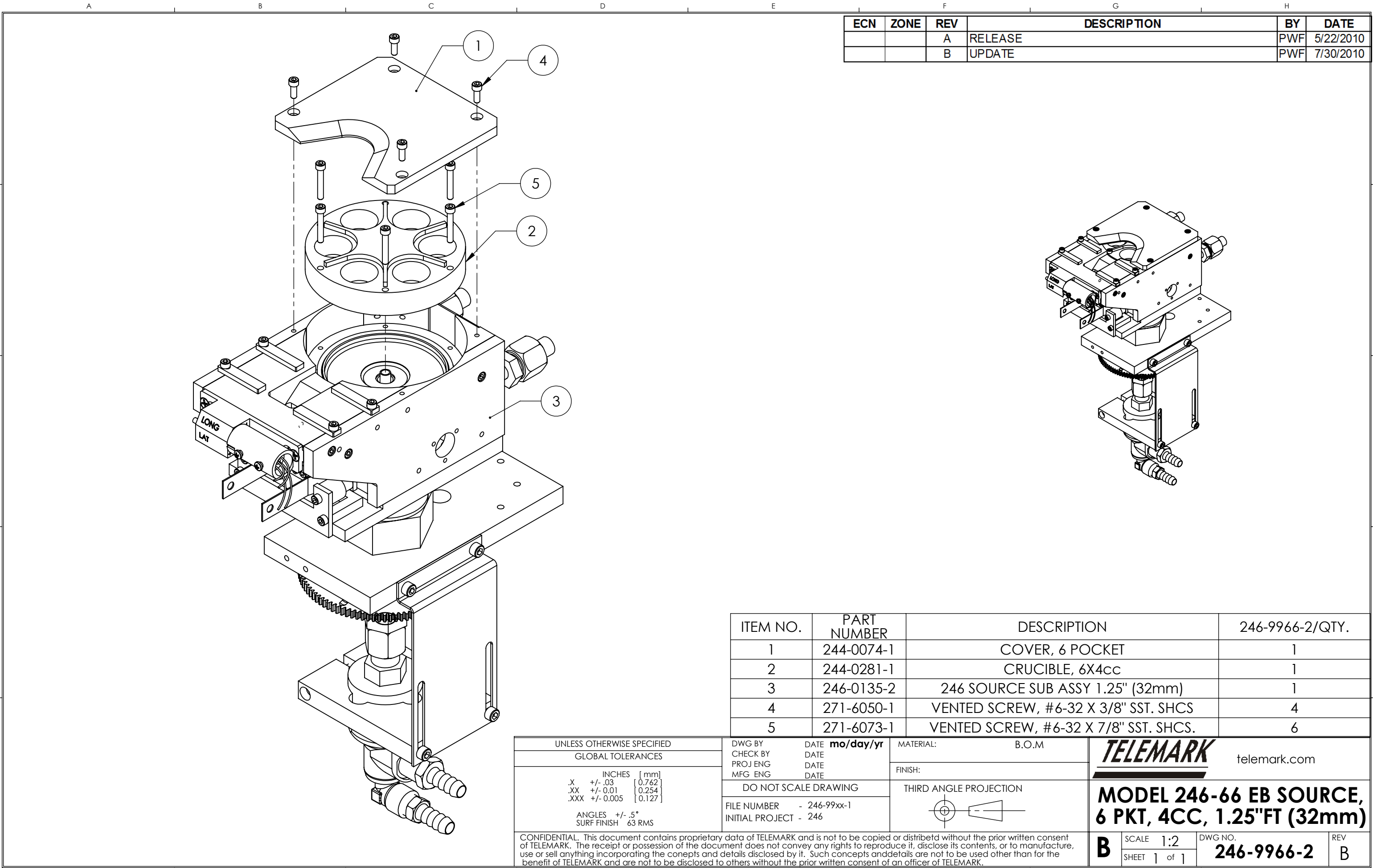


| ECN | ZONE | REV | DESCRIPTION | BY  | DATE      |
|-----|------|-----|-------------|-----|-----------|
|     |      | A   | RELEASE     | PWF | 5/22/2010 |
|     |      | B   | UPDATE      | PWF | 7/30/2010 |



| ITEM NO. | PART NUMBER | DESCRIPTION                           | 246-9966-1/QTY. |
|----------|-------------|---------------------------------------|-----------------|
| 1        | 244-0074-1  | COVER, 6 POCKET                       | 1               |
| 2        | 244-0281-1  | CRUCIBLE, 6X4cc                       | 1               |
| 3        | 246-0135-1  | 246 SOURCE SUB ASSY 1"                | 1               |
| 4        | 271-6050-1  | VENTED SCREW, #6-32 UNC X 3/8" SHCS   | 4               |
| 5        | 271-6073-1  | VENTED SCREW, #6-32 X 7/8" SST. SHCS. | 6               |

|  |  |   |      |           |           |   |  |              |            |     |
|--|--|---|------|-----------|-----------|---|--|--------------|------------|-----|
| UNLESS OTHERWISE SPECIFIED   |  | DWG BY  | DATE | mo/day/yr | MATERIAL: | B.O.M   | <div>TELEMARK</div> telemark.com             |              |            |     |
| GLOBAL TOLERANCES  |  | CHECK BY  | DATE |           | FINISH:   | <div>THIRD ANGLE PROJECTION</div>  | MODEL 246-66 EB SOURCE,<br>6 PKT, 4CC, 1" FT |              |            |     |
| INCHES [mm]<br>.X +/- .03 [0.762]<br>.XX +/- 0.01 [0.254]<br>.XXX +/- 0.005 [0.127]  |  | MFG ENG   | DATE |           |           |   |  |              |            |     |
| ANGLES +/- .5°<br>SURF FINISH 63 RMS   |  | DO NOT SCALE DRAWING<br><br>FILE NUMBER - 246-99xx-1<br>INITIAL PROJECT - 246 |      |           |           |   |  |              |            |     |
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|  |  |   |      |           |           |   |  | SHEET 1 of 1 | 246-9966-1 | B   |



