

**Model KPX Static Hydraulic
Universal Testing System**

Reference Manual - Equipment
M47-17037-EN Revision A

Electromagnetic Compatibility

Where applicable, this equipment is designed to comply with International Electromagnetic Compatibility (EMC) standards.

To ensure reproduction of this EMC performance, connect this equipment to a low impedance ground connection. Typical suitable connections are a ground spike or the steel frame of a building.

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Original Instructions

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| Corporate Headquarters | European Headquarters | Industrial Products Group |
|--|--|---|
| Instron 825 University Avenue Norwood, MA 02062-2643 United States of America | Instron Coronation Road High Wycombe, Bucks HP12 3SY United Kingdom | Instron 900 Liberty Street Grove City, PA 16127 United States of America |

About This Document

This Equipment Reference Manual has been prepared to provide customers with assembly drawings and schematics that pertain to the various models of KPX Static Hydraulic Universal Testing Systems. These drawings are provided for your use and Instron personnel use only. These drawings are the property of Instron and may be subject to return upon demand. The contents of this manual must not be copied or submitted to outside parties for use or examination.

How to Use This Document

The drawings included in this manual are arranged in numerical order for ease of locating any given drawing; refer to the “List of Drawings” section for a list of drawing titles and numbers. To determine which drawings pertain to your specific model of KPX testing system, use the information given in the “System Identification” section in conjunction with the “Options and Applicable Drawings” section.

System Identification

Your system has been given a unique serial number for system identification. This serial number can be found on the serial tag located on the rear of the frame.

The frame serial tag includes other important system information, including information on your frame’s configuration. Frame configuration information can also be found on your copy of the Instron quote.

Options and Applicable Drawings

This section provides a list of KPX testing system options and their applicable drawings. The options are listed in alphabetical order.

Not all options have applicable drawings. If any of the options purchased for your testing system are not listed here, then there are no drawings provided that pertain to that option.

600KPX

| | |
|-------------------------------|------------|
| General Assembly _____ | R231641-3 |
| Hydraulic Schematic _____ | R234500-4D |
| Power – Schematic _____ | R234321-4 |
| Power – Wirelist Layout _____ | R234322-3 |

1000KPX

| | |
|-------------------------------|------------|
| General Assembly _____ | R234433-3 |
| Hydraulic Schematic _____ | R234500-4A |
| Power – Schematic _____ | R234321-4 |
| Power – Wirelist Layout _____ | R234322-3 |

1500KPX

| | |
|-------------------------------|------------|
| General Assembly _____ | R231643-3 |
| Hydraulic Schematic _____ | R234500-4A |
| Power – Schematic _____ | R234321-4 |
| Power – Wirelist Layout _____ | R234322-3 |

2000KPX-J3

| | |
|-------------------------------|------------|
| General Assembly _____ | R231658-3 |
| Hydraulic Schematic _____ | R234500-4B |
| Power – Schematic _____ | R234321-4 |
| Power – Wirelist Layout _____ | R234322-3 |

2000KPX-J4

| | |
|-------------------------------|------------|
| General Assembly _____ | R231657-3 |
| Hydraulic Schematic _____ | R234500-4B |
| Power – Schematic _____ | R234321-4 |
| Power – Wirelist Layout _____ | R234322-3 |

List of Drawings

The following is a list of all drawings that appear in this manual. The drawings are in numerical order for ease of locating.

| | |
|-------------------------------|------------|
| General Assembly _____ | R231641-3 |
| General Assembly _____ | R231643-3 |
| General Assembly _____ | R231657-3 |
| General Assembly _____ | R231658-3 |
| Power – Schematic _____ | R234321-4 |
| Power – Wirelist Layout _____ | R234322-3 |
| General Assembly _____ | R234433-3 |
| Hydraulic Schematic _____ | R234500-4A |
| Hydraulic Schematic _____ | R234500-4B |
| Hydraulic Schematic _____ | R234500-4D |

Appendix A

This section provides the Material Safety Data Sheet for the oil used in the hydraulic power supply (HPS).

Material Safety Data Sheet _____ Altra AW32 Oil

System Documentation

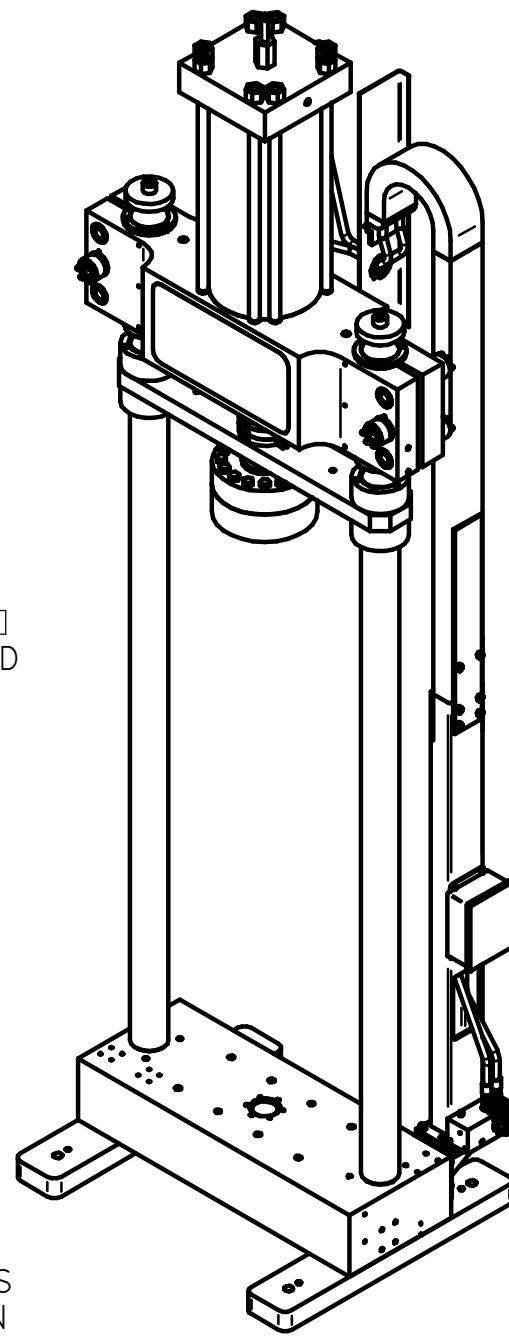
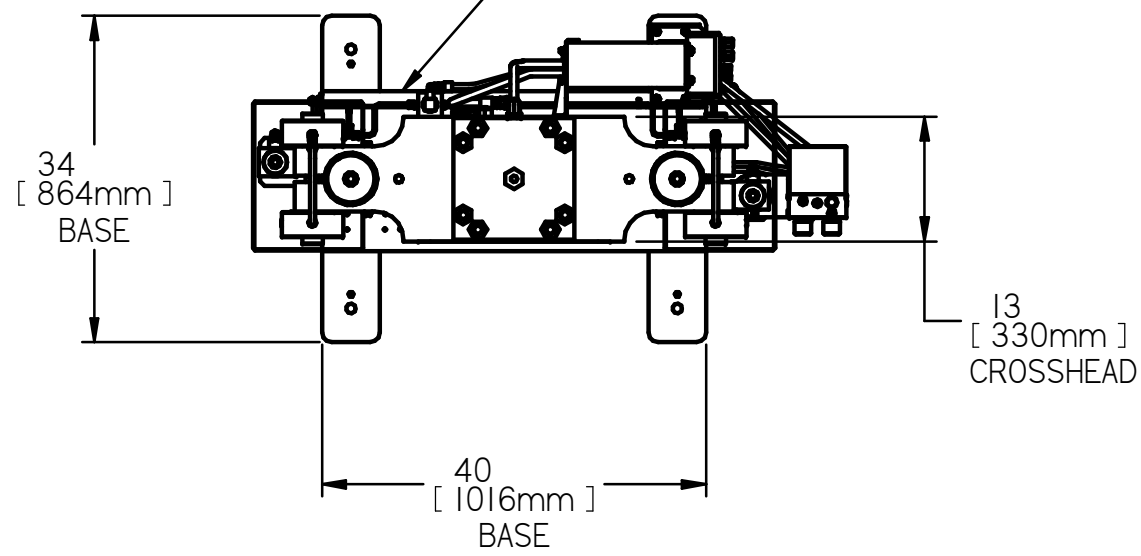
In addition to this Equipment Reference Manual, the following manuals are included under separate cover:

- Model KPX Series Static Hydraulic Universal Testing System – Pre-Installation Manual
Manual No. M47-17034-EN
- Model KPX Series Static Hydraulic Universal Testing System – Operating Instructions
Manual No. M47-17035-EN
- Model KPX Series Static Hydraulic Universal Testing System – System Concepts Manual
Manual No. M47-17036-EN

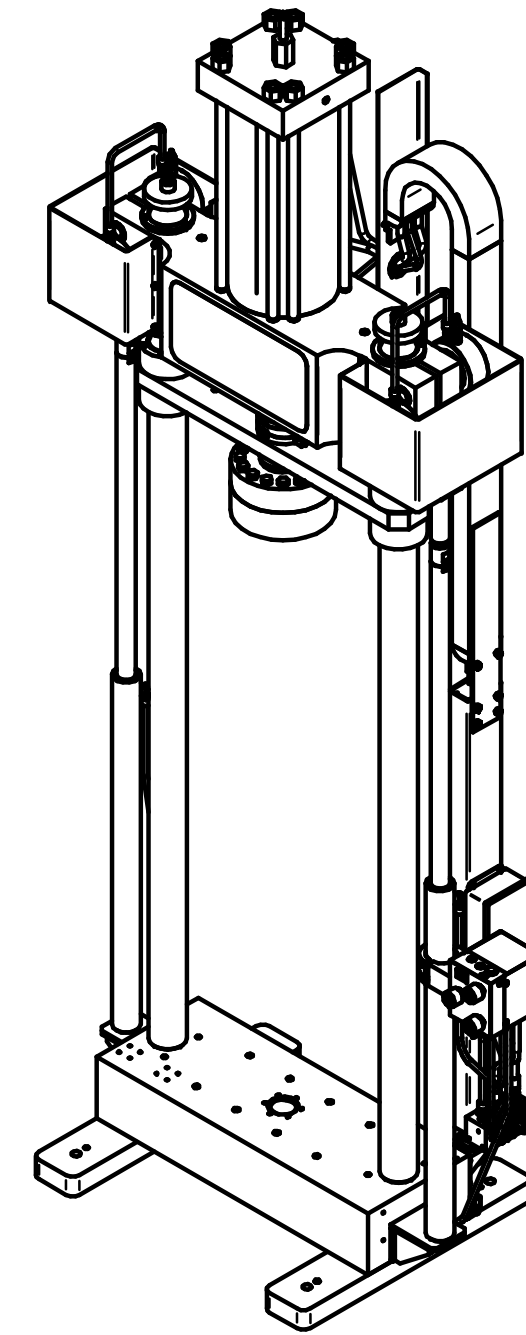
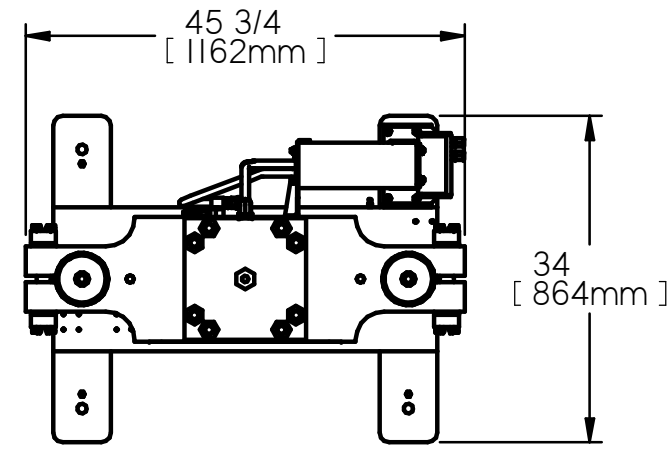
List of Drawings

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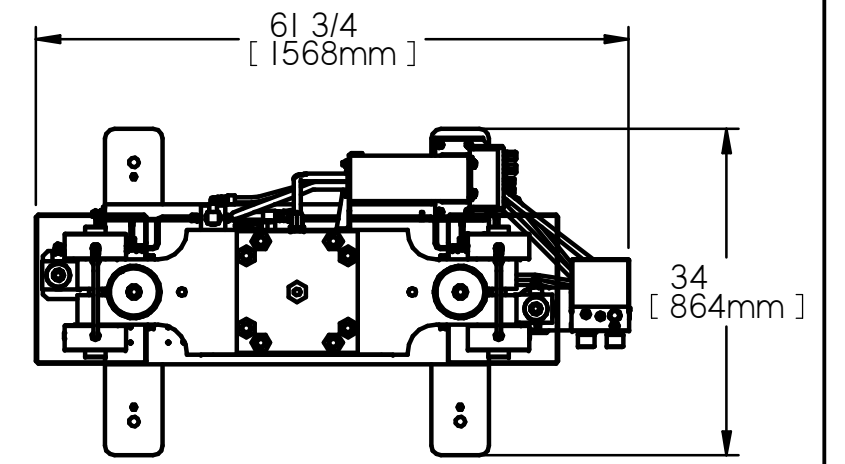
LIFTING POINTS
M30 x 3.5p x 2.75 DEEP
2 PLACES ON BACKSIDE OF BASE
SEE PRE-INSTALLATION
MANUAL FOR LIFTING AND
HANDLING INSTRUCTIONS



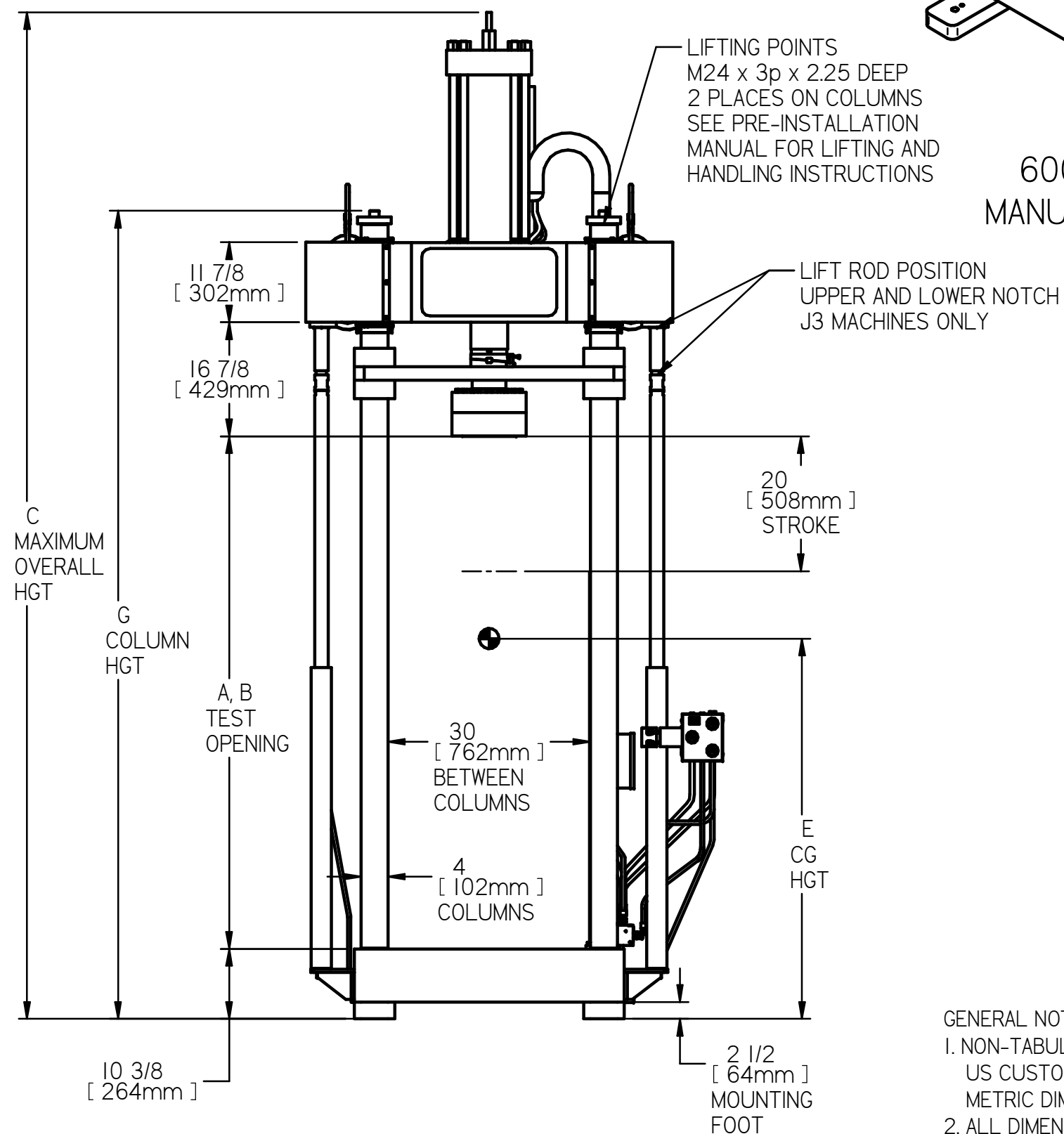
600KPX-J1
MANUAL LOCKS



600KPX-J3
HYDRAULIC LIFTS AND LOCKS



LIFTING POINTS
M24 x 3p x 2.25 DEEP
2 PLACES ON COLUMNS
SEE PRE-INSTALLATION
MANUAL FOR LIFTING AND
HANDLING INSTRUCTIONS



GENERAL NOTES:

1. NON-TABULATED DIMENSIONS ARE WITHIN THE FOLLOWING TOLERANCE
US CUSTOMARY DIMENSIONS ARE +/- 1/32in
METRIC DIMENSIONS ARE +/- 0.5mm
2. ALL DIMENSIONS, WEIGHTS AND CENTER OF GRAVITY (CG) ARE NOMINAL AND
MAY BE AFFECTED BY ACCESSORIES AND OPTIONS
3. SEE PRE-INSTALLATION MANUAL FOR LIFTING AND HANDLING INSTRUCTIONS

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OPTION DEPENDENT MEASUREMENTS

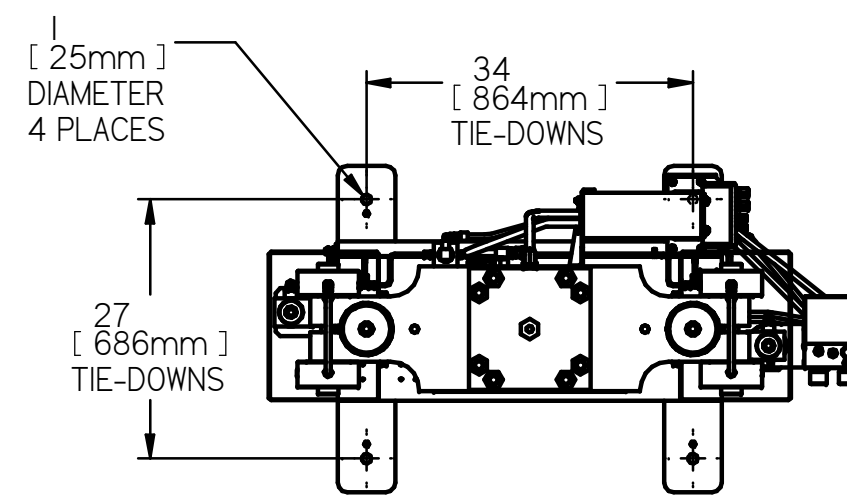
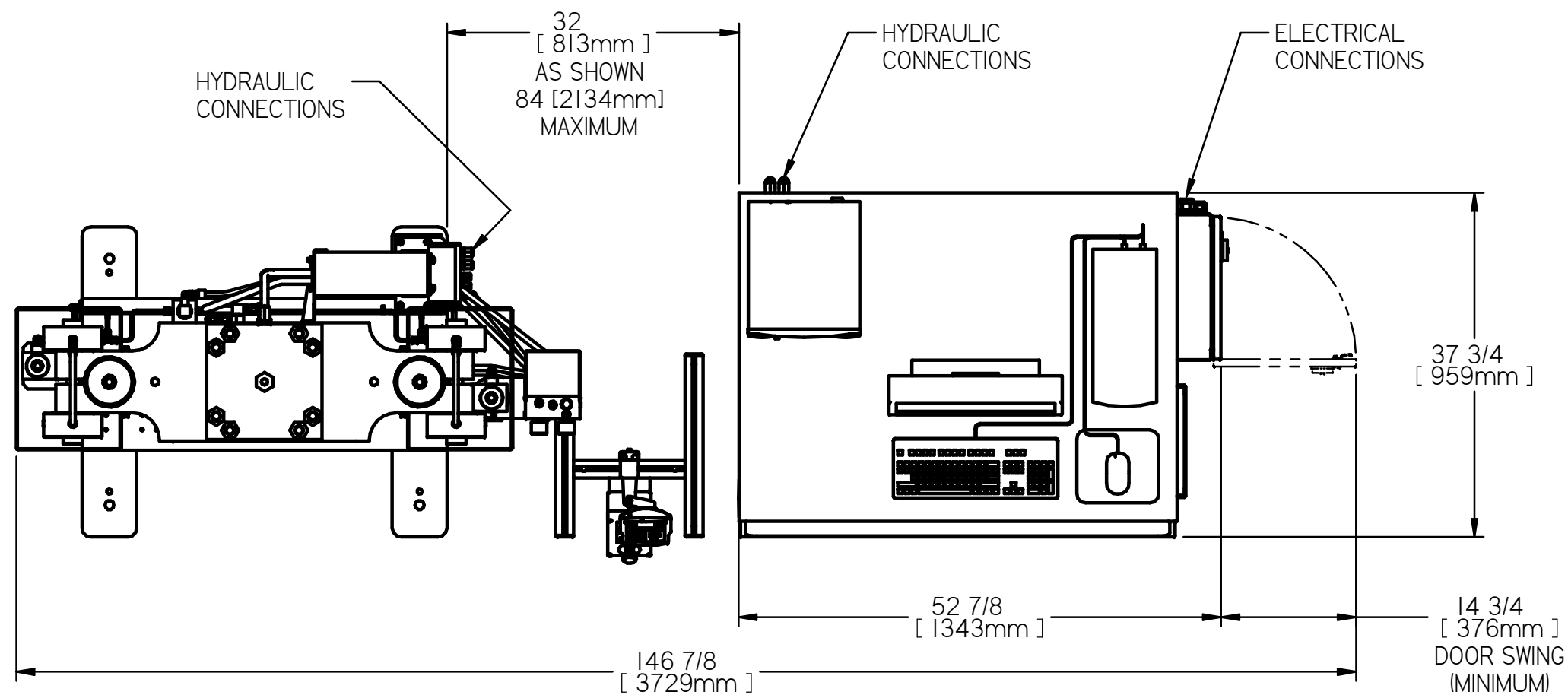
| Option | A - Minimum Test Opening | | B - Maximum Test Opening | | | C - Maximum Overall Height | D - Weight | | E - Center of Gravity Height | | F - Tip-Up Height | | G- Column Height | | | | | | | | | |
|--------|--------------------------|----------------|--------------------------|-----|----------------|----------------------------|----------------|------|------------------------------|------|-------------------|------|------------------|------|------|------|------|------|-----|------|-----|------|
| | J1 | J3 Lower Notch | J3 Upper Notch | J1 | J3 Lower Notch | | J3 Upper Notch | lbs | kg | in | mm | in | mm | in | mm | | | | | | | |
| J1B | 0 | 0 | - | - | - | - | 76 | 1930 | - | - | - | - | 149 | 3795 | 4915 | 2230 | 68.7 | 1745 | 121 | 3075 | 120 | 3045 |
| J1D | 0 | 0 | - | - | - | - | 100 | 2540 | - | - | - | - | 173 | 4405 | 5100 | 2315 | 82.3 | 2090 | 145 | 3685 | 144 | 3655 |
| J3B | - | - | 10 | 254 | 17 | 432 | - | - | 69 | 1753 | 76 | 1930 | 149 | 3795 | 5365 | 2435 | 69.1 | 1760 | 121 | 3075 | 120 | 3045 |
| J3D | - | - | 10 | 254 | 41 | 1041 | - | - | 69 | 1753 | 100 | 2540 | 173 | 4405 | 5585 | 2535 | 82.8 | 2105 | 145 | 3685 | 144 | 3655 |

TABLE NOTES:

- A - MINIMUM TEST OPENING MEASURED WITH ACTUATOR FULLY EXTENDED.
- B - MAXIMUM TEST OPENING MEASURED WITH ACTUATOR FULLY RETRACTED.
- E - CENTER OF GRAVITY HEIGHT MEASURED WITH ACTUATOR FULLY RETRACTED.
- F - TIP-UP HEIGHT IS "CEILING" HEIGHT REQUIRED TO STAND THE MACHINE UPRIGHT FROM HORIZONTAL SHIPPING POSITION. DOES NOT INCLUDE CLEARANCE FOR LIFTING EQUIPMENT OR SHIPPING CONTAINER.

ENGR REF R222962-3, R231643-3

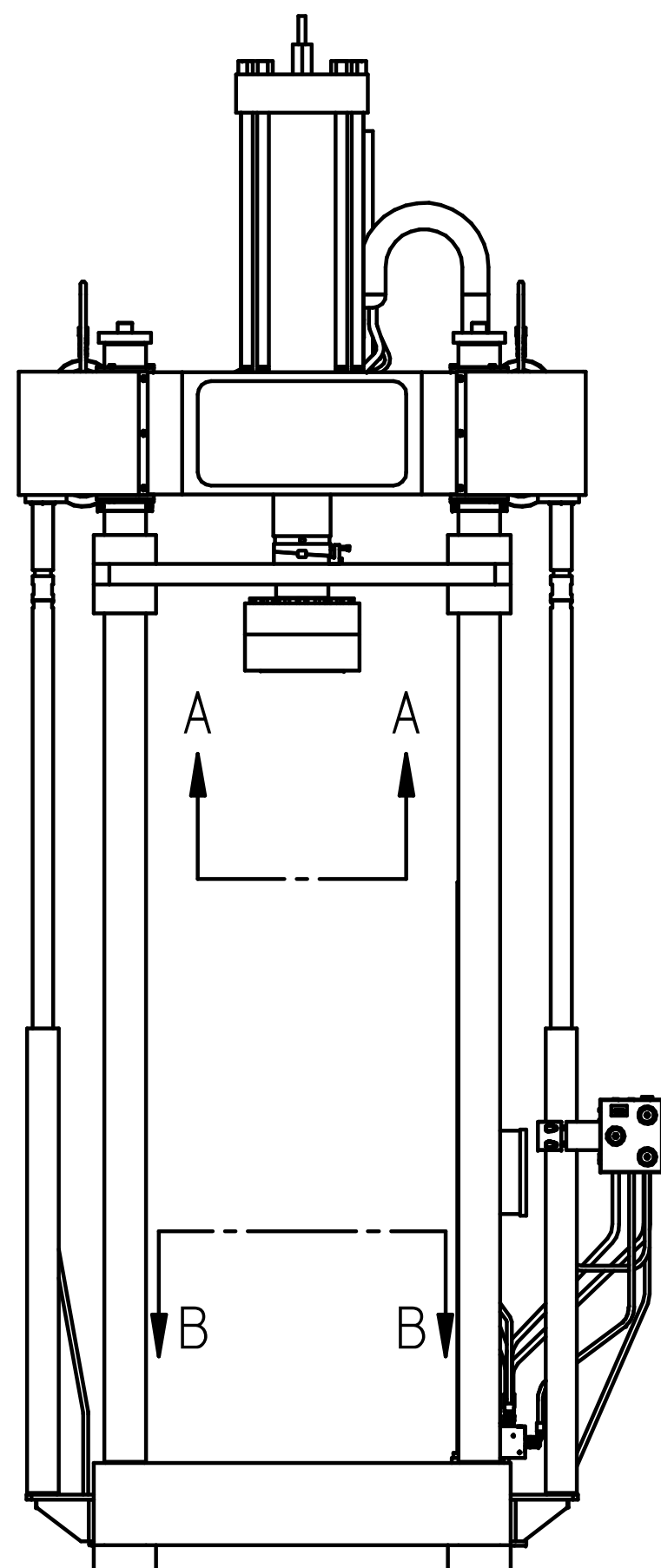
| | | | | | |
|---|----------------------------------|-------|------------------|-----------------|---------------|
| MATERIAL: | C | 87689 | NEW HPS ASSEMBLY | 6/24/14 | SAS |
| APPLIED PRACTICES: | THIRD ANGLE | B | 80357 | COLLAR POSITION | 2/25/13 |
| SURFACE FINISH 125 UNLESS OTHERWISE NOTED | A | | RELEASED | 10/12/11 | JRH |
| HARDNESS: | REV | ECO | REVISIONS | DATE | BY |
| FINISH: | GENERAL ASSEMBLY 600KPX-J1/J3 | | | DRAWN: JRH | DATE: 9/13/11 |
| INCHES - TOLERANCES NOT OTHERWISE NOTED | MADE FOR | | | CHECKED: | DATE: |
| ±0.03 ±0.015 ±0.005 | INSTRON INDUSTRIAL PRODUCTS | | | S.O. | SHEET 1 OF 2 |
| ANGULAR: ±0.5 DEGREE FRACTIONAL: ±1/64 | GROVE CITY, PENNSYLVANIA | | | R231641-3 | |
| | | | | REV | C |



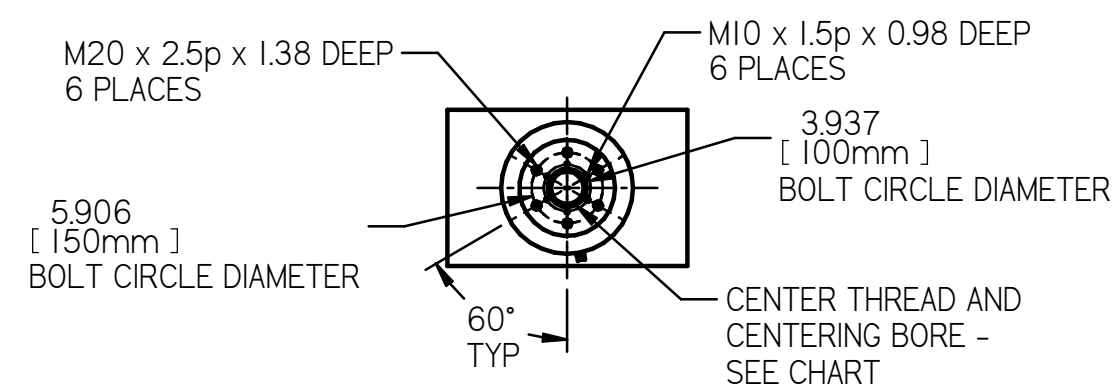
FLOOR MOUNTING BOLT DETAIL

FLOOR MOUNTING BOLT DETAIL
 SECURE MACHINE TO FLOOR WITH CUSTOMER PROVIDED TIE-DOWN BOLTS PRIOR TO TESTING OPERATIONS. SEE PRE-INSTALLATION MANUAL FOR ADDITIONAL INFORMATION.

RECOMMENDED TIE-DOWN BOLTS
 3/4in [M20] DIAMETER, SEE SHEET #1 FOR MOUNTING FOOT THICKNESS.

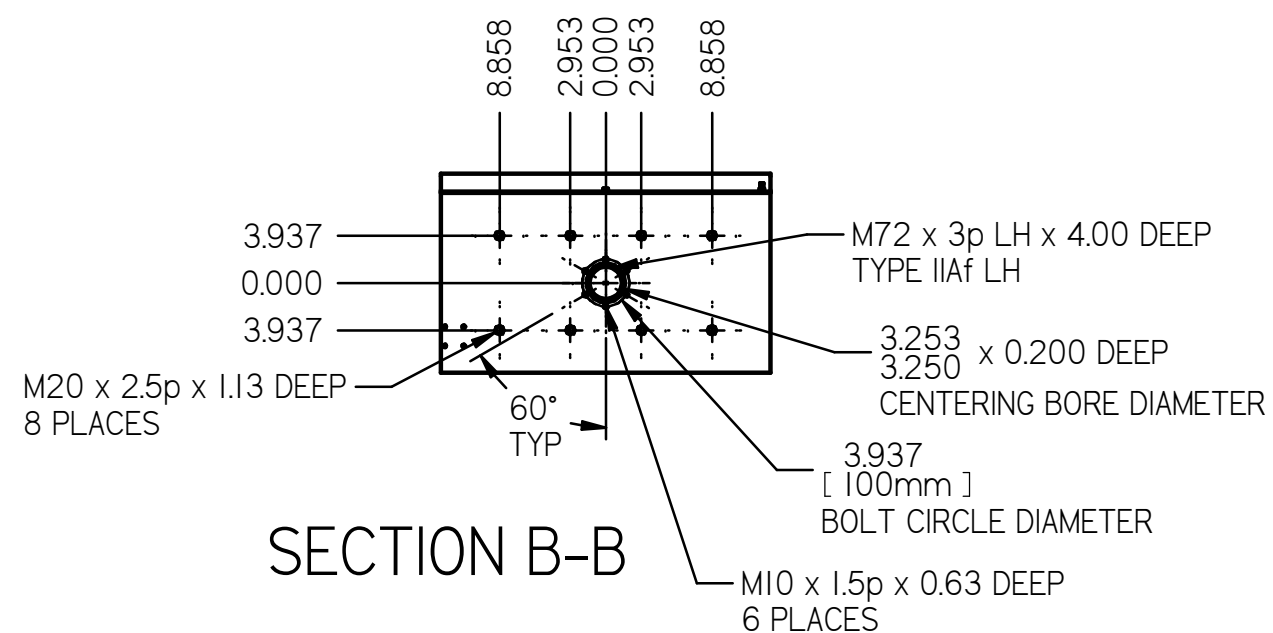


FIXTURE MOUNTING DETAIL

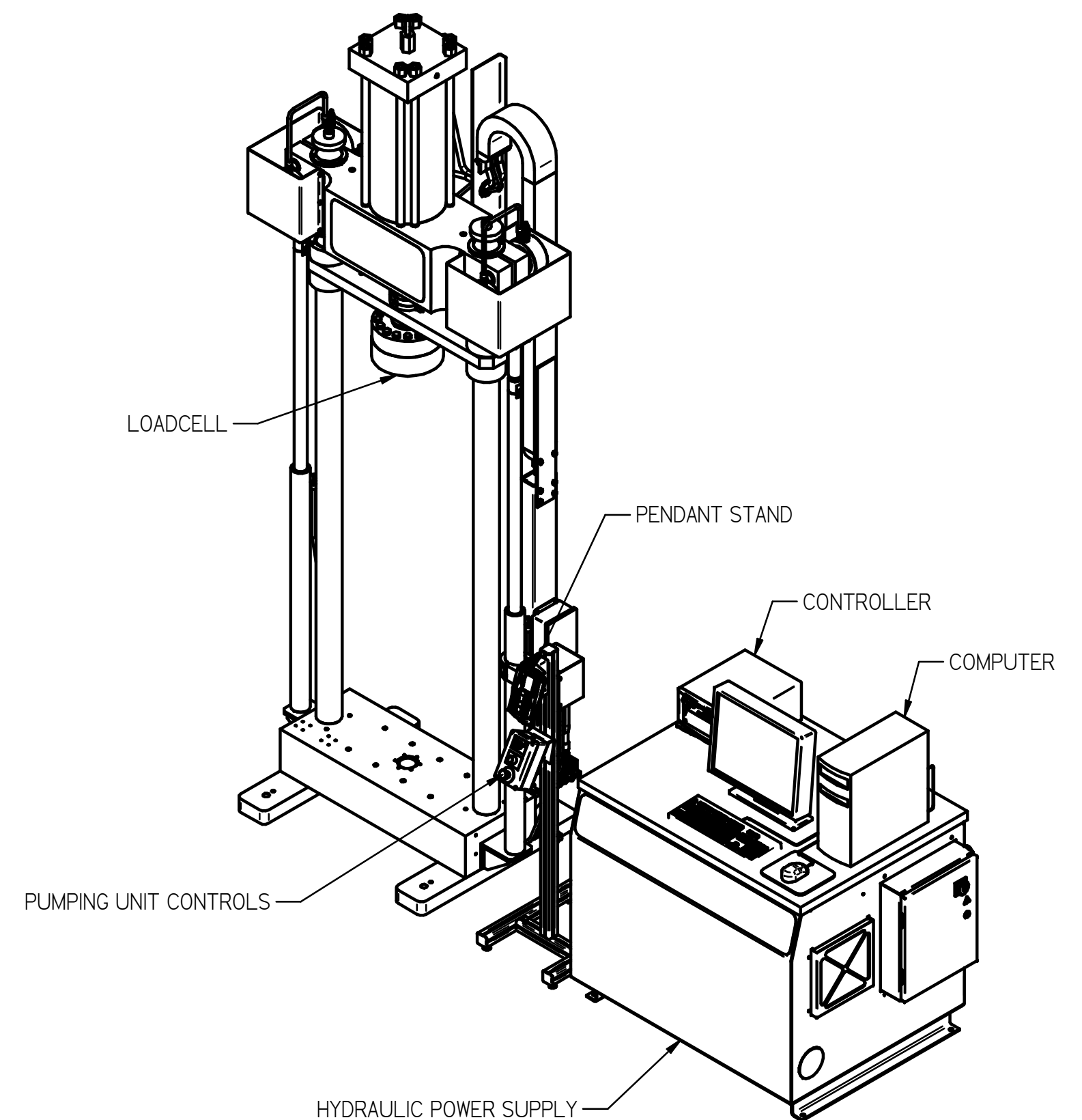


SECTION A-A

| LOADCELL OPTION | | |
|-----------------|------------------------------------|--------------------------|
| LOADCELL | THREAD | CENTERING BORE DIAMETER |
| 300kN | M48 x 2p LH x 1.93 DEEP - TYPE II | 2.364/2.362 x 0.120 DEEP |
| 400kN | M48 x 2p LH x 1.93 DEEP - TYPE II | 2.364/2.362 x 0.120 DEEP |
| 600kN | M72 x 3p LH x 3.00 DEEP - TYPE IIA | 3.252/3.250 x 0.200 DEEP |