| ECN | ZONE | REV | DESCRIPTION | BY  | DATE      |
|-----|------|-----|-------------|-----|-----------|
|     |      | A   | RELEASE     | PWF | 5/22/2010 |
|     |      | B   | UPDATE      | PWF | 7/30/2010 |

| ITEM NO. | PART NUMBER | DESCRIPTION                           | 246-9966-2/QTY. |
|----------|-------------|---------------------------------------|-----------------|
| 1        | 244-0074-1  | COVER, 6 POCKET                       | 1               |
| 2        | 244-0281-1  | CRUCIBLE, 6X4cc                       | 1               |
| 3        | 246-0135-2  | 246 SOURCE SUB ASSY 1.25" (32mm)      | 1               |
| 4        | 271-6050-1  | VENTED SCREW, #6-32 X 3/8" SST. SHCS  | 4               |
| 5        | 271-6073-1  | VENTED SCREW, #6-32 X 7/8" SST. SHCS. | 6               |

UNLESS OTHERWISE SPECIFIED  
GLOBAL TOLERANCES

|                |         |
|----------------|---------|
| INCHES         | [mm]    |
| .X +/- .03     | [0.762] |
| .XX +/- 0.01   | [0.254] |
| .XXX +/- 0.005 | [0.127] |

ANGLES +/- .5°  
SURF FINISH 63 RMS

DWG BY  
CHECK BY  
PROJ ENG  
MFG ENG

DATE  
DATE  
DATE  
DATE

mo/day/yr

MATERIAL: B.O.M

FINISH:

THIRD ANGLE PROJECTION

FILE NUMBER - 246-99xx-1  
INITIAL PROJECT - 246

**TELEMARK**  
telemark.com

**MODEL 246-66 EB SOURCE,  
6 PKT, 4CC, 1.25"FT (32mm)**

**B**

SCALE 1:2  
SHEET 1 of 1

DWG NO.  
**246-9966-2**

REV  
**B**

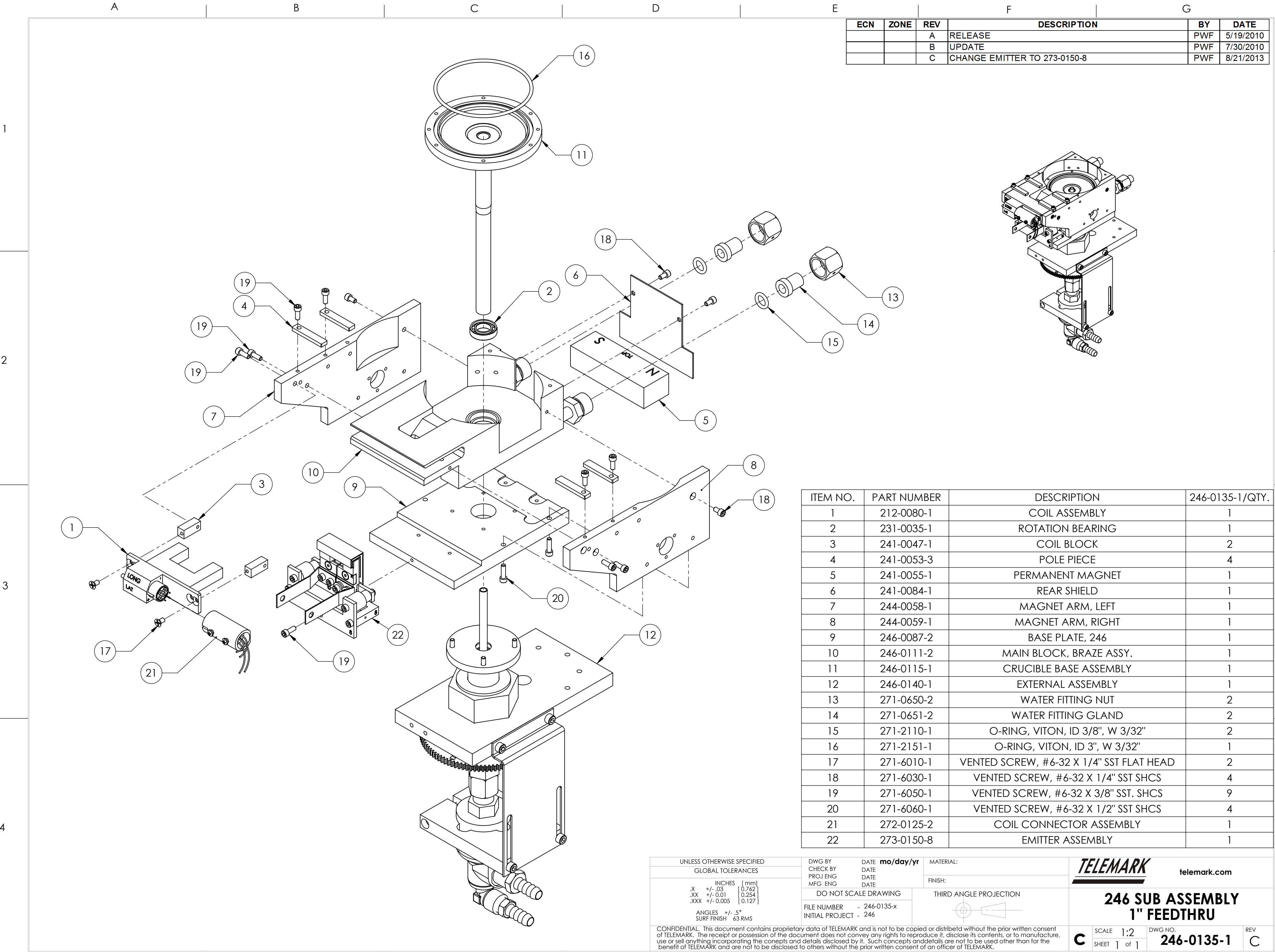
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# Common Assemblies

## **E-Beam Source**



| ECN | ZONE | REV | DESCRIPTION                  | BY  | DATE      |
|-----|------|-----|------------------------------|-----|-----------|
|     |      | A   | RELEASE                      | PWF | 5/19/2010 |
|     |      | B   | UPDATE                       | PWF | 7/30/2010 |
|     |      | C   | CHANGE EMITTER TO 273-0150-8 | PWF | 8/21/2013 |

| ITEM NO. | PART NUMBER | DESCRIPTION                              | 246-0135-1/QTY. |
|----------|-------------|--|-----------------|
| 1        | 212-0080-1  | COIL ASSEMBLY                            | 1               |
| 2        | 231-0035-1  | ROTATION BEARING                         | 1               |
| 3        | 241-0047-1  | COIL BLOCK                               | 2               |
| 4        | 241-0053-3  | POLE PIECE                               | 4               |
| 5        | 241-0055-1  | PERMANENT MAGNET                         | 1               |
| 6        | 241-0084-1  | REAR SHIELD                              | 1               |
| 7        | 244-0058-1  | MAGNET ARM, LEFT                         | 1               |
| 8        | 244-0059-1  | MAGNET ARM, RIGHT                        | 1               |
| 9        | 246-0087-2  | BASE PLATE, 246                          | 1               |
| 10       | 246-0111-2  | MAIN BLOCK, BRAZE ASSY.                  | 1               |
| 11       | 246-0115-1  | CRUCIBLE BASE ASSEMBLY                   | 1               |
| 12       | 246-0140-1  | EXTERNAL ASSEMBLY                        | 1               |
| 13       | 271-0650-2  | WATER FITTING NUT                        | 2               |
| 14       | 271-0651-2  | WATER FITTING GLAND                      | 2               |
| 15       | 271-2110-1  | O-RING, VITON, ID 3/8", W 3/32"          | 2               |
| 16       | 271-2151-1  | O-RING, VITON, ID 3", W 3/32"            | 1               |
| 17       | 271-6010-1  | VENTED SCREW, #6-32 X 1/4" SST FLAT HEAD | 2               |
| 18       | 271-6030-1  | VENTED SCREW, #6-32 X 1/4" SST SHCS      | 4               |
| 19       | 271-6050-1  | VENTED SCREW, #6-32 X 3/8" SST. SHCS     | 9               |
| 20       | 271-6060-1  | VENTED SCREW, #6-32 X 1/2" SST SHCS      | 4               |
| 21       | 272-0125-2  | COIL CONNECTOR ASSEMBLY                  | 1               |
| 22       | 273-0150-8  | EMITTER ASSEMBLY                         | 1               |

UNLESS OTHERWISE SPECIFIED  
GLOBAL TOLERANCES

|     |          |         |
|-----|----------|---------|
|     | INCHES   | [mm]    |
| X   | +/- .03  | [0.762] |
| XX  | +/- .01  | [0.254] |
| XXX | +/- .005 | [0.127] |

ANGLES +/- .5°  
SURF FINISH .63 RMS

DWG BY  
CHECK BY  
PROJ ENG  
MFG ENG

DATE  
DATE  
DATE  
DATE

DO NOT SCALE DRAWING

FILE NUMBER - 246-0135-x  
INITIAL PROJECT - 246

MATERIAL:  
  
FINISH:

THIRD ANGLE PROJECTION

**TELEMARK**  
telemark.com

**246 SUB ASSEMBLY  
1" FEEDTHRU**

C

SCALE 1:2  
SHEET 1 of 1

DWG NO.  
**246-0135-1**

REV  
C

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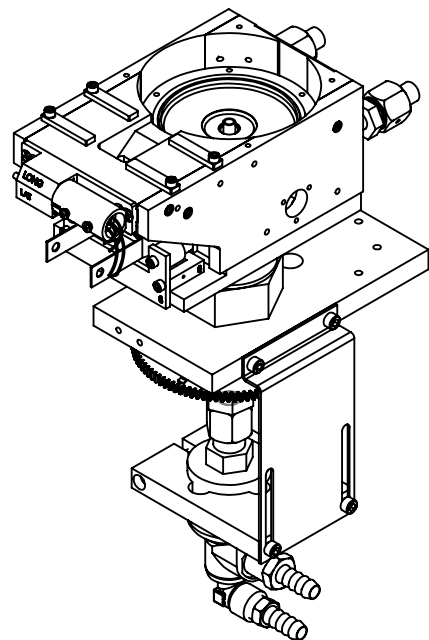
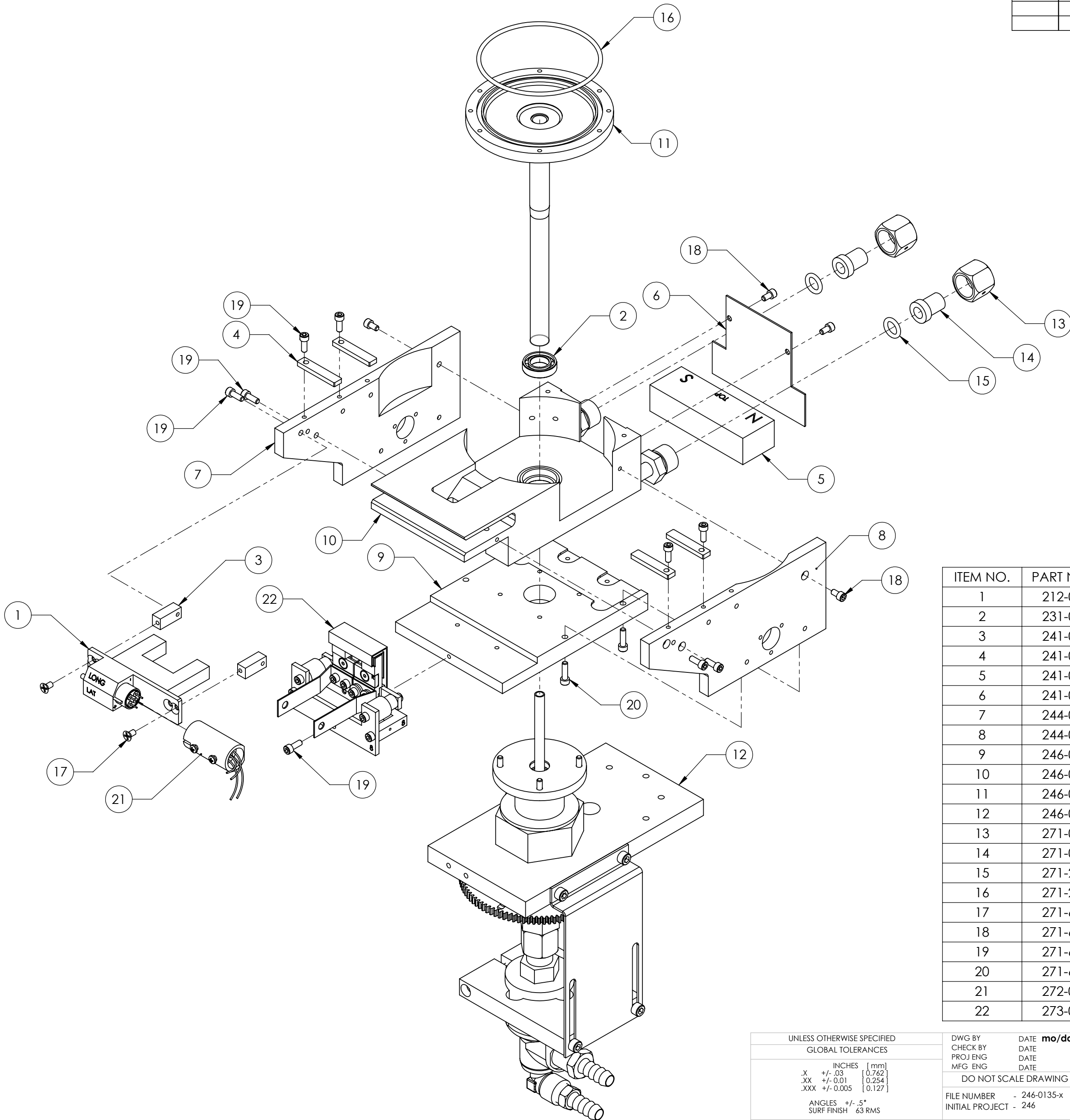
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|-----|------|-----|------------------------------|-----|-----------|
|     |      | A   | RELEASE                      | PWF | 5/19/2010 |
|     |      | B   | UPDATE                       | PWF | 7/30/2010 |
|     |      | C   | CHANGE EMITTER TO 273-0150-8 | PWF | 8/21/2013 |