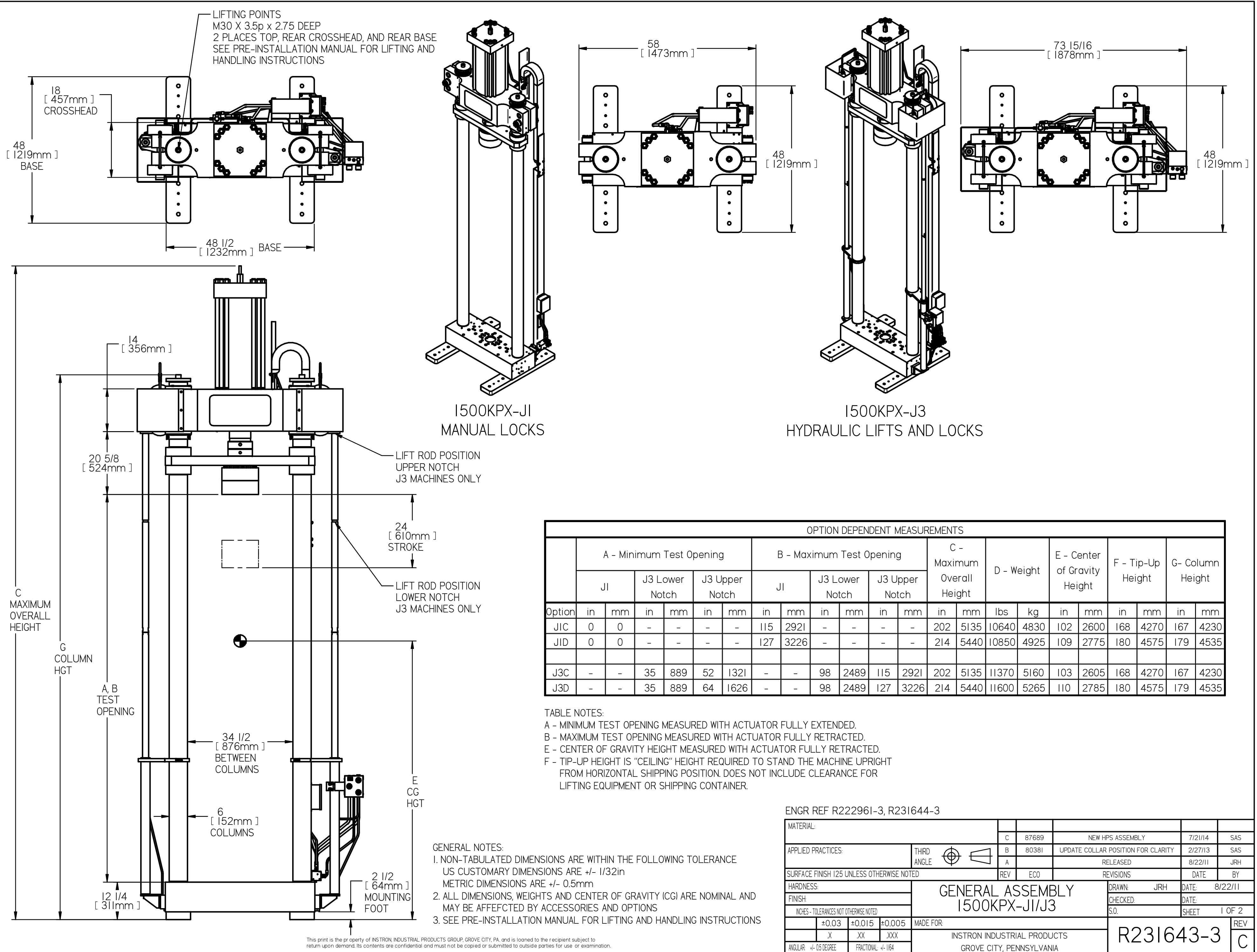


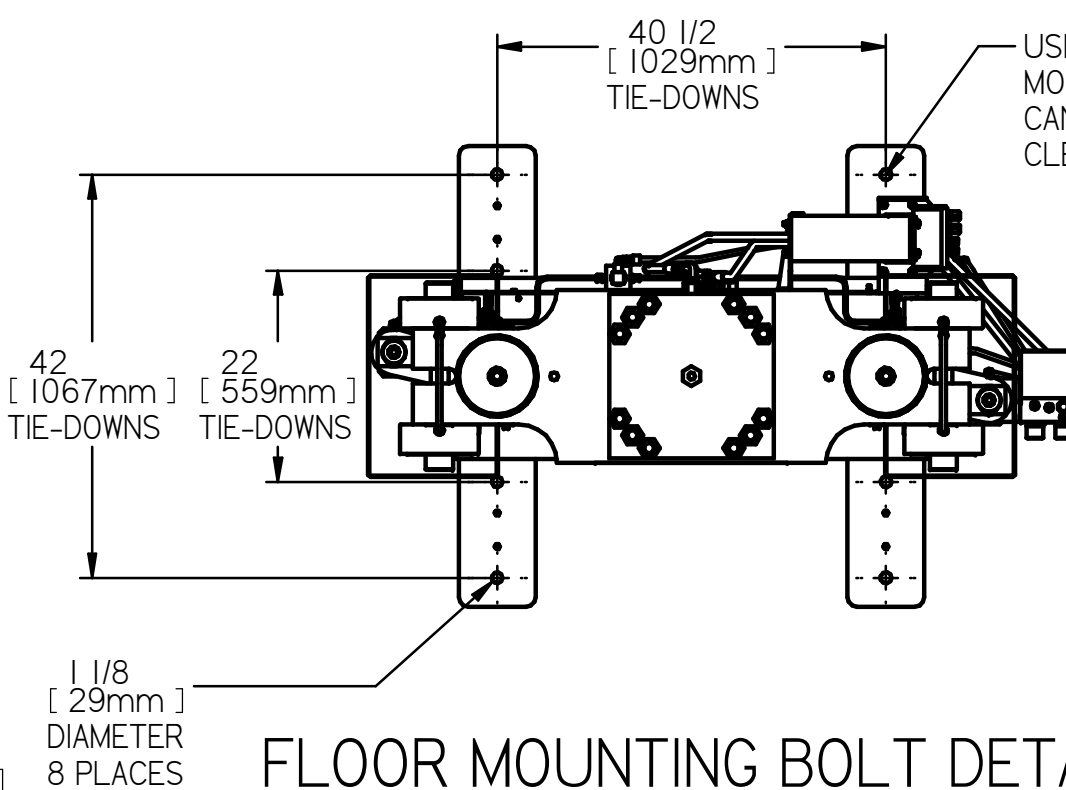
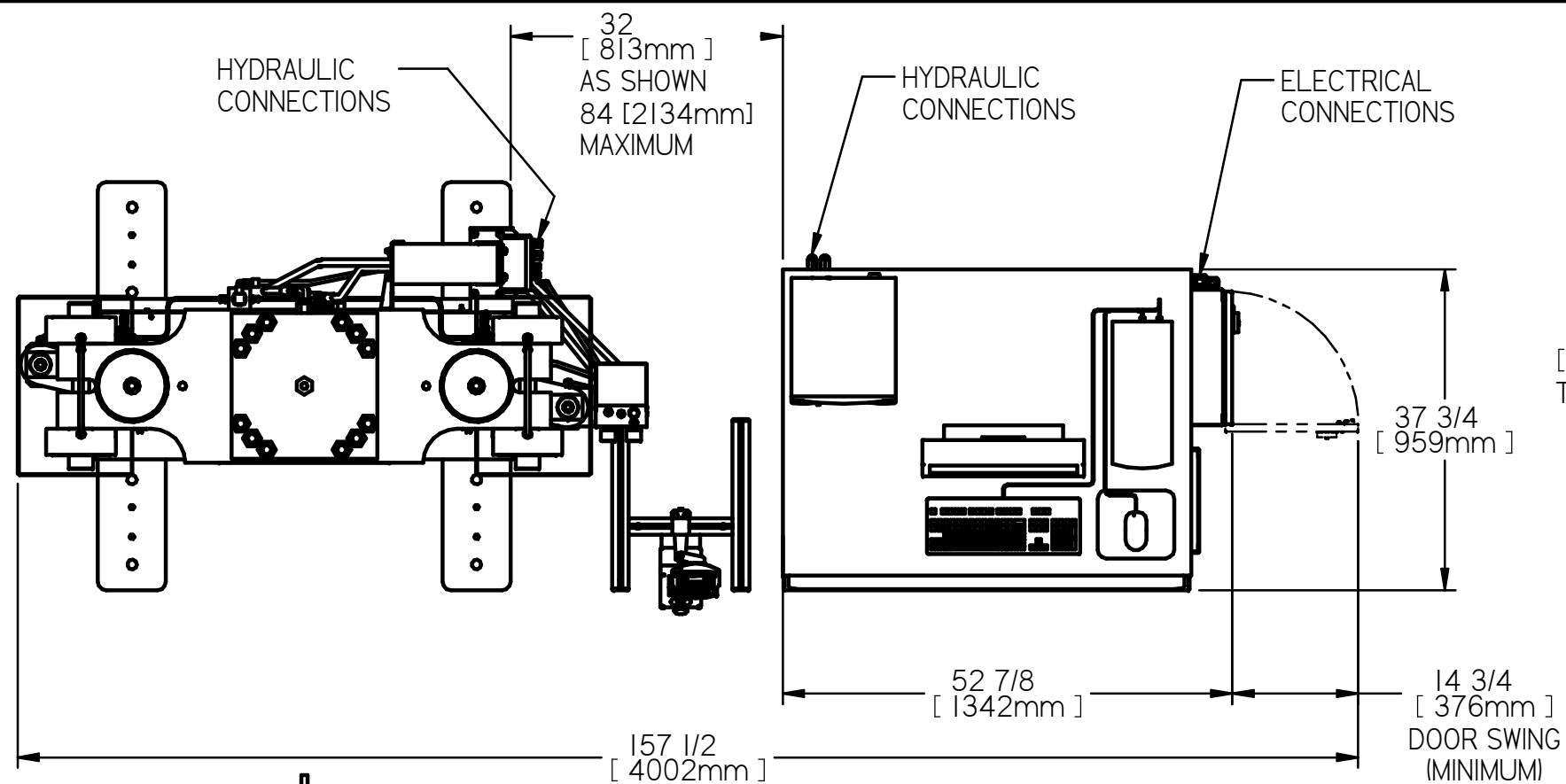
SECTION B-B



| | | | | | |
|---|-------------------------------|-------|------------------|-----------------|---------------|
| MATERIAL: | C | 87689 | NEW HPS ASSEMBLY | 6/24/14 | SAS |
| APPLIED PRACTICES: | THIRD ANGLE | B | 80357 | COLLAR POSITION | 2/25/13 SAS |
| SURFACE FINISH 125 UNLESS OTHERWISE NOTED | A | | REVISED | 10/12/11 | JRH |
| HARDNESS: | REV | ECO | REVISIONS | DATE | BY |
| FINISH: | GENERAL ASSEMBLY 600KPX-JI/J3 | | | DRAWN: JRH | DATE: 9/13/11 |
| INCHES - TOLERANCES NOT OTHERWISE NOTED | | | | CHECKED: | DATE: |
| ±0.03 ±0.015 ±0.005 | MADE FOR | | | S.O. | SHEET 2 OF 2 |
| .X .XX .XXX | INSTRON INDUSTRIAL PRODUCTS | | | R231641-3 | |
| ANGULAR ±.05 DEGREE FRACTIONAL ±.1/64 | GROVE CITY, PENNSYLVANIA | | | REV C | |

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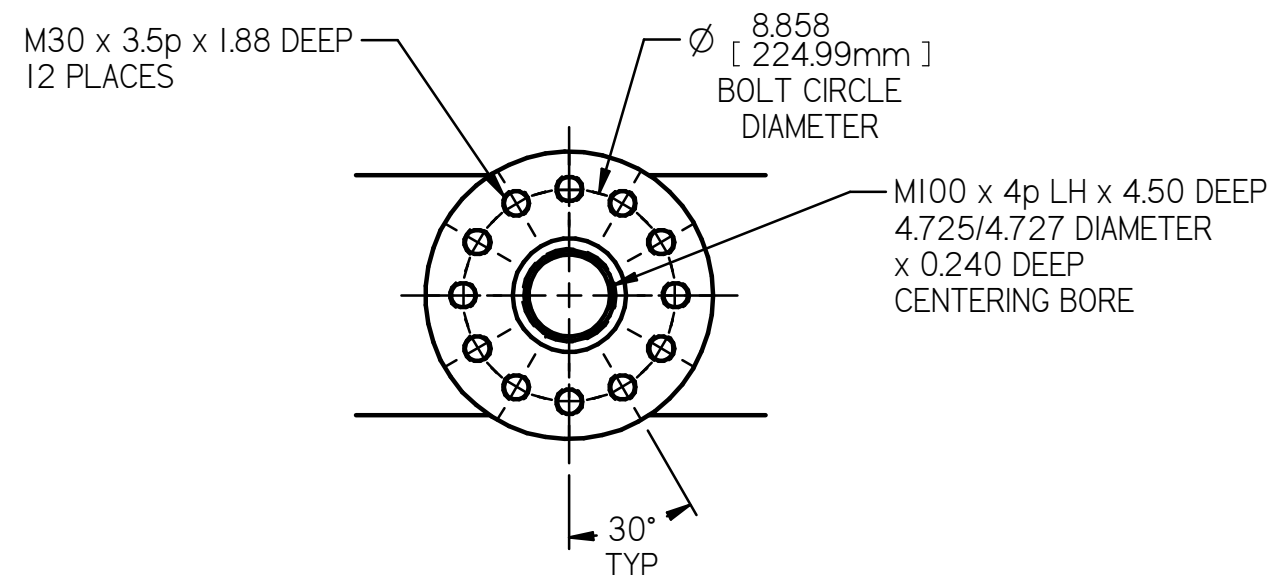
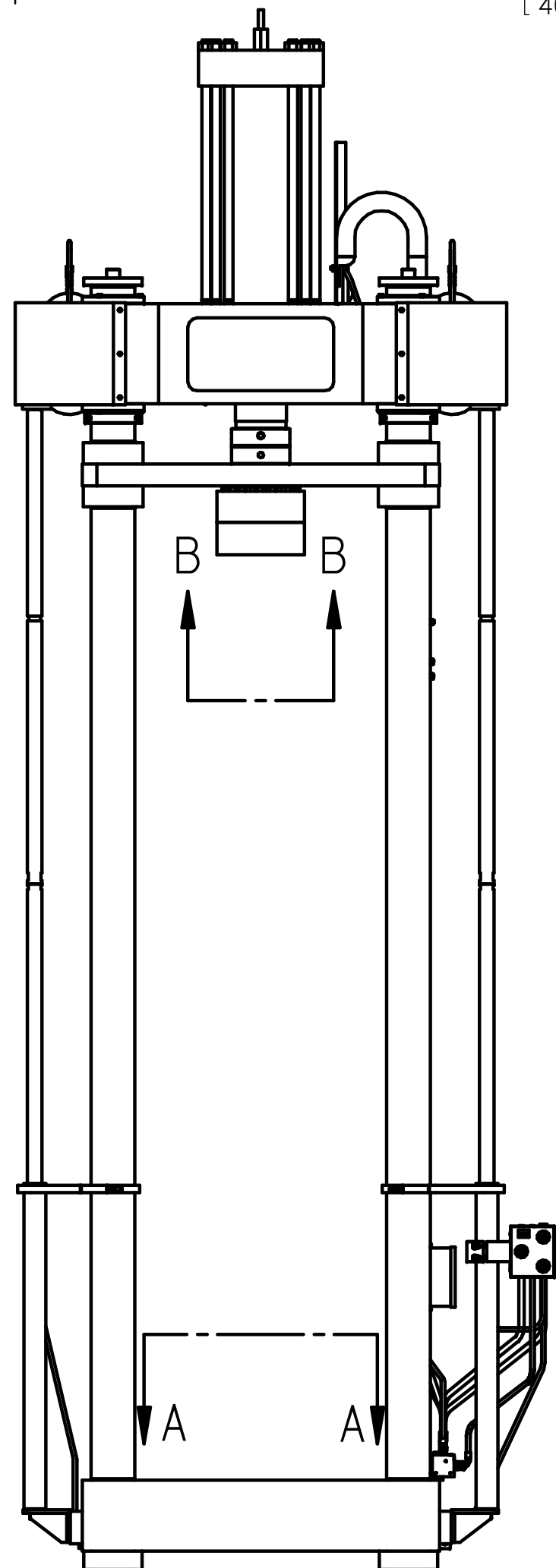




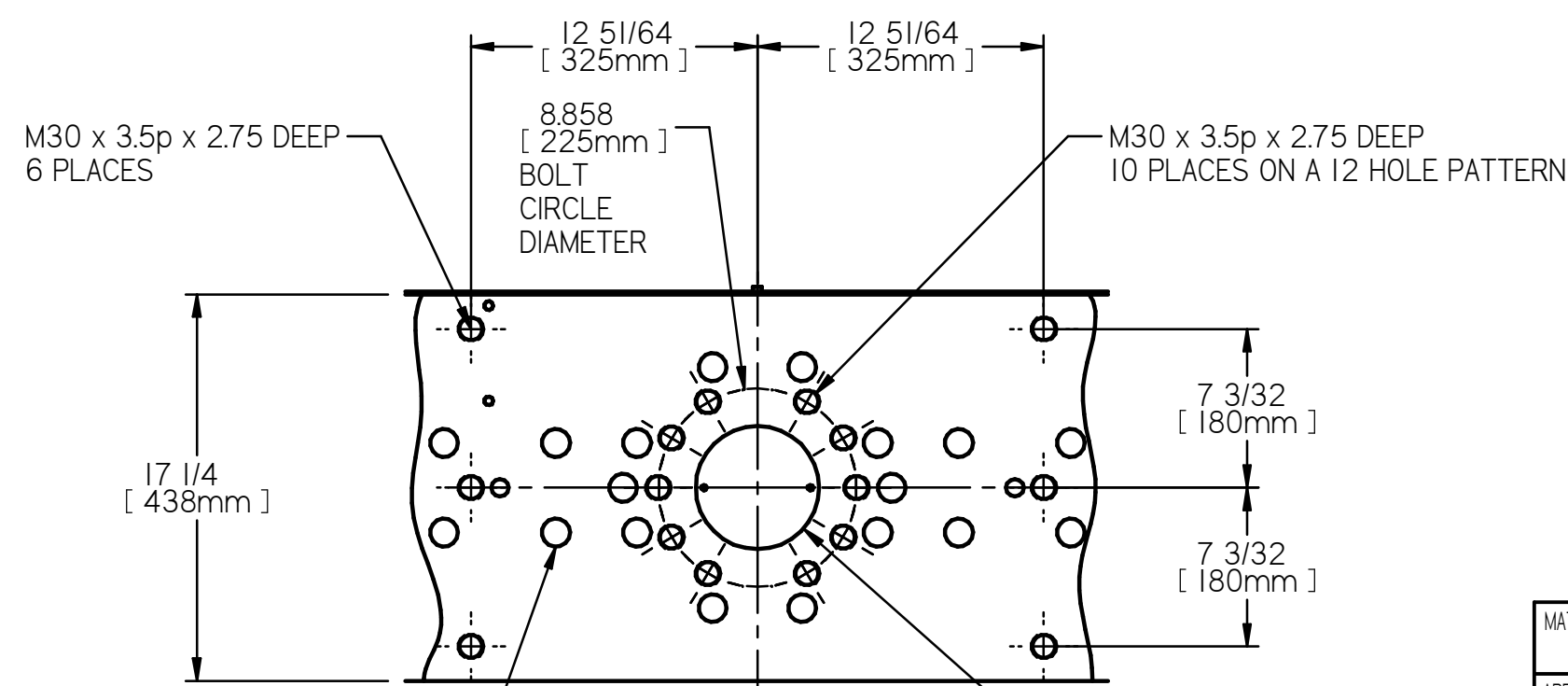
FLOOR MOUNTING BOLT DETAIL

FLOOR MOUNTING BOLT DETAIL
 SECURE MACHINE TO FLOOR WITH CUSTOMER PROVIDED TIE-DOWN BOLTS PRIOR TO TESTING OPERATIONS. SEE PRE-INSTALLATION MANUAL FOR ADDITIONAL INFORMATION.

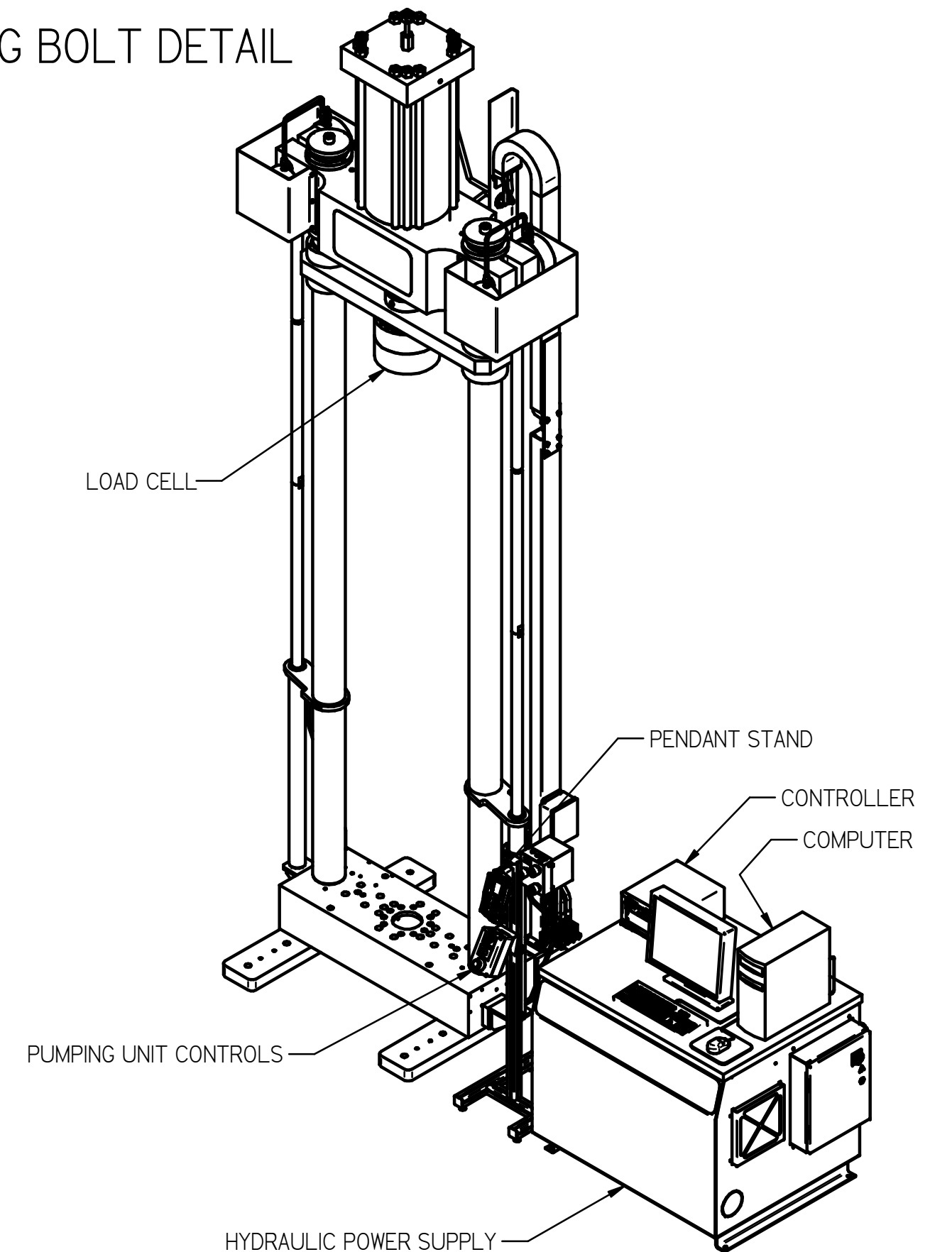
RECOMMENDED TIE-DOWN BOLTS
 1in [M24] DIAMETER, SEE SHEET #1 FOR MOUNTING FOOT THICKNESS.



SECTION B-B
 LOAD CELL



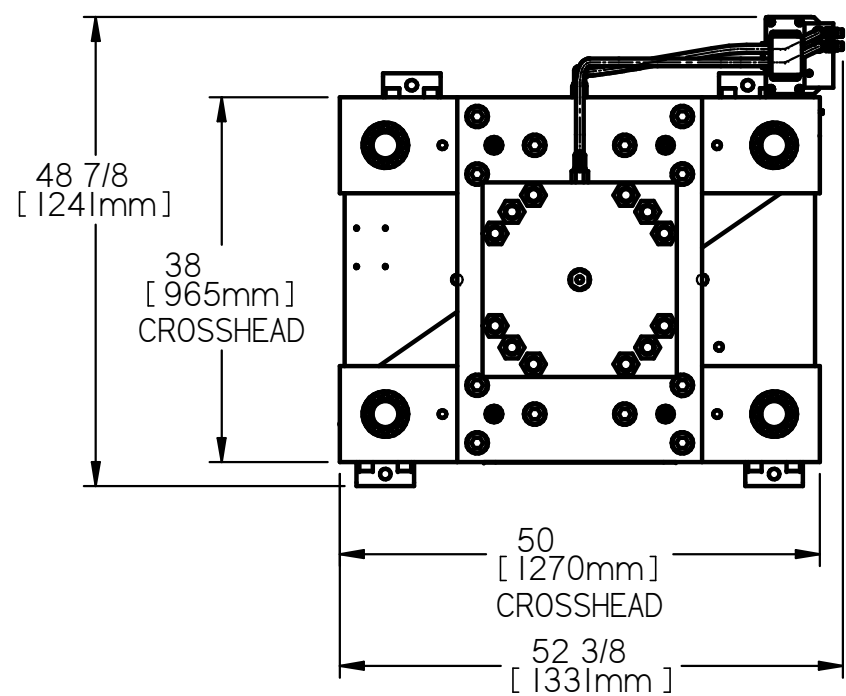
SECTION A-A
 BASE



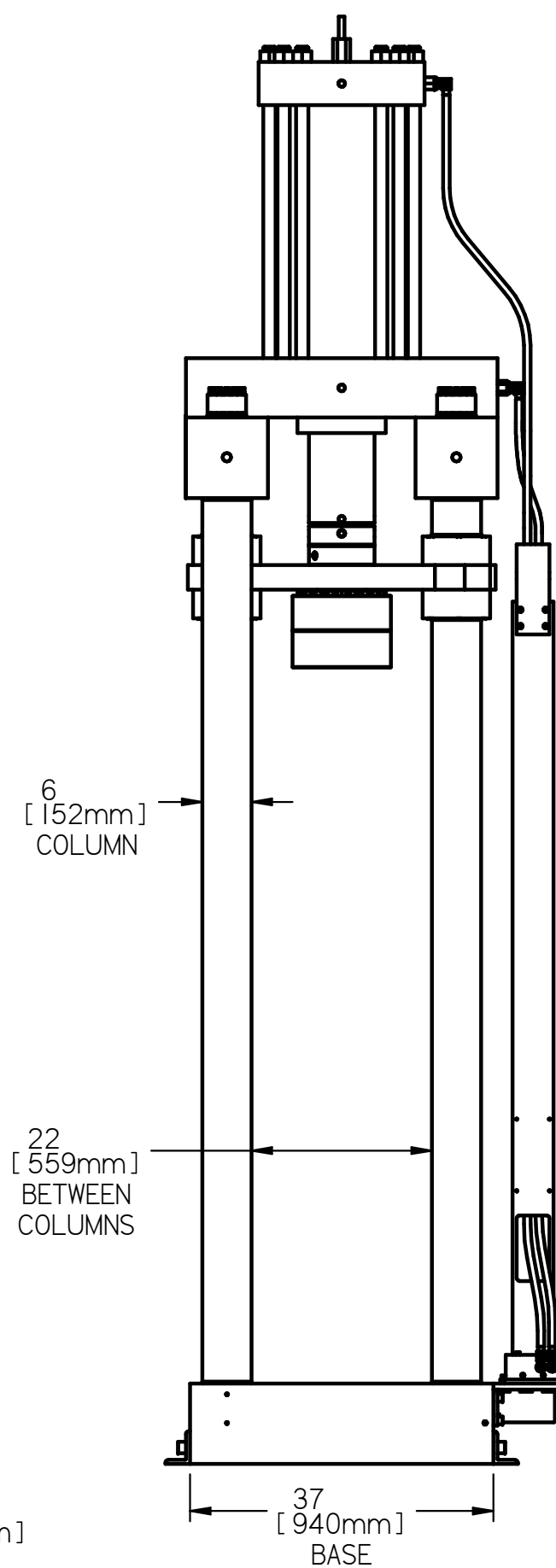
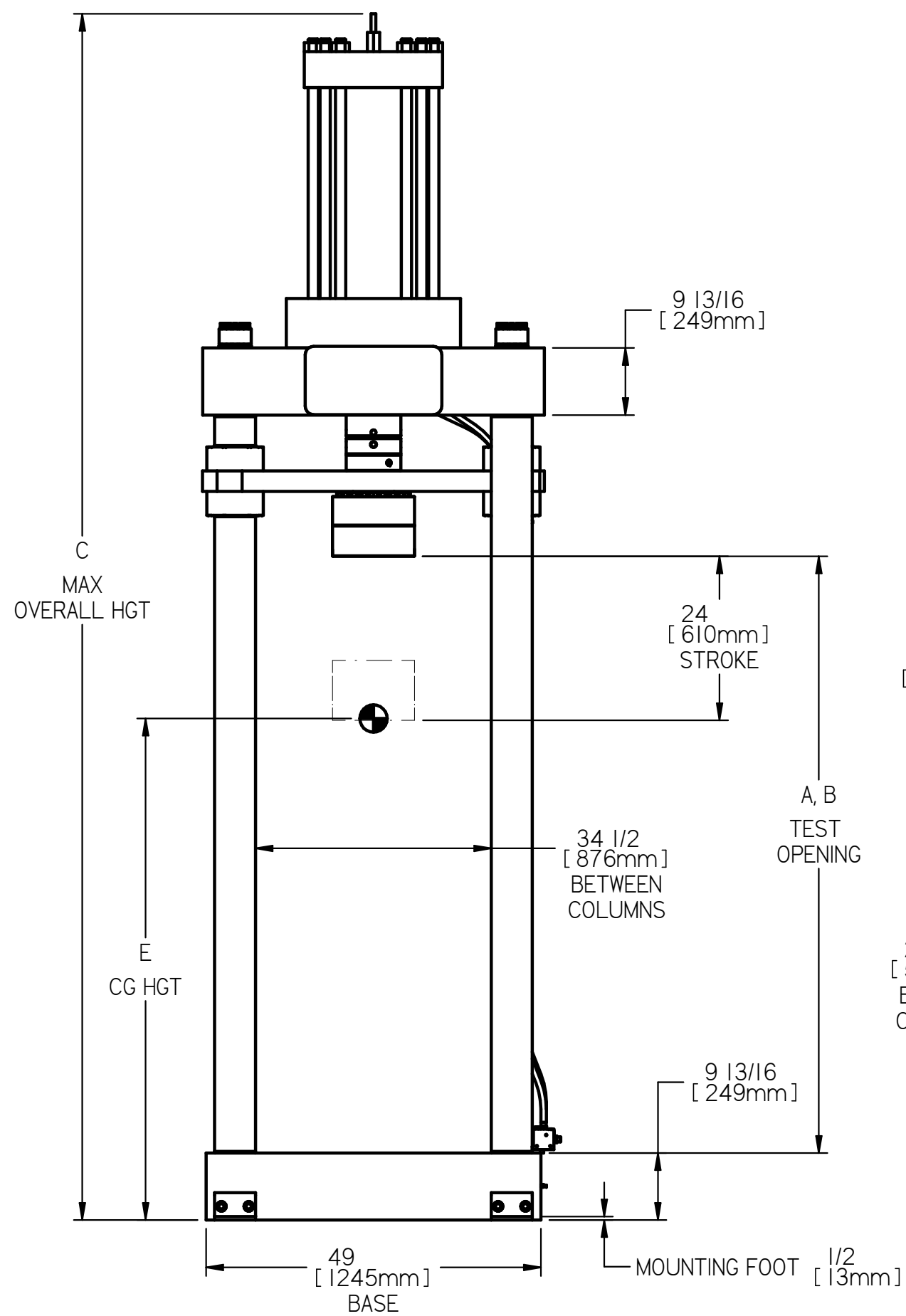
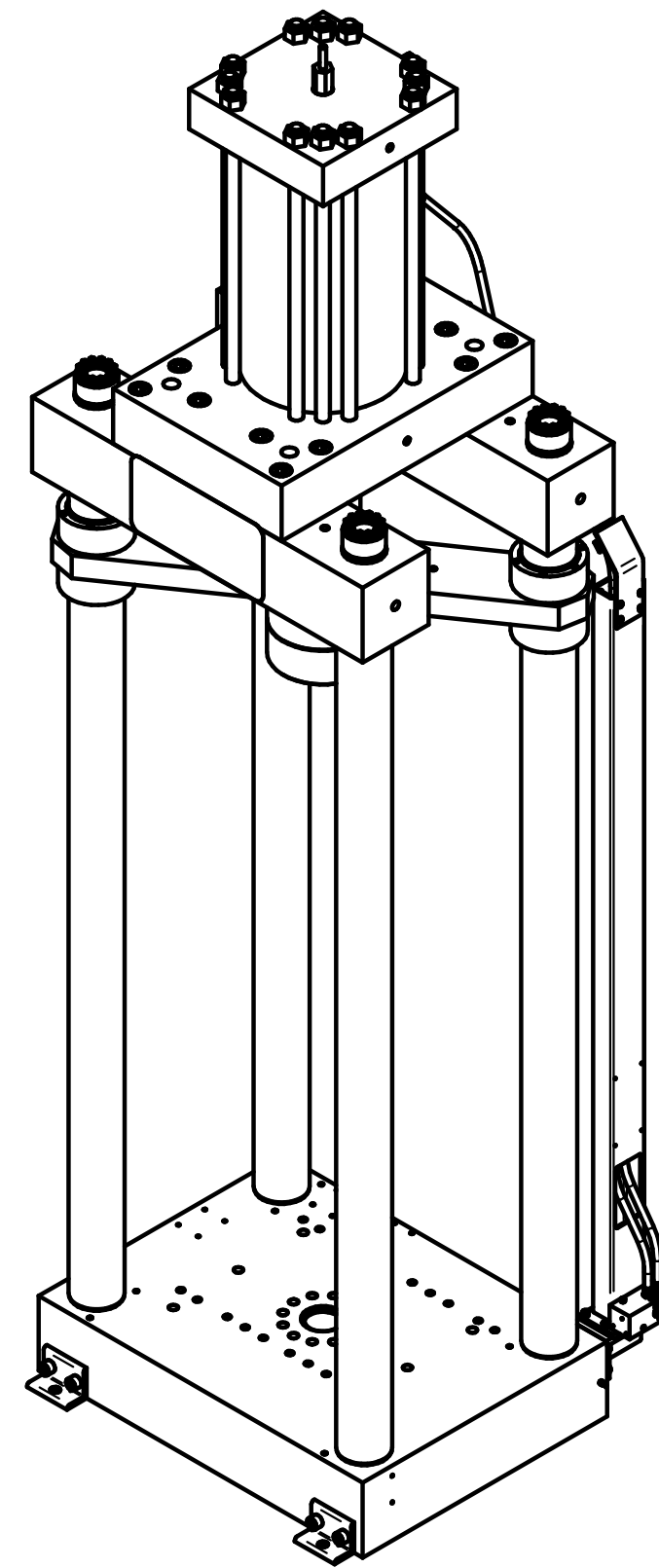
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| | | | | | |
|---|--------------------|--------|------------------------------------|---------------|--------|
| MATERIAL: | C | 87689 | NEW HPS ASSEMBLY | 7/21/14 | SAS |
| APPLIED PRACTICES: | B | 80381 | UPDATE COLLAR POSITION FOR CLARITY | 2/27/13 | SAS |
| SURFACE FINISH 125 UNLESS OTHERWISE NOTED | A | | RELEASED | 8/22/11 | JRH |
| HARDNESS: | REV | ECO | REVISIONS | DATE | BY |
| FINISH: | | | | | |
| INCHES - TOLERANCES NOT OTHERWISE NOTED | | | | | |
| ±0.03 | ±0.015 | ±0.005 | GENERAL ASSEMBLY 1500KPX-J1/J3 | | |
| MADE FOR | | | DRAWN: JRH | DATE: 8/22/11 | |
| ANGULAR: ±0.5 DEGREE | FRACTIONAL: ±1/164 | | CHECKED: | DATE: | |
| | | | S.O. | SHEET | 2 OF 2 |
| | | | | | REV |
| | | | | | C |

R231643-3



- GENERAL NOTES:
- NON-TABULATED DIMENSIONS ARE WITHIN THE FOLLOWING TOLERANCE
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 METRIC DIMENSIONS ARE +/- 0.5mm
 - ALL DIMENSIONS, WEIGHTS AND CENTER OF GRAVITY (CG) ARE NOMINAL AND MAY BE AFFECTED BY ACCESSORIES AND OPTIONS
 - SEE PRE-INSTALLATION MANUAL FOR LIFTING AND HANDLING INSTRUCTIONS



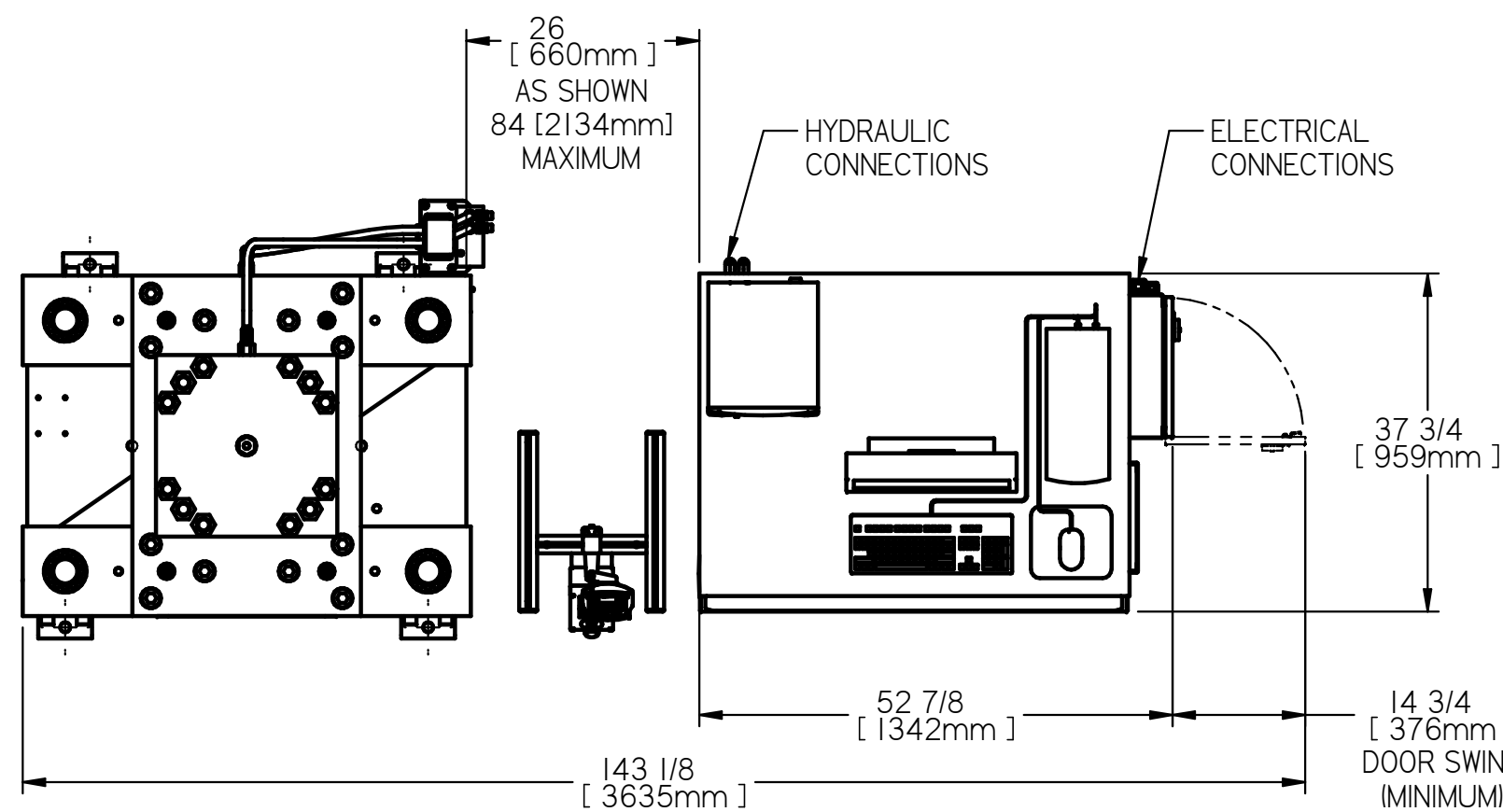
| OPTION DEPENDENT MEASUREMENTS | | | | | | | | | | | | |
|-------------------------------|------------------------|------|------------------------|------|--------------------------|------|----------|------|----------------------------|------|-----------------|------|
| HEIGHT OPTION | A MINIMUM TEST OPENING | | B MAXIMUM TEST OPENING | | C MAXIMUM OVERALL HEIGHT | | D WEIGHT | | E CENTER OF GRAVITY HEIGHT | | F TIP-UP HEIGHT | |
| | IN | MM | IN | MM | IN | MM | LBS | KGS | IN | MM | IN | MM |
| J4A | 63.3 | 1608 | 87.3 | 2217 | 176.5 | 4485 | 16400 | 7440 | 73.4 | 1865 | 178 | 4520 |

- TABLE NOTES:
- A - MINIMUM TEST OPENING MEASURED WITH ACTUATOR FULLY EXTENDED.
 - B - MAXIMUM TEST OPENING MEASURED WITH ACTUATOR FULLY RETRACTED.
 - E - CENTER OF GRAVITY HEIGHT MEASURED WITH ACTUATOR FULLY RETRACTED.
 - F - TIP-UP HEIGHT IS "CEILING" HEIGHT REQUIRED TO STAND THE MACHINE UPRIGHT FROM HORIZONTAL SHIPPING POSITION. DOES NOT INCLUDE CLEARANCE FOR LIFTING EQUIPMENT OR SHIPPING CONTAINER.

ENGR REF R223915-3

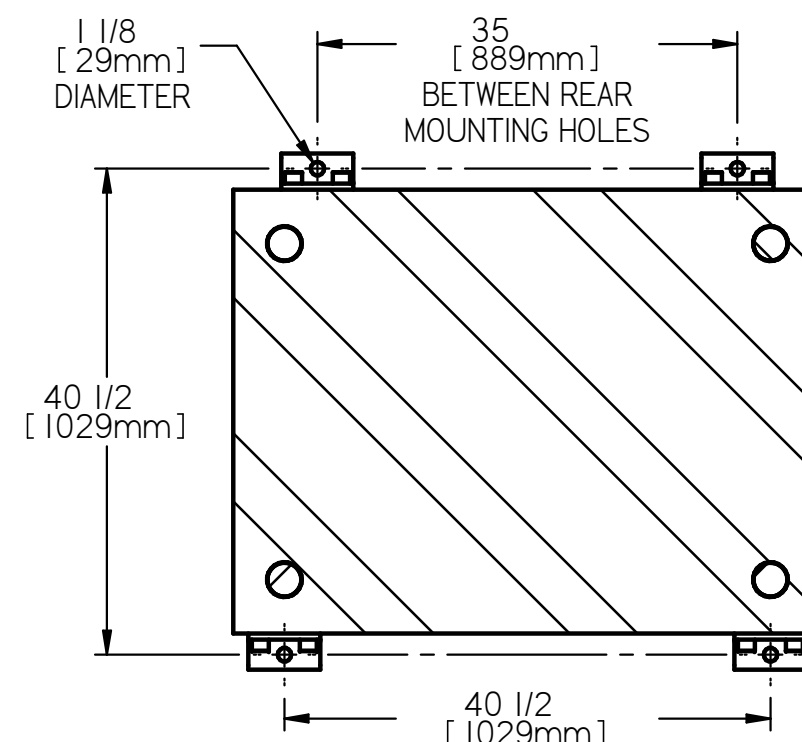
| | | | | | | | | | | | |
|---|-------------|----------------------|--------|-----------------------------|--|------------|-----|---------------|--|-------|--|
| MATERIAL: | | | | | | | | | | | |
| APPLIED PRACTICES: | THIRD ANGLE | B | 87689 | NEW HPS ASSEMBLY | | 7/21/14 | SAS | | | | |
| SURFACE FINISH 125 UNLESS OTHERWISE NOTED | | A | | REVISIONS | | 7/21/11 | JRH | | | | |
| HARDNESS: | | REV | ECO | DATE | | DATE | BY | | | | |
| FINISH: | | GENERAL ASSEMBLY | | | | DRAWN: JRH | | DATE: 7/21/11 | | | |
| INCHES - TOLERANCES NOT OTHERWISE NOTED | | 2000KPX J4 CROSSHEAD | | | | CHECKED: | | DATE: | | | |
| ±0.1 | ±0.03 | ±0.015 | ±0.005 | MADE FOR 2000KPX | | S.O. | | SHEET 1 OF 2 | | | |
| X | XX | XXX | XXXX | INSTRON INDUSTRIAL PRODUCTS | | R231657-3 | | | | REV B | |
| ANGULAR: +/- 0.5 DEGREE | | FRACTIONAL: +/- 1/64 | | GROVE CITY, PENNSYLVANIA | | | | | | | |