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| ITEM NO. | PART NUMBER | DESCRIPTION                              | 246-0135-2/QTY. |
|----------|-------------|--|-----------------|
| 1        | 212-0080-1  | COIL ASSEMBLY                            | 1               |
| 2        | 231-0035-1  | ROTATION BEARING                         | 1               |
| 3        | 241-0047-1  | COIL BLOCK                               | 2               |
| 4        | 241-0053-3  | POLE PIECE                               | 4               |
| 5        | 241-0055-1  | PERMANENT MAGNET                         | 1               |
| 6        | 241-0084-1  | REAR SHIELD                              | 1               |
| 7        | 244-0058-1  | MAGNET ARM, LEFT                         | 1               |
| 8        | 244-0059-1  | MAGNET ARM, RIGHT                        | 1               |
| 9        | 246-0087-2  | BASE PLATE, 246                          | 1               |
| 10       | 246-0111-2  | MAIN BLOCK, BRAZE ASSY.                  | 1               |
| 11       | 246-0115-1  | CRUCIBLE BASE ASSEMBLY                   | 1               |
| 12       | 246-0140-2  | EXTERNAL ASSEMBLY                        | 1               |
| 13       | 271-0650-2  | WATER FITTING NUT                        | 2               |
| 14       | 271-0651-2  | WATER FITTING GLAND                      | 2               |
| 15       | 271-2110-1  | O-RING, VITON, ID 3/8", W 3/32"          | 2               |
| 16       | 271-2151-1  | O-RING, VITON, ID 3", W 3/32"            | 1               |
| 17       | 271-6010-1  | VENTED SCREW, #6-32 X 1/4" SST FLAT HEAD | 2               |
| 18       | 271-6030-1  | VENTED SCREW, #6-32 X 1/4" SST SHCS      | 4               |
| 19       | 271-6050-1  | VENTED SCREW, #6-32 X 3/8" SST. SHCS     | 9               |
| 20       | 271-6060-1  | VENTED SCREW, #6-32 X 1/2" SST SHCS      | 4               |
| 21       | 272-0125-2  | COIL CONNECTOR ASSEMBLY                  | 1               |
| 22       | 273-0150-8  | EMITTER ASSEMBLY                         | 1               |

UNLESS OTHERWISE SPECIFIED  
GLOBAL TOLERANCES

INCHES [mm]  
X +/- .03 [0.762]  
.XX +/- .01 [0.254]  
.XXX +/- .005 [0.127]

ANGLES +/- .5°  
SURF FINISH .63 RMS

DWG BY  
CHECK BY  
PROJ ENG  
MFG ENG

DATE mo/day/yr

DATE  
DATE

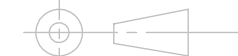
DO NOT SCALE DRAWING

FILE NUMBER - 246-0135-x  
INITIAL PROJECT - 246

MATERIAL:

FINISH:

THIRD ANGLE PROJECTION



**TELEMARK**

telemark.com

**246 SUB ASSEMBLY  
1.25" (32mm) FEEDTHRU**

SCALE 1:2  
SHEET 1 of 1

DWG NO.  
**246-0135-2**

REV  
**C**

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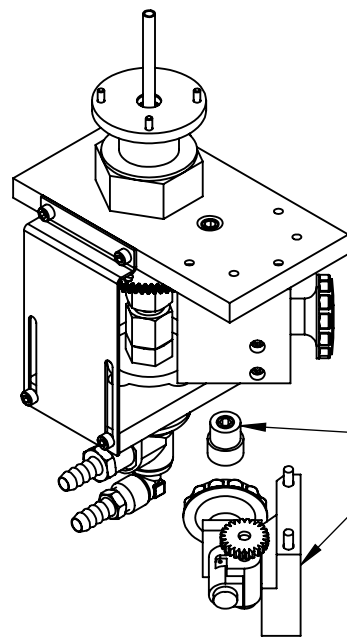
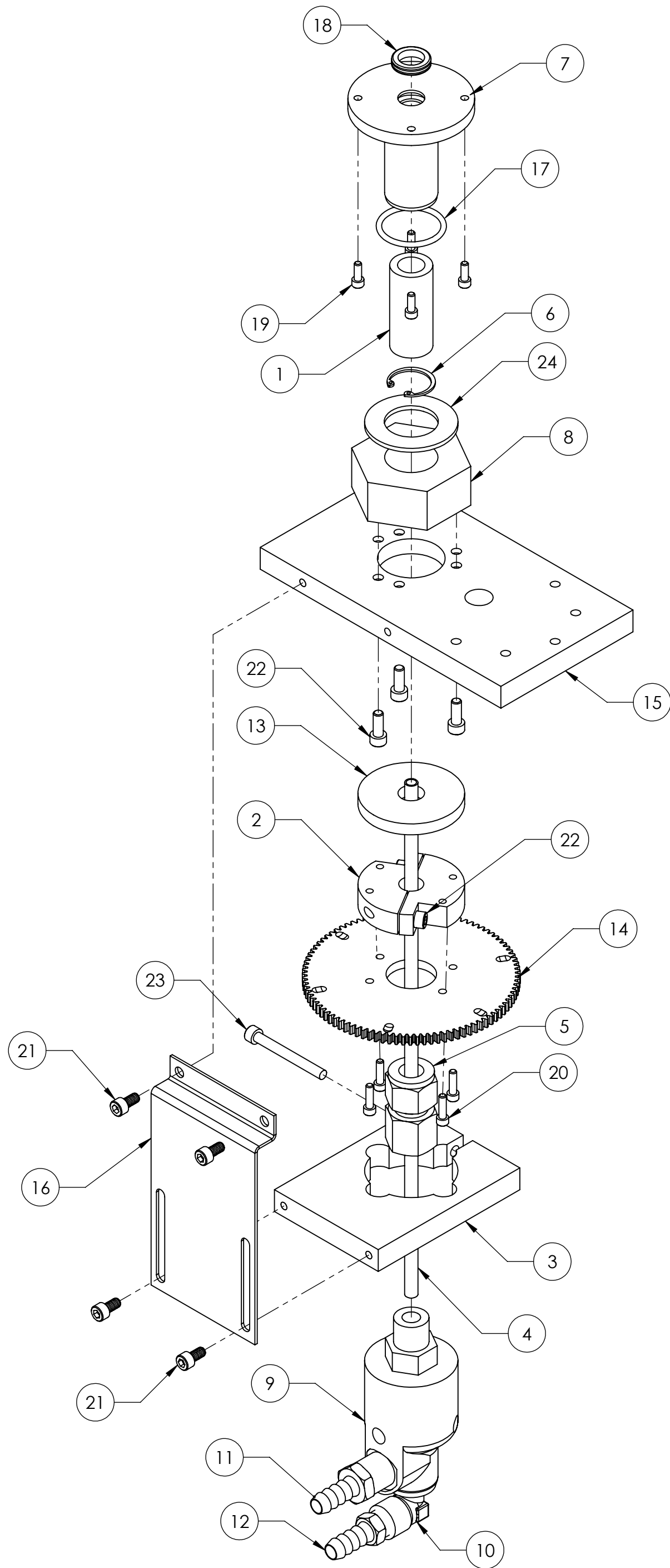
| ECN | ZONE | REV | DESCRIPTION  | BY  | DATE      |
|-----|------|-----|--|-----|-----------|
|     |      | A   | RELEASE  | PWF | 4/8/2010  |
|     |      | B   | FITTING FROM 1/2" TO 12mm, MOFIFING & TURNING OVER 231-0162-1 CLAMP & 267-0160-6 TO 246-0116-6 | GPD | 8/21/2015 |

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OPTIONAL MANUAL DRIVE 267-9025-1

- NOTES:**
- 1. PART NUMBER 231-0456-1 HAS BEEN CHANGED TO REPLACE THE BRASS FERRULES TO NYLON FERRULES.
  - 2. USE 1-1/2 TURNS OF TEFLON TAPE ON NPT FITTINGS.
  - 3. ITEM 4 TUBE TO BE 2.22 INCHES ABOVE ITEM 7 FEEDTHRU.

| ITEM NO. | PART NUMBER | DESCRIPTION  | 246-0140-1/QTY. |
|----------|-------------|--|-----------------|
| 1        | 231-0036-1  | ROTATION BUSHING   | 1               |
| 2        | 231-0162-1  | GEAR CLAMP   | 2               |
| 3        | 231-0170-1  | UNION CLAMP  | 1               |
| 4        | 231-0455-1  | WATER INLET TUBE   | 1               |
| 5        | 231-0456-1  | COMPRESSION FITTING, 12mm X 3/8" NPTF, BRASS, NYLON FERRULES | 1               |
| 6        | 231-0460-1  | RETAINING RING, INTERNAL, 13/16", SST                        | 1               |
| 7        | 231-0470-2  | ROTATION FEEDTHRU  | 1               |
| 8        | 231-0473-1  | FEEDTHRU NUT, 1"   | 1               |
| 9        | 231-4020-1  | WATER UNION  | 1               |
| 10       | 231-4022-1  | ELBOW, 1/4" X 1/4"   | 1               |
| 11       | 231-4023-1  | WATER FITTING 3/8" NPT X 3/8" TUBE                           | 1               |
| 12       | 231-4024-1  | WATER FITTING 1/4" NPT X 3/8" TUBE                           | 1               |
| 13       | 246-0160-6  | MOTOR CLAMP WASHER   | 1               |
| 14       | 267-0149-1  | GEAR   | 1               |
| 15       | 267-0160-1  | MOTOR CLAMP  | 1               |
| 16       | 267-0171-1  | UNION STRAP  | 1               |
| 17       | 271-2122-1  | O-RING, VITON, ID 1-1/8", W 3/32"                            | 1               |
| 18       | 271-4206-1  | QUAD RING, VITON, ID 1/2", W 1/8"                            | 1               |
| 19       | 271-6050-1  | VENTED SCREW, #6-32 UNC X 3/8" SHCS                          | 4               |
| 20       | 271-6060-9  | SCREW, #6-32 X 1/2" SST SHCS                                 | 4               |
| 21       | 271-6145-9  | SCREW, #10-32 UNF X 3/8" SST SHCS                            | 4               |
| 22       | 271-6150-9  | SCREW, #10-32 X 1/2" SST SHCS.                               | 5               |
| 23       | 271-6178-9  | SCREW, #10-32 X 1-3/4" SST SHCS.                             | 1               |
| 24       | 275-0046-1  | WASHER, 1", SST  | 1               |

UNLESS OTHERWISE SPECIFIED  
GLOBAL TOLERANCES

|      |           |         |
|------|-----------|---------|
| .X   | INCHES    | [mm]    |
| XX   | +/- .03   | [0.762] |
| .XXX | +/- 0.01  | [0.254] |
|      | +/- 0.005 | [0.127] |

ANGLES +/- .5°  
SURF FINISH 63 RMS

DWG BY  
CHECK BY  
PROJ ENG  
MFG ENG

DATE  
DATE  
DATE  
DATE

DO NOT SCALE DRAWING

FILE NUMBER - 246-0140-X  
INITIAL PROJECT -

MATERIAL: B.O.M

FINISH: SEE NOTES

THIRD ANGLE PROJECTION

**TELEMARK**  
telemark.com

**EXTERNAL ASSEMBLY  
1" FEEDTHRU**

SCALE 1:2  
SHEET 1 of 1

DWG NO. 246-0140-1

REV B

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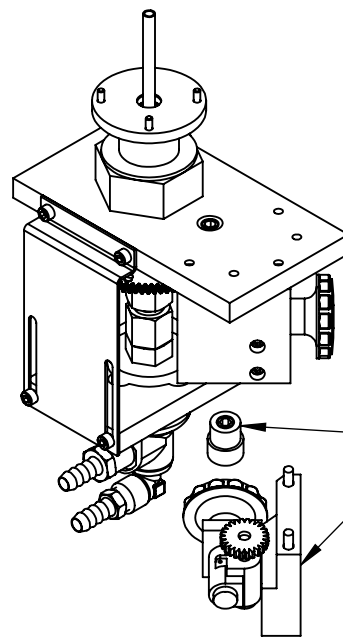
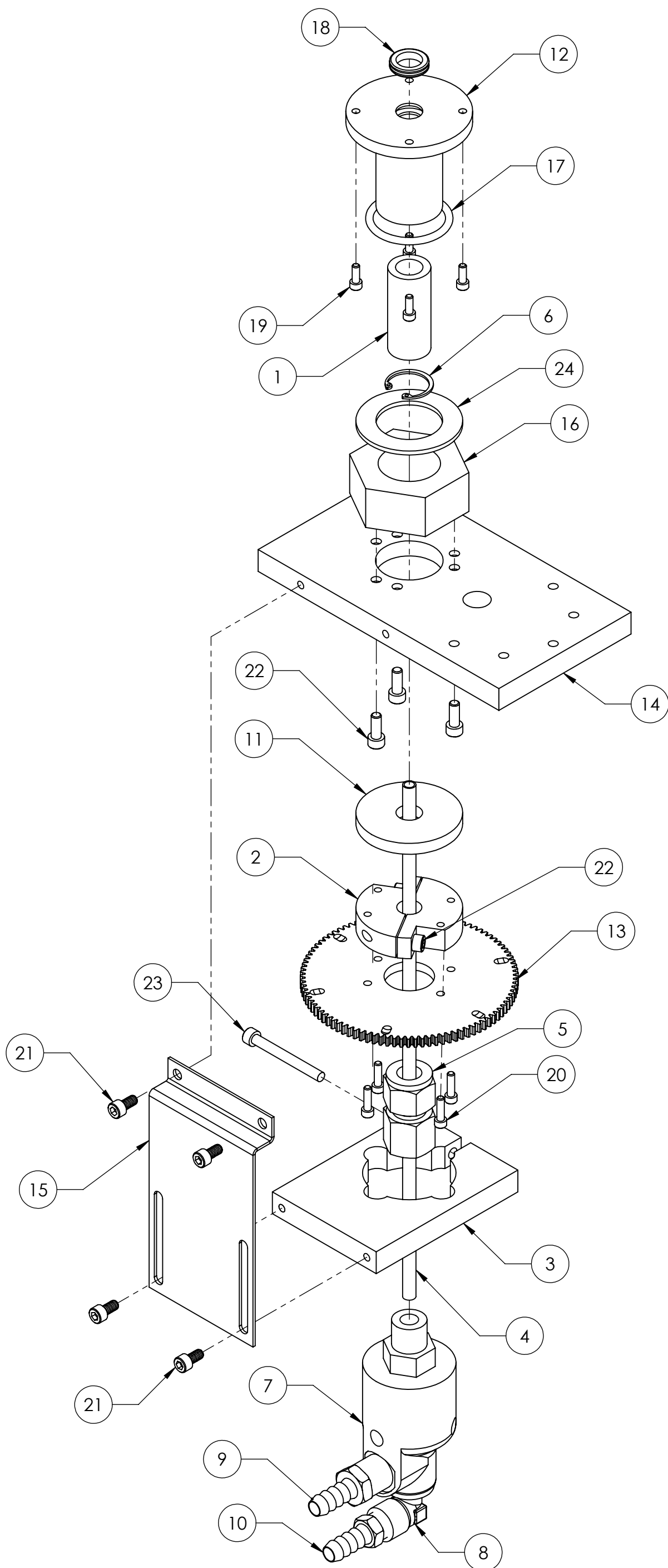
| ECN | ZONE | REV | DESCRIPTION   | BY  | DATE      |
|-----|------|-----|---|-----|-----------|
|     |      | A   | RELEASE   | PWF | 4/8/2010  |
|     |      | B   | FITTING FROM 1/2" TO 12mm, MODIFYING & TURNING OVER 231-0162-1 CLAMP & 267-0160-6 TO 246-0160-6 | GPD | 8/21/2015 |