FIXTURE MOUNTING DETAILS

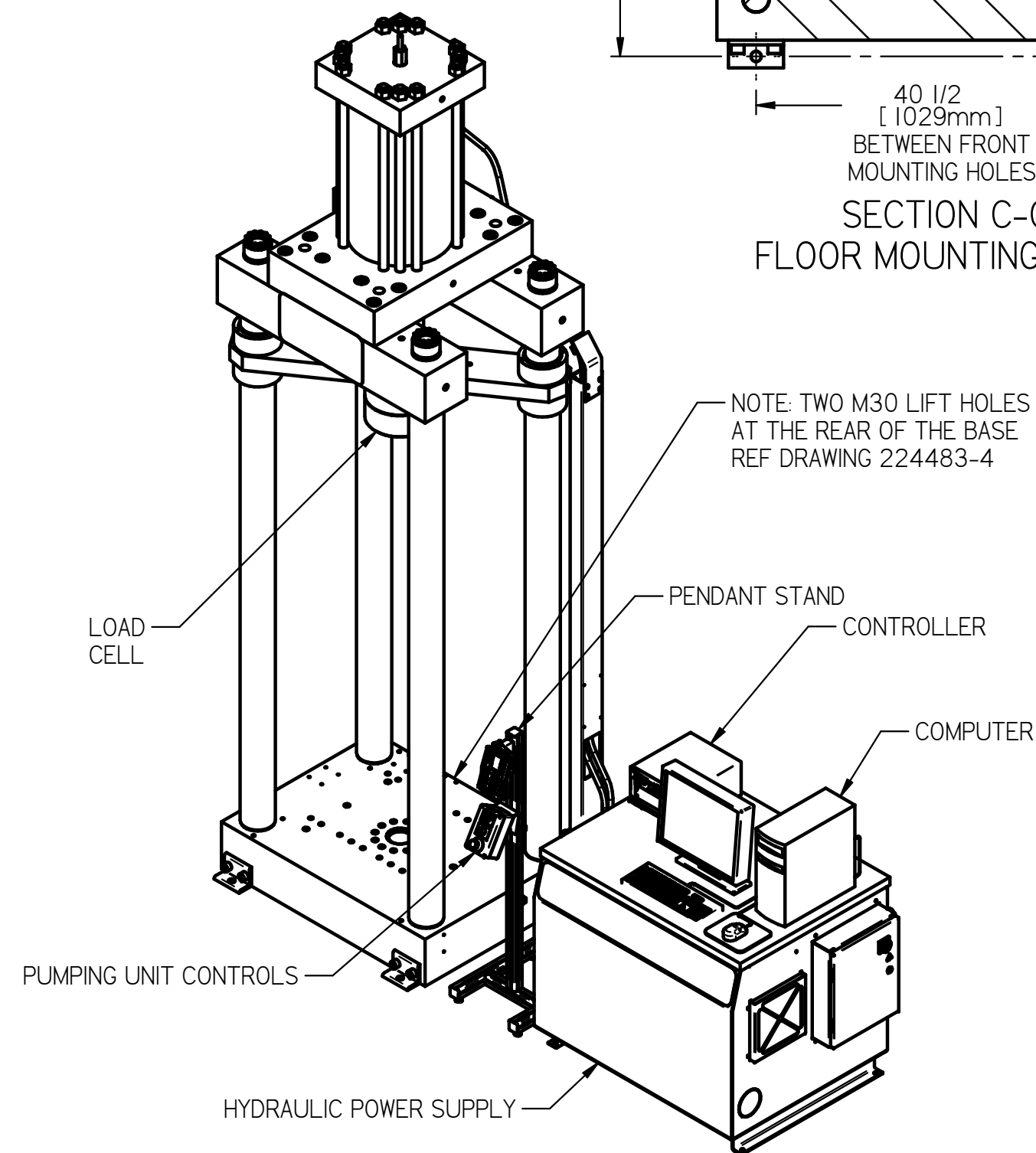
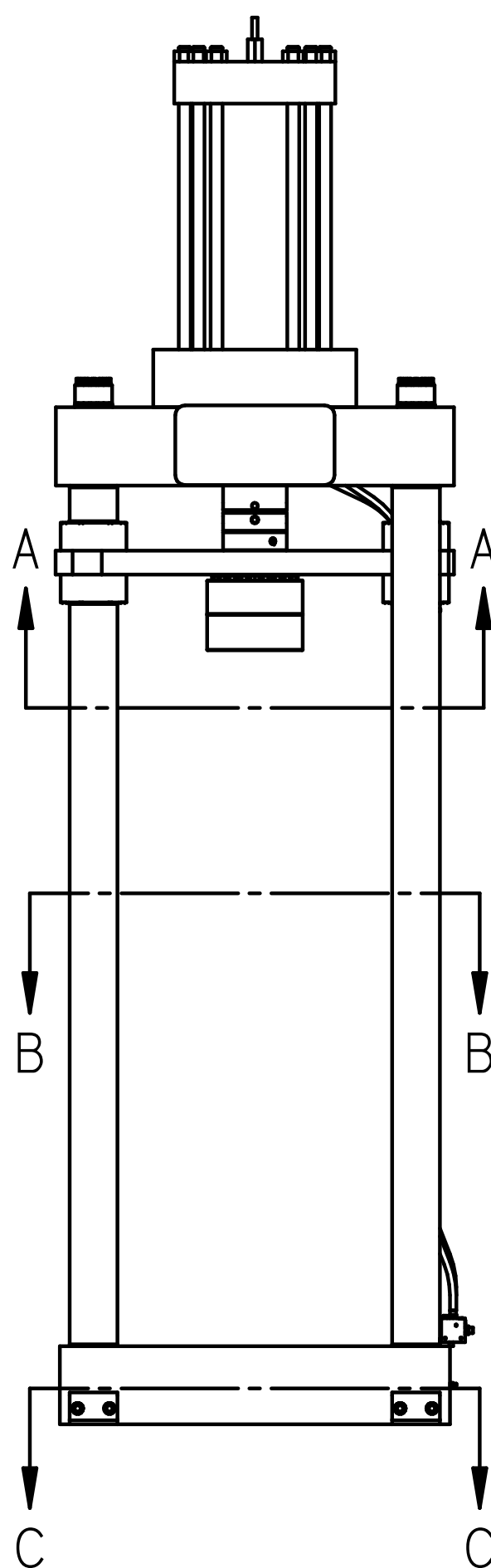
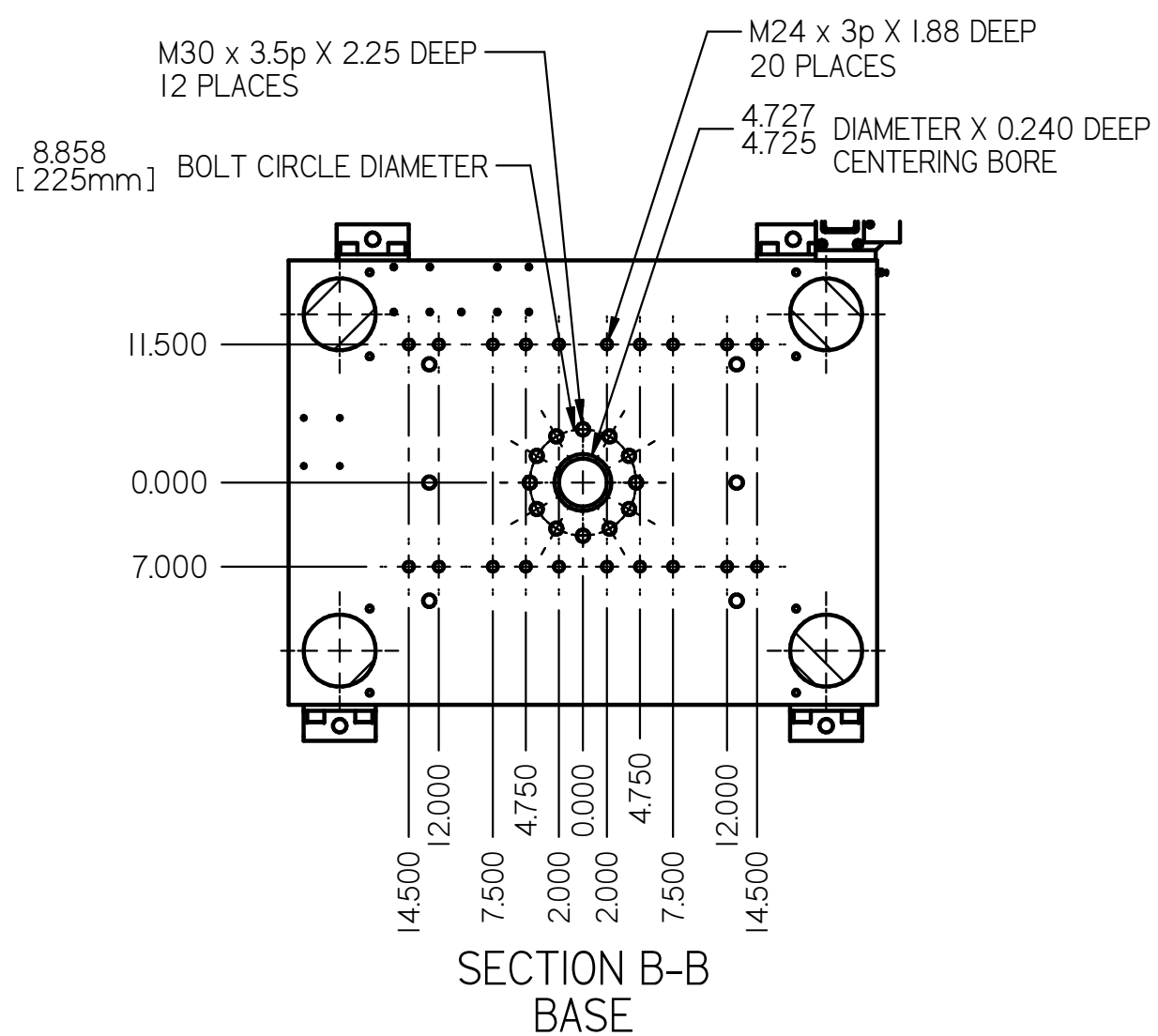
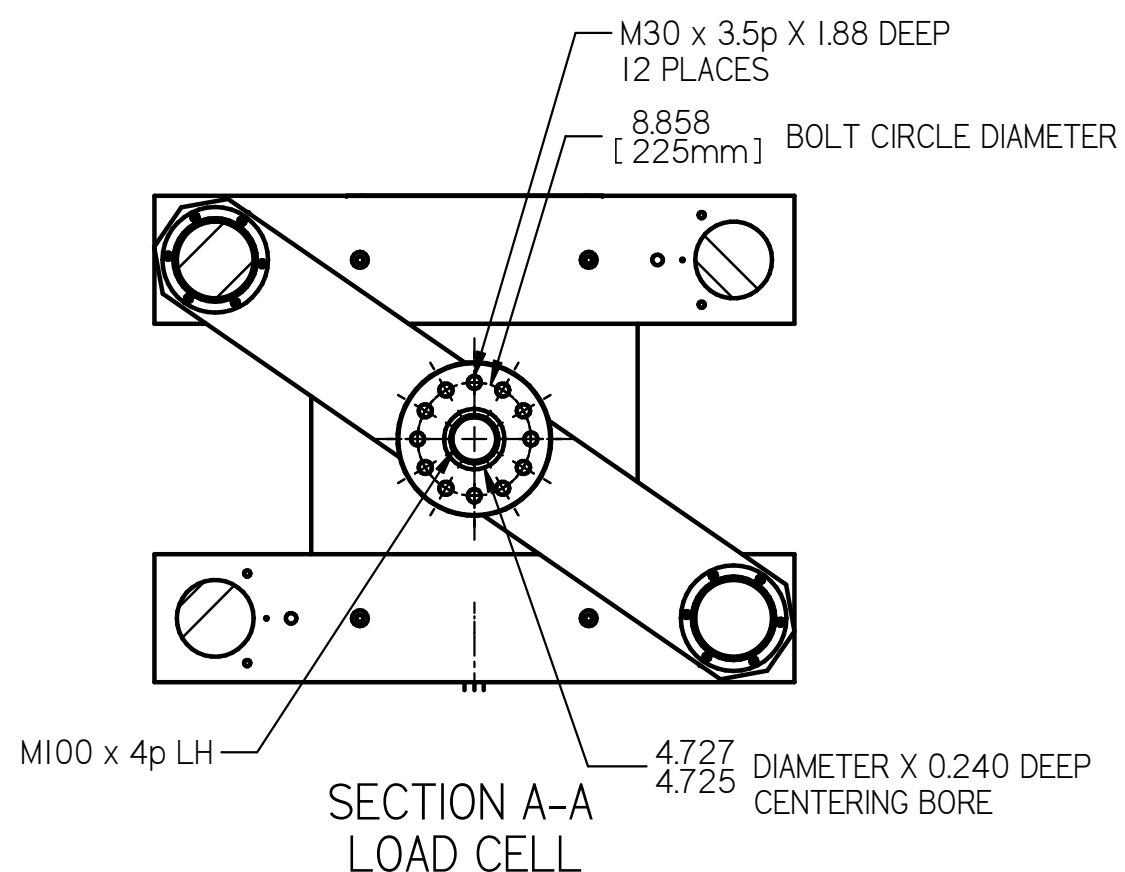


FLOOR MOUNTING BOLT DETAIL
 SECURE MACHINE TO FLOOR WITH CUSTOMER PROVIDED TIE-DOWN BOLTS PRIOR TO TESTING OPERATIONS. SEE PRE-INSTALLATION MANUAL FOR ADDITIONAL INFORMATION.

RECOMMENDED TIE-DOWN BOLTS
 1in [M24] DIAMETER, SEE SHEET #1 FOR MOUNTING FOOT THICKNESS.

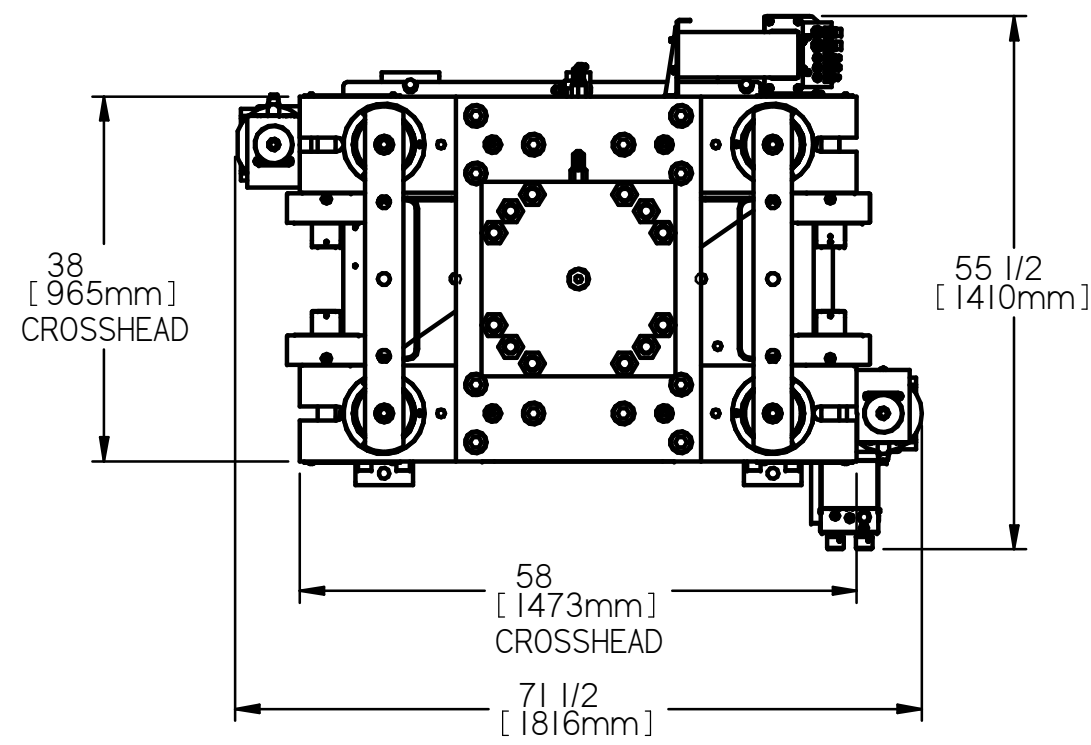


SECTION C-C
 FLOOR MOUNTING DETAIL



| | | | | | | |
|---|-------------|--------------------------|--------|-----------------------------|---------------|-----------|
| MATERIAL: | | | | | | |
| APPLIED PRACTICES: | THIRD ANGLE | B | 87689 | NEW HPS ASSEMBLY | 7/21/14 | SAS |
| SURFACE FINISH 125 UNLESS OTHERWISE NOTED | | A | ECO | RELEASED | 7/21/11 | JRH |
| HARDNESS: | | REV | | REVISIONS | DATE | BY |
| FINISH: | | GENERAL ASSEMBLY | | DRAWN: JRH | DATE: 7/21/11 | |
| INCHES - TOLERANCES NOT OTHERWISE NOTED | | 2000KPX J4 CROSSHEAD | | CHECKED: | DATE: | |
| ±0.1 | ±0.03 | ±0.015 | ±0.005 | S.O. | SHEET | 2 OF 2 |
| X | XX | XXX | XXXX | MADE FOR 2000KPX | | REV |
| ANGULAR: ±0.5 DEGREE | | FRACTIONAL: ±1/164 | | INSTRON INDUSTRIAL PRODUCTS | | R231657-3 |
| | | GROVE CITY, PENNSYLVANIA | | | | B |

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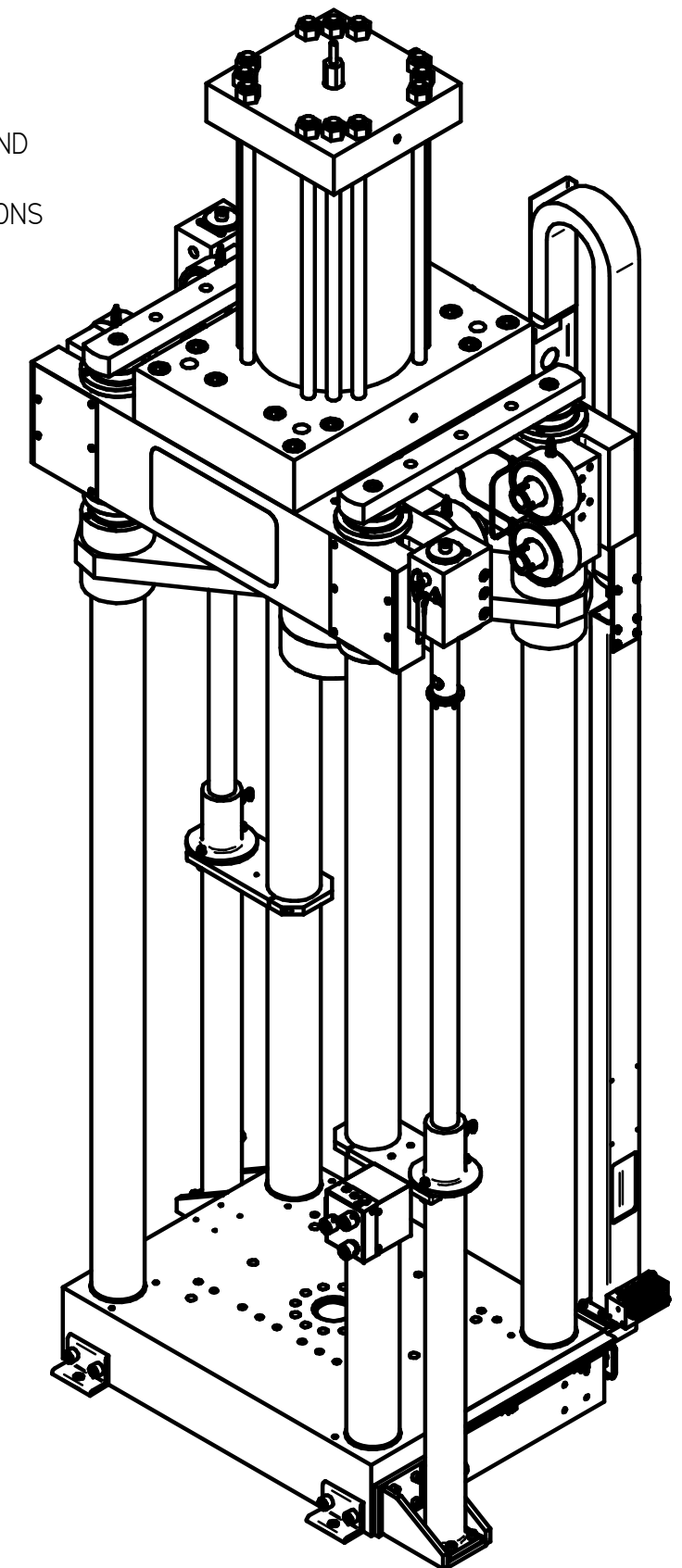
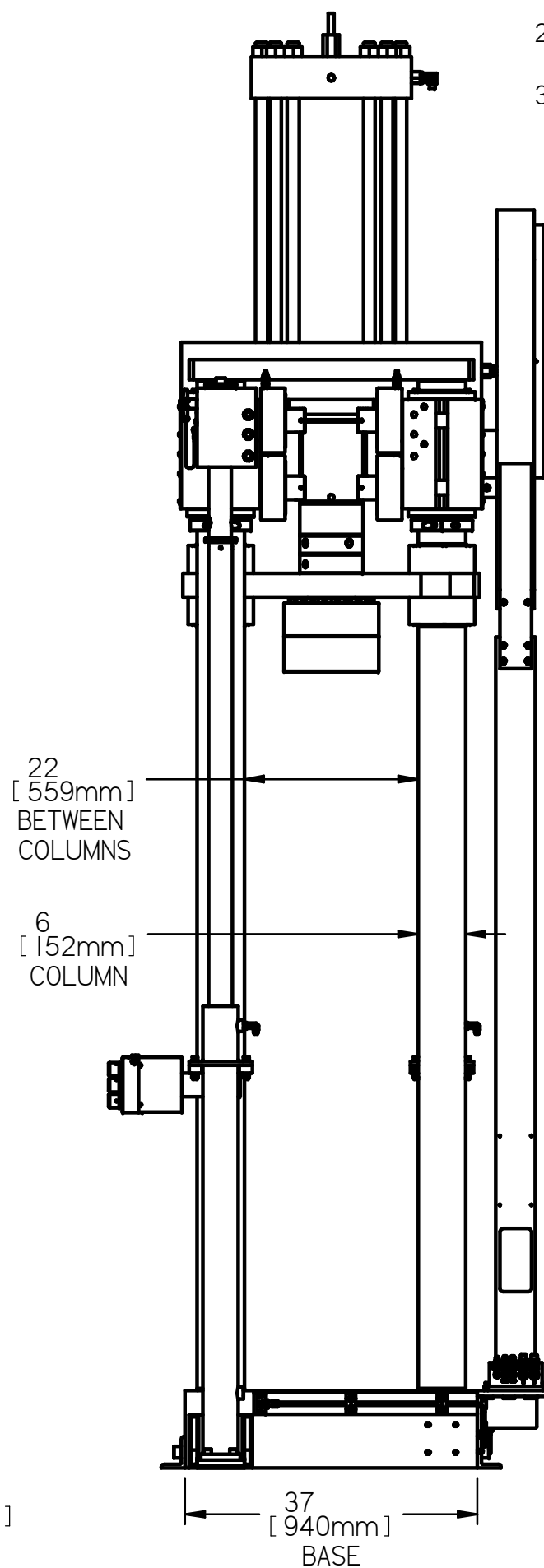
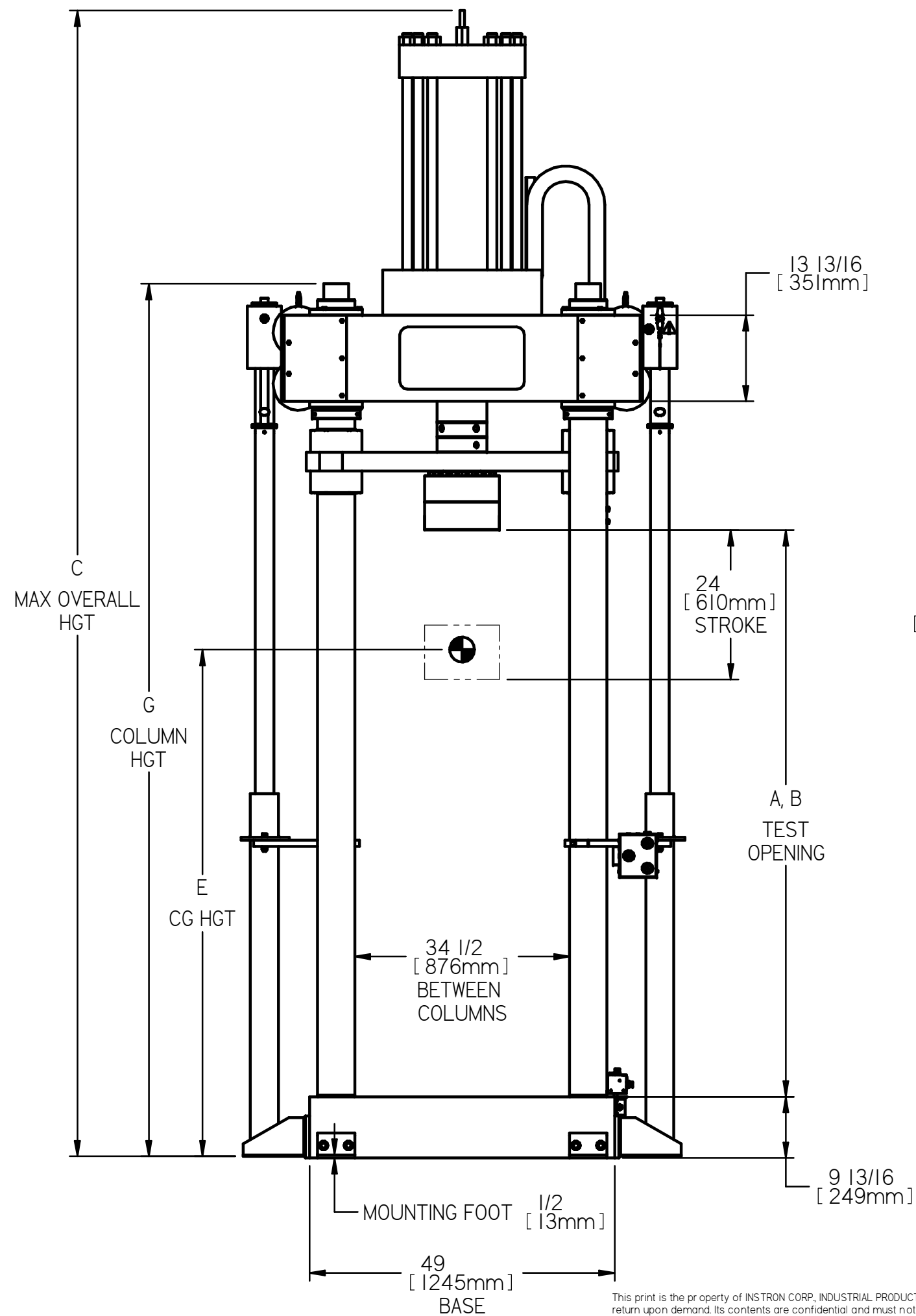
| OPTION DEPENDENT MEASUREMENTS | | | | | | | | | | | | | | | | | | |
|-------------------------------|----------------------------------|----|-----------------------------------|------|----------------------------------|------|-----------------------------------|------|--------------------------|------|----------|------|----------------------------|------|-----------------|------|-----------------|------|
| HEIGHT OPTION | A MINIMUM TEST OPENING LOW RANGE | | A MINIMUM TEST OPENING HIGH RANGE | | B MAXIMUM TEST OPENING LOW RANGE | | B MAXIMUM TEST OPENING HIGH RANGE | | C MAXIMUM OVERALL HEIGHT | | D WEIGHT | | E CENTER OF GRAVITY HEIGHT | | F TIP-UP HEIGHT | | G COLUMN HEIGHT | |
| | IN | MM | IN | MM | IN | MM | IN | MM | IN | MM | LBS | KGS | IN | MM | IN | MM | IN | MM |
| J3A | 0.0 | 0 | 15.0 | 381 | 76.0 | 1930 | 91.0 | 2311 | 184.0 | 4675 | 19930 | 9040 | 82.2 | 2090 | 144.0 | 3660 | 140.1 | 3560 |
| J3D | 0.0 | 0 | 51.0 | 1295 | 76.0 | 1930 | 127.0 | 3226 | 220.0 | 5590 | 21240 | 9635 | 103.3 | 2625 | 180.0 | 4570 | 176.1 | 4475 |