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OPTIONAL MANUAL DRIVE 267-9025-1

**NOTES:**

- PART NUMBER 231-0456-1 HAS BEEN CHANGED TO REPLACE THE BRASS FERRULES TO NYLON FERRULES.
- USE 1-1/2 TURNS OF TEFLON TAPE ON NPT FITTINGS.
- ITEM 4 TUBE TO BE 2.22 INCHES ABOVE ITEM 12 FEEDTHRU.

| ITEM NO. | PART NUMBER | DESCRIPTION  | 246-0140-2/QTY. |
|----------|-------------|--|-----------------|
| 1        | 231-0036-1  | ROTATION BUSHING   | 1               |
| 2        | 231-0162-1  | GEAR CLAMP   | 2               |
| 3        | 231-0170-1  | UNION CLAMP  | 1               |
| 4        | 231-0455-1  | WATER INLET TUBE   | 1               |
| 5        | 231-0456-1  | COMPRESSION FITTING, 12mm X 3/8" NPTF, BRASS, NLYON FERRULES | 1               |
| 6        | 231-0460-1  | RETAINING RING, INTERNAL, 13/16", SST                        | 1               |
| 7        | 231-4020-1  | WATER UNION  | 1               |
| 8        | 231-4022-1  | ELBOW, 1/4" X 1/4"   | 1               |
| 9        | 231-4023-1  | WATER FITTING 3/8" NPT X 3/8" TUBE                           | 1               |
| 10       | 231-4024-1  | WATER FITTING 1/4" NPT X 3/8" TUBE                           | 1               |
| 11       | 246-0160-6  | MOTOR CLAMP WASHER   | 1               |
| 12       | 246-0470-2  | ROTATION FEEDTHRU, 1-1/4"                                    | 1               |
| 13       | 267-0149-1  | GEAR   | 1               |
| 14       | 267-0160-1  | MOTOR CLAMP  | 1               |
| 15       | 267-0171-1  | UNION STRAP  | 1               |
| 16       | 267-0472-1  | FEEDTHRU NUT   | 1               |
| 17       | 271-2220-1  | O-RING, VITON, ID 1-3/8", W 1/8"                             | 1               |
| 18       | 271-4206-1  | QUAD RING, VITON, ID 1/2", W 1/8"                            | 1               |
| 19       | 271-6050-1  | VENTED SCREW, #6-32 UNC X 3/8" SHCS                          | 4               |
| 20       | 271-6060-9  | SCREW, #6-32 X 1/2" SST SHCS                                 | 4               |
| 21       | 271-6145-9  | SCREW, #10-32 UNF X 3/8" SST SHCS                            | 4               |
| 22       | 271-6150-9  | SCREW, #10-32 X 1/2" SST SHCS.                               | 5               |
| 23       | 271-6178-9  | SCREW, #10-32 X 1-3/4" SST SHCS.                             | 1               |
| 24       | 275-0046-2  | WASHER, 1.25"  | 1               |

UNLESS OTHERWISE SPECIFIED  
GLOBAL TOLERANCES

|      |        |         |
|------|--------|---------|
| X    | ±.03   | [0.762] |
| .XX  | ±.001  | [0.254] |
| .XXX | ±.0005 | [0.127] |

ANGLES ±.5°  
SURF FINISH 63 RMS

|          |      |           |
|----------|------|-----------|
| DWG BY   | DATE | mo/day/yr |
| CHECK BY | DATE |           |
| PROJ ENG | DATE |           |
| MFG ENG  | DATE |           |