TABLE NOTES:

- A - MINIMUM TEST OPENING MEASURED WITH ACTUATOR FULLY EXTENDED AND CROSSHEAD IN LOWEST POSITION.
- B - MAXIMUM TEST OPENING MEASURED WITH ACTUATOR FULLY RETRACTED AND CROSSHEAD IN HIGHEST POSITION.
- C - MAXIMUM OVERALL HEIGHT MEASURED WITH CROSSHEAD IN HIGHEST POSITION.
- E - CENTER OF GRAVITY MEASURED WITH CROSSHEAD IN HIGHEST POSITION.
- F - TIP-UP HEIGHT IS "CEILING" HEIGHT REQUIRED TO STAND THE MACHINE UPRIGHT FROM HORIZONTAL SHIPPING POSITION. DOES NOT INCLUDE CLEARANCE FOR LIFTING EQUIPMENT OR SHIPPING CONTAINER.

GENERAL NOTES:

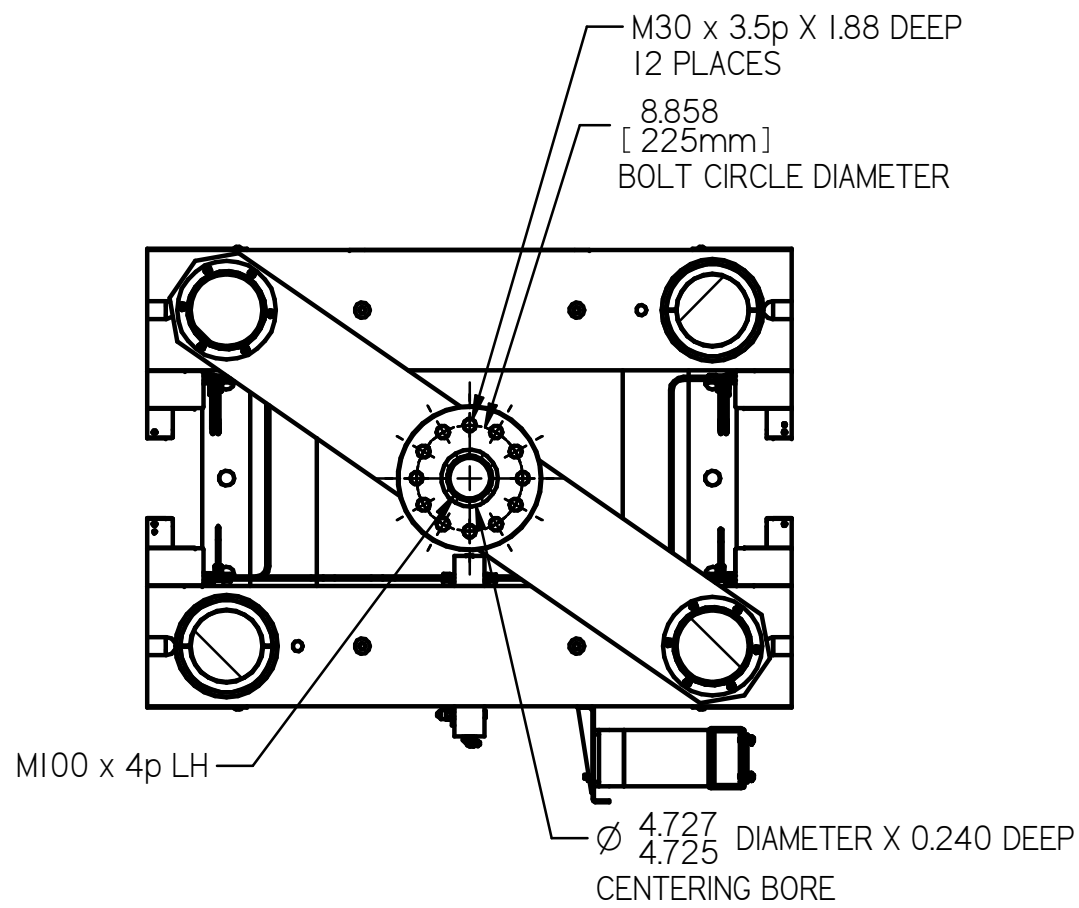
- NON-TABULATED DIMENSIONS ARE WITHIN THE FOLLOWING TOLERANCE
US CUSTOMARY DIMENSIONS ARE +/- 1/32in
METRIC DIMENSIONS ARE +/- 0.5mm
- ALL DIMENSIONS, WEIGHTS AND CENTER OF GRAVITY (CG) ARE NOMINAL AND MAY BE AFFECTED BY ACCESSORIES AND OPTIONS
- SEE PRE-INSTALLATION MANUAL FOR LIFTING AND HANDLING INSTRUCTIONS



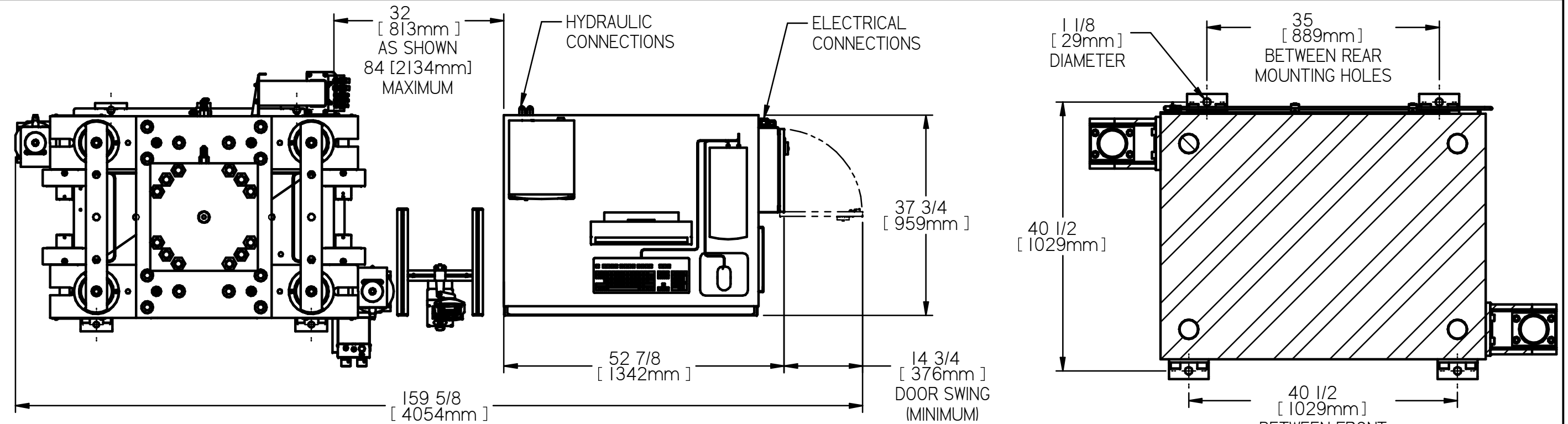
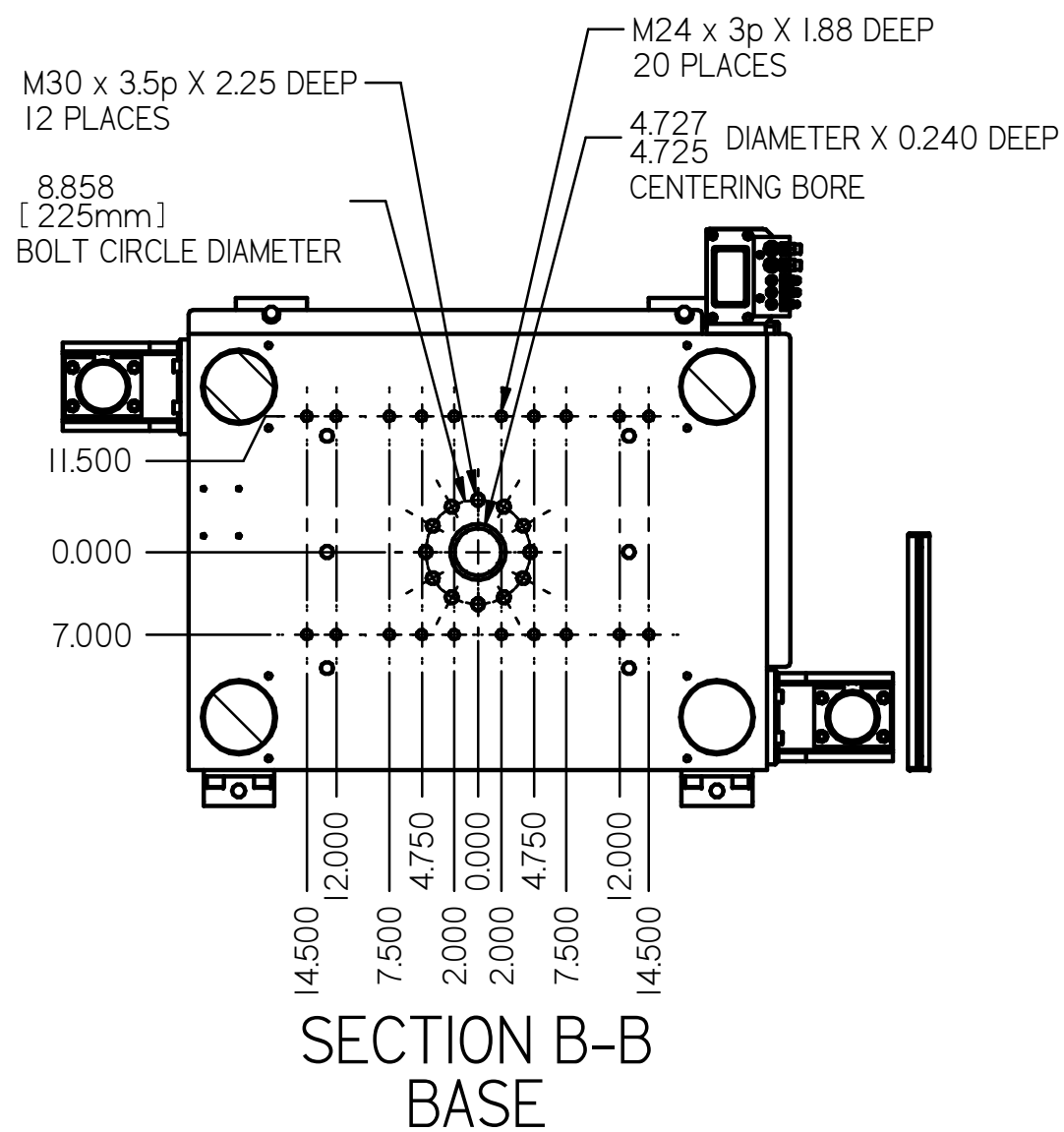
ENGR REF R223916-3

| | | | | | | | | | |
|---|-------------|----------------------|--------|-----------------------------|--|-----------|-----|-------|---------|
| MATERIAL: | | | | | | | | | |
| APPLIED PRACTICES: | THIRD ANGLE | B | 87689 | NEW HPS ASSEMBLY | | 7/21/14 | SAS | | |
| SURFACE FINISH 125 UNLESS OTHERWISE NOTED | | A | | RELEASED | | 7/21/11 | JRH | | |
| HARDNESS: | | REV | ECO | REVISIONS | | DATE | BY | | |
| FINISH: | | GENERAL ASSEMBLY | | | | DRAWN: | JRH | DATE: | 7/21/11 |
| INCHES - TOLERANCES NOT OTHERWISE NOTED | | 2000KPX J3 CROSSHEAD | | | | CHECKED: | | DATE: | |
| ±0.1 | ±0.03 | ±0.015 | ±0.005 | MADE FOR 2000KPX | | S.O. | | SHEET | 1 OF 2 |
| X | XX | XXX | XXXX | INSTRON INDUSTRIAL PRODUCTS | | R231658-3 | | REV | B |
| ANGULAR: ±0.5 DEGREE | | FRACTIONAL: ±1/64 | | GROVE CITY, PENNSYLVANIA | | | | | |

FIXTURE MOUNTING DETAILS



SECTION A-A LOAD CELL



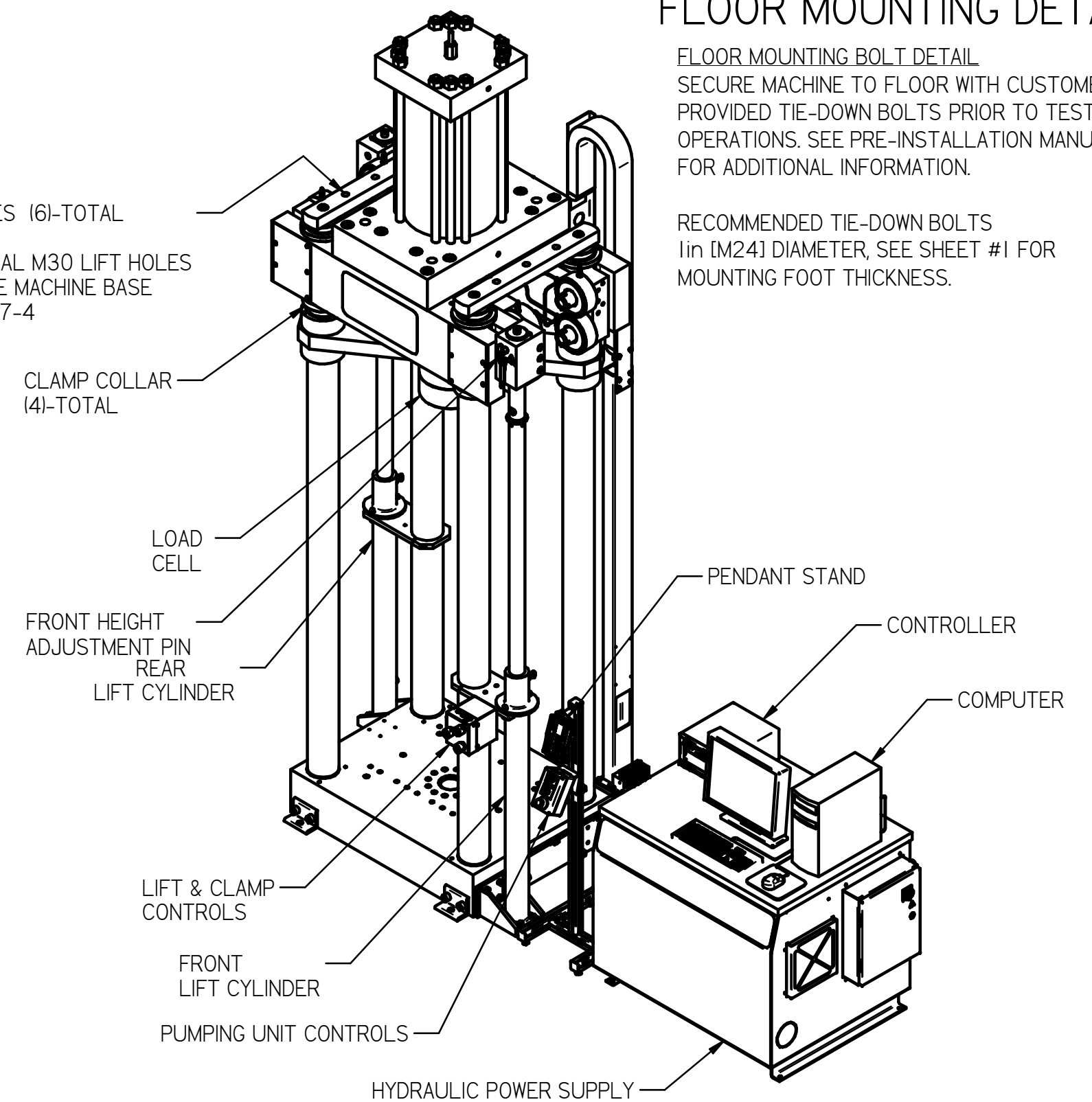
SECTION C-C FLOOR MOUNTING DETAIL

FLOOR MOUNTING BOLT DETAIL.
SECURE MACHINE TO FLOOR WITH CUSTOMER
PROVIDED TIE-DOWN BOLTS PRIOR TO TESTING
OPERATIONS. SEE PRE-INSTALLATION MANUAL
FOR ADDITIONAL INFORMATION.

RECOMMENDED TIE-DOWN BOLTS
1in [M24] DIAMETER, SEE SHEET #1 FOR
MOUNTING FOOT THICKNESS.

M36 x 4p LIFT HOLES (6)-TOTAL

NOTE: TWO ADDITIONAL M30 LIFT HOLES
AT THE REAR OF THE MACHINE BASE
REF DRAWING 223917-4

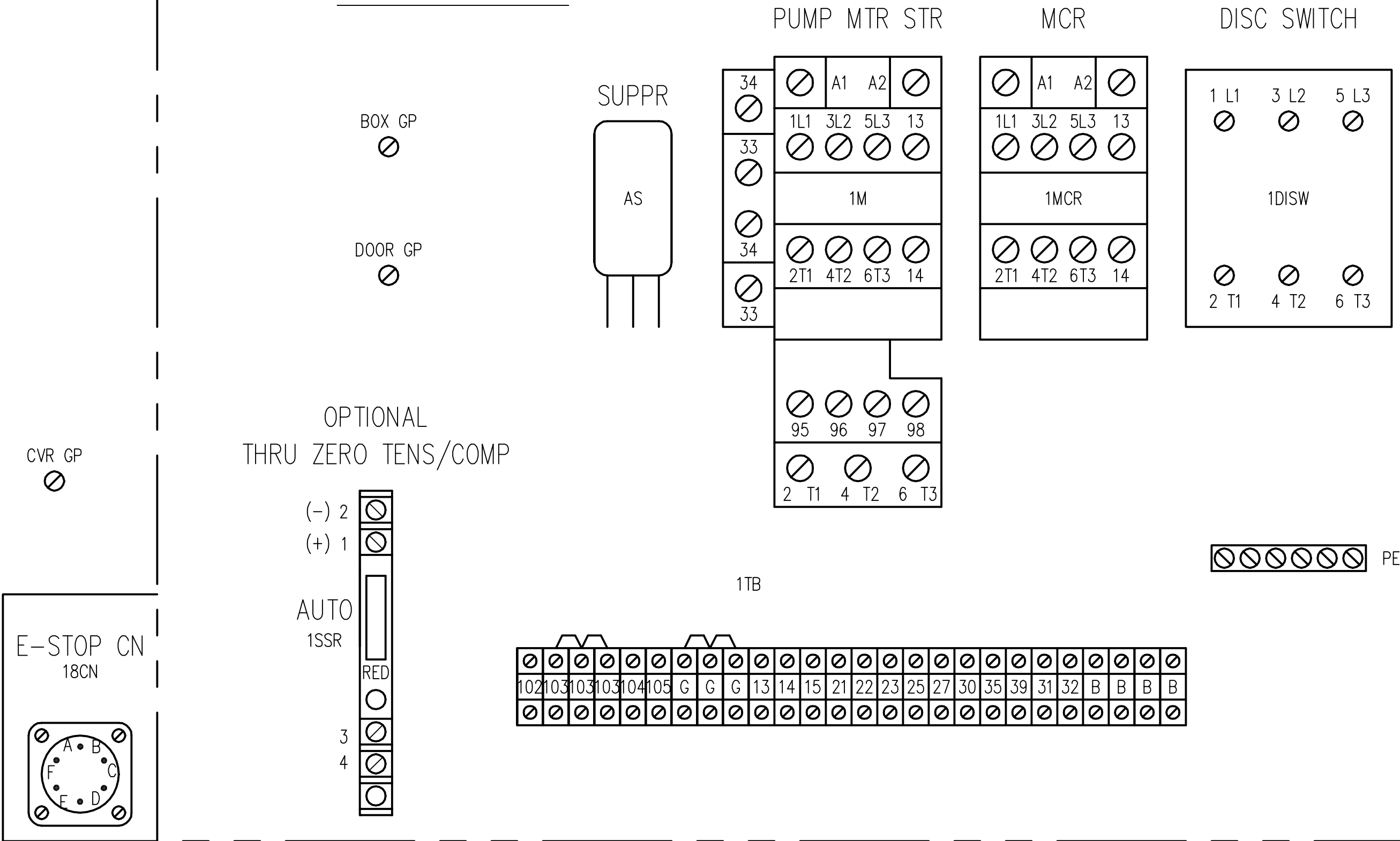


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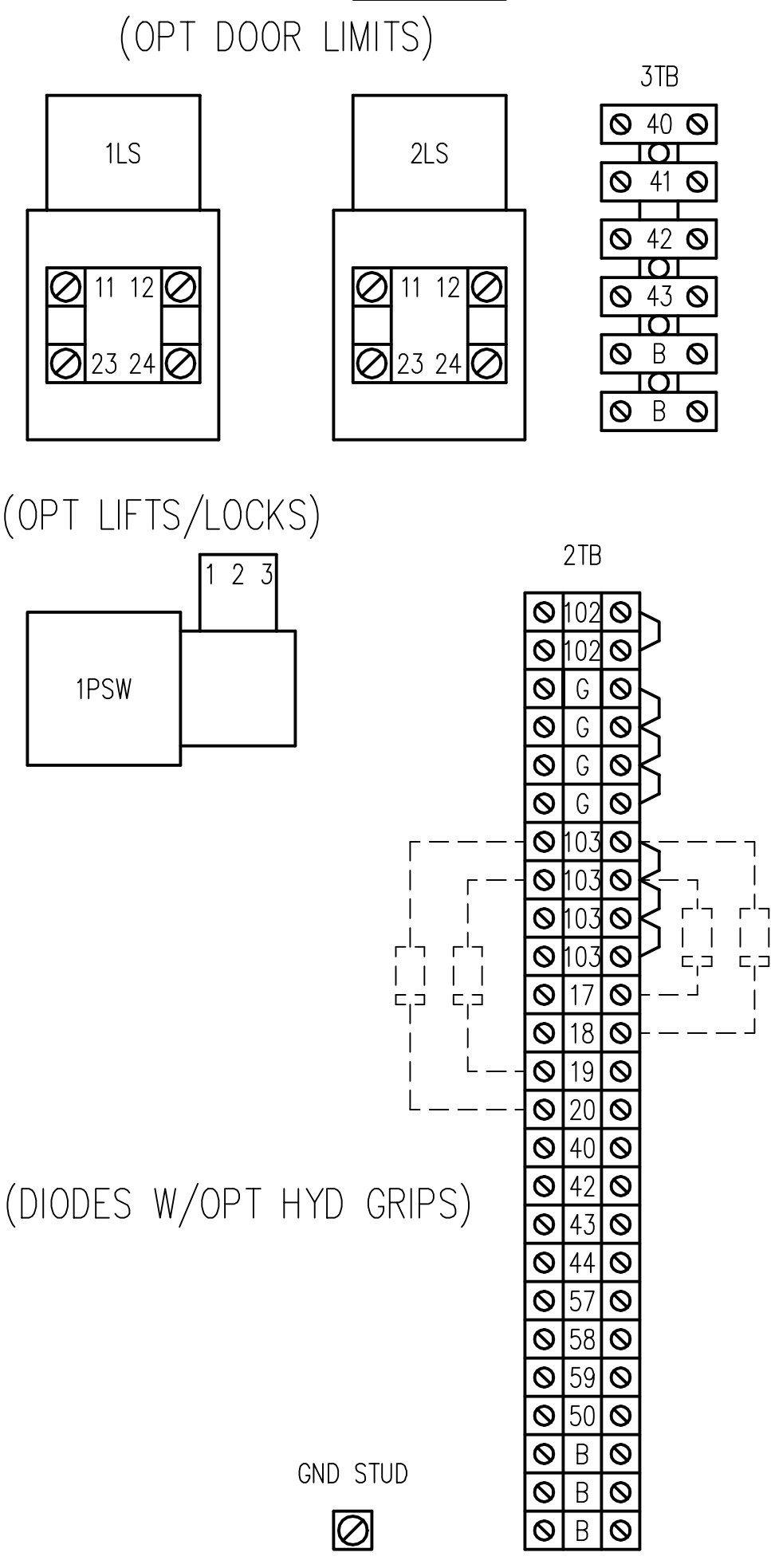
| | | | | | | | |
|---|-------------|--|--------|-----------------------------|------------|---------------|--------------|
| MATERIAL: | | | | | | | |
| APPLIED PRACTICES: | THIRD ANGLE | B | 87689 | NEW HPS ASSEMBLY | 7/21/14 | SAS | |
| SURFACE FINISH 125 UNLESS OTHERWISE NOTED | | A | ECO | RELEASES | 7/21/11 | JRH | |
| HARDNESS: | | REV | | REVISIONS | DATE | BY | |
| FINISH: | | GENERAL ASSEMBLY 2000KPX J3 CROSSHEAD | | | DRAWN: JRH | DATE: 7/21/11 | |
| INCHES - TOLERANCES NOT OTHERWISE NOTED | | MADE FOR 2000KPX | | | CHECKED: | DATE: | |
| ±0.1 | ±0.03 | ±0.015 | ±0.005 | S.O. | | | SHEET 2 OF 2 |
| X | XX | XXX | XXXX | INSTRON INDUSTRIAL PRODUCTS | | | REV |
| ANGULAR: ±0.05 DEGREE | | FRACTIONAL: ±1/164 | | GROVE CITY, PENNSYLVANIA | | | B |

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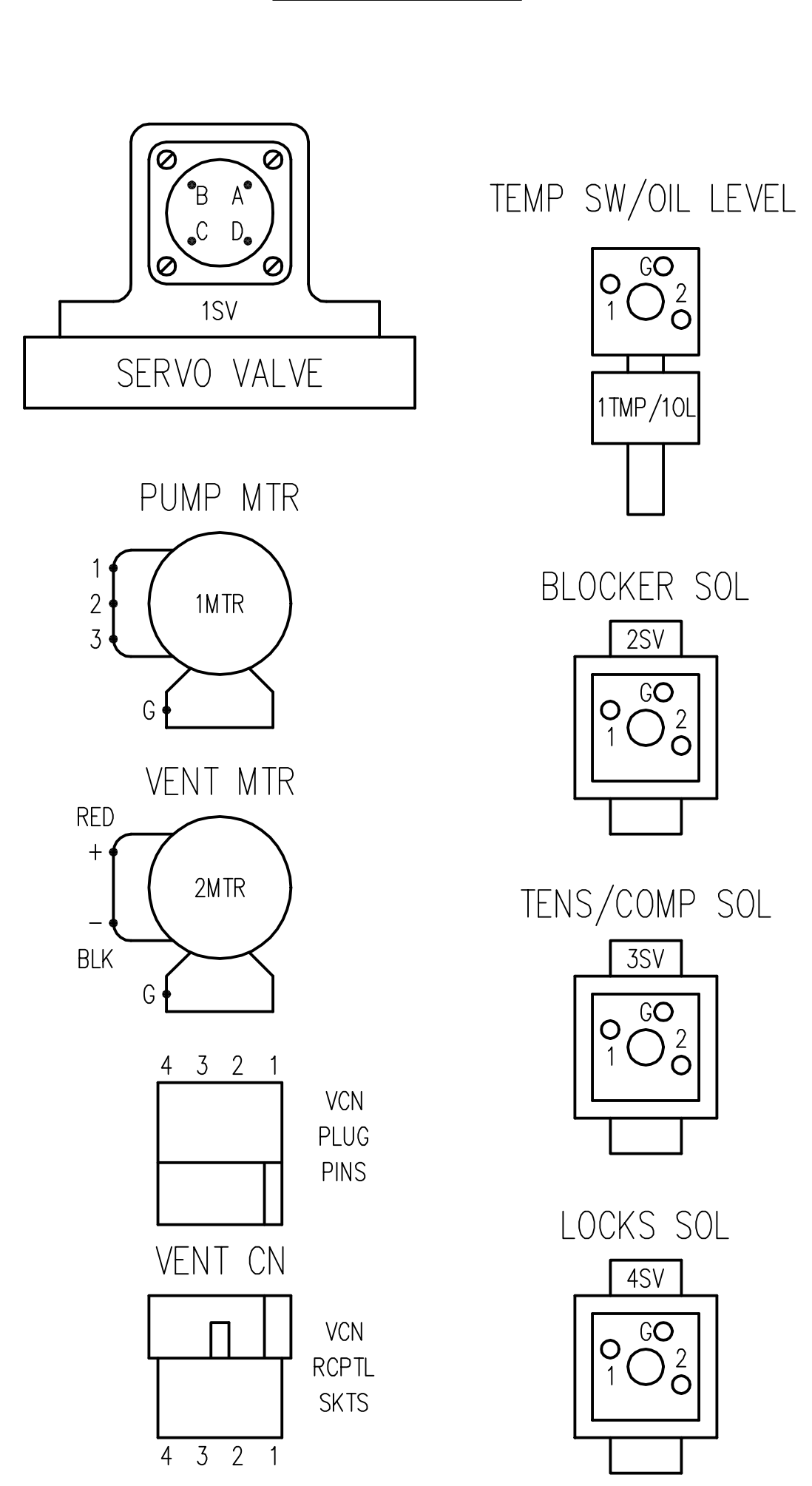
ELECTRICAL PANEL



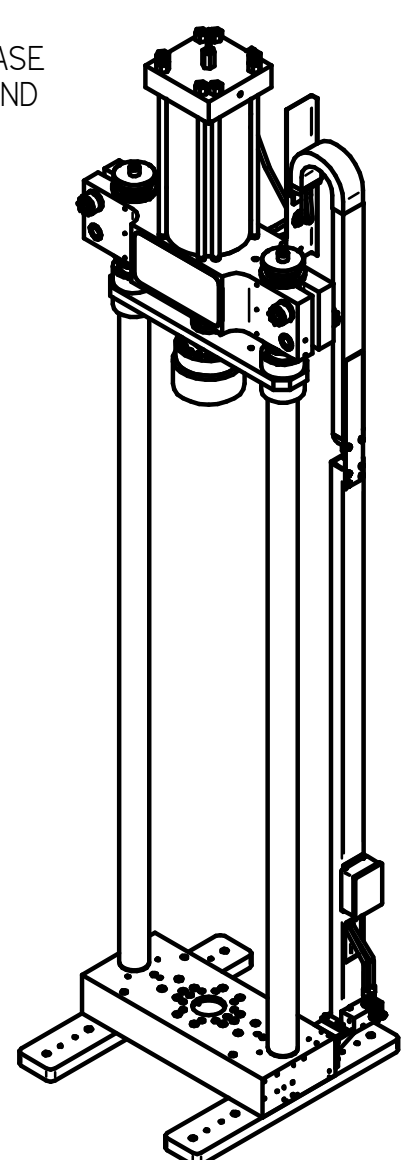