DO NOT SCALE DRAWING

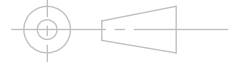
FILE NUMBER - 246-0140-X

INITIAL PROJECT -

MATERIAL: B.O.M

FINISH: SEE NOTES

THIRD ANGLE PROJECTION

**TELEMARK**

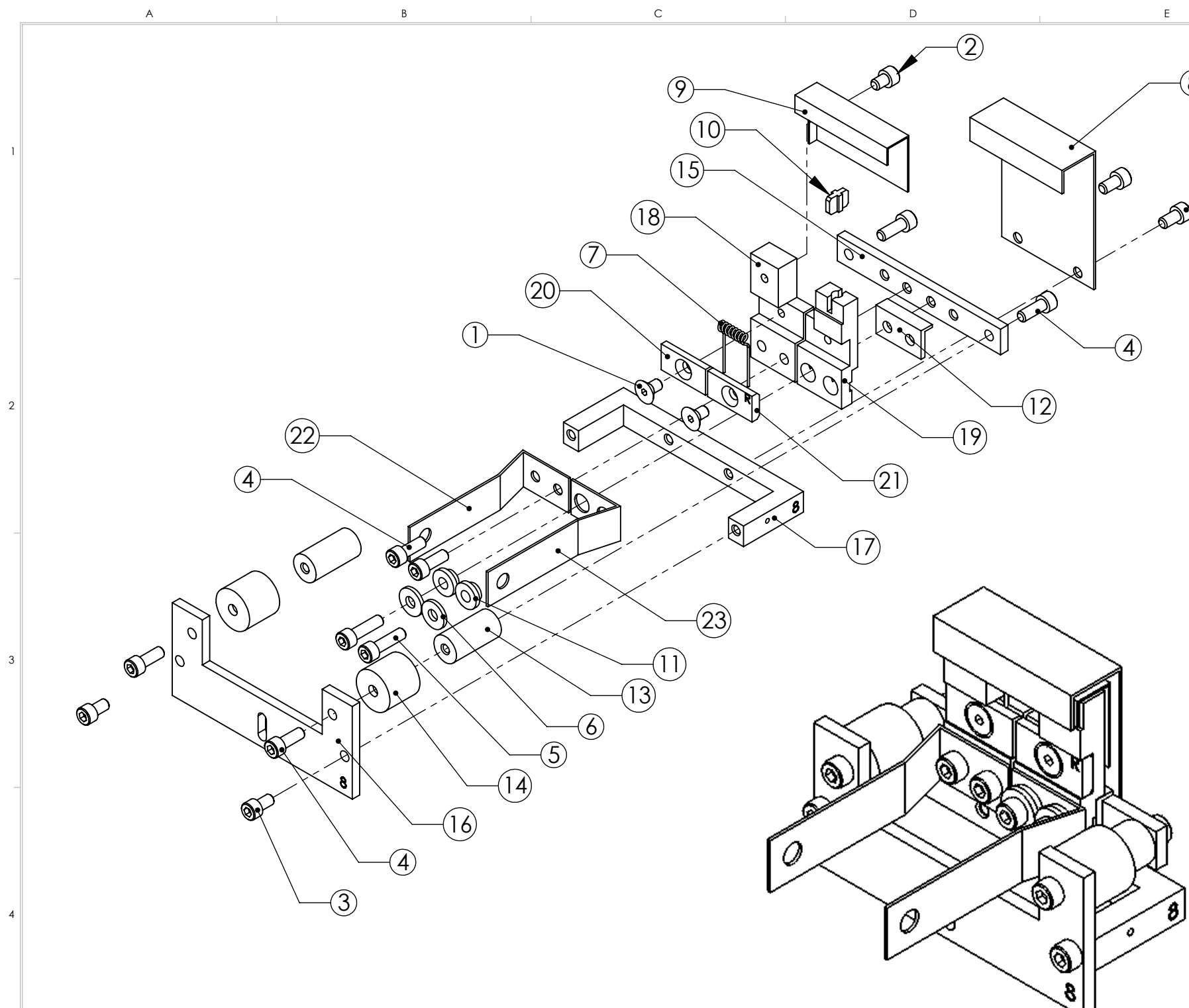
telemark.com

**EXTERNAL ASSEMBLY,  
1.25" (32mm) FEEDTHRU****C** SCALE 1:2  
SHEET 1 of 1DWG NO:  
**246-0140-2**REV  
**B**

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ISOMETRIC VIEW

| ECN | ZONE | REV | DESCRIPTION | BY  | DATE      |
|-----|------|-----|-------------|-----|-----------|
|     |      | A   | RELEASE     | PWF | 6/13/2013 |
|     |      | A1  | UPDATE      | PWF | 8/9/2013  |

| ITEM NO. | PART NUMBER | DESCRIPTION                           | QTY. |
|----------|-------------|---------------------------------------|------|
| 1        | 271-6010-5  | SCREW, #6-32 X 1/4" SLOT FLAT HEAD,TI | 2    |
| 2        | 271-6020-5  | SCREW, #6-32 X 3/16" TI SHCS          | 1    |
| 3        | 271-6030-1  | VENTED SCREW, #6-32 X 1/4" SST SHCS   | 4    |
| 4        | 271-6050-1  | VENTED SCREW, #6-32 X 3/8" SST. SHCS  | 6    |
| 5        | 271-6060-1  | VENTED SCREW, #6-32 X 1/2" SST SHCS   | 2    |
| 6        | 271-6242-1  | FLAT WASHER, #6 SST.                  | 2    |
| 7        | 273-0001-1  | FILAMENT, 7-1/2 TURN                  | 1    |
| 8        | 273-0003-1  | ANODE PLATE                           | 1    |
| 9        | 273-0004-2  | BEAM FORMER                           | 1    |
| 10       | 273-0005-1  | INSULATOR, CROSS                      | 1    |
| 11       | 273-0006-1  | INSULATOR, COLLAR                     | 2    |
| 12       | 273-0008-1  | L INSULATOR                           | 1    |
| 13       | 273-0010-1  | HV INSULATOR                          | 2    |
| 14       | 273-0011-1  | HV SHIELD                             | 2    |
| 15       | 273-0017-1  | MOUNTING BRACKET                      | 1    |
| 16       | 273-0018-8  | EMITTER SUPPORT BRACKET               | 1    |
| 17       | 273-0019-8  | U-BRACKET                             | 1    |
| 18       | 273-0031-1  | CATHODE BLOCK, LEFT                   | 1    |
| 19       | 273-0032-1  | CATHODE BLOCK, RIGHT                  | 1    |
| 20       | 273-0033-3  | FILAMENT CLAMP, LEFT                  | 1    |
| 21       | 273-0033-4  | FILAMENT CLAMP, RIGHT                 | 1    |
| 22       | 273-0035-1  | EMITTER BUS BAR, LEFT                 | 1    |
| 23       | 273-0036-1  | FILAMENT BUS BAR, RIGHT               | 1    |

|                            |         |
|----------------------------|---------|
| UNLESS OTHERWISE SPECIFIED |         |
| GLOBAL TOLERANCES          |         |
| INCHES                     | [mm]    |
| .X +/- .03                 | [0.762] |
| .XX +/- 0.01               | [0.254] |
| .XXX +/- 0.005             | [0.127] |
| ANGLES +/- .5°             |         |
| SURF FINISH                | 63 RMS  |

|                      |              |           |
|----------------------|--------------|-----------|
| DWG BY               | DATE         | mo/day/yr |
| CHECK BY             | DATE         |           |
| PROJ ENG             | DATE         |           |
| MFG ENG              | DATE         |           |
| DO NOT SCALE DRAWING |              |           |
| FILE NUMBER          | - 273-0150-8 |           |
| INITIAL PROJECT      | -            |           |

|                        |           |
|------------------------|-----------|
| MATERIAL:              | B.O.M.    |
| FINISH:                | SEE NOTES |
| THIRD ANGLE PROJECTION |           |

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**EMITTER ASSEMBLY  
2013**

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|          |       |        |         |            |     |    |
|----------|-------|--------|---------|------------|-----|----|
| <b>B</b> | SCALE | 1:1    | DWG NO. | 273-0150-8 | REV | A1 |
|          | SHEET | 1 of 1 |         |            |     |    |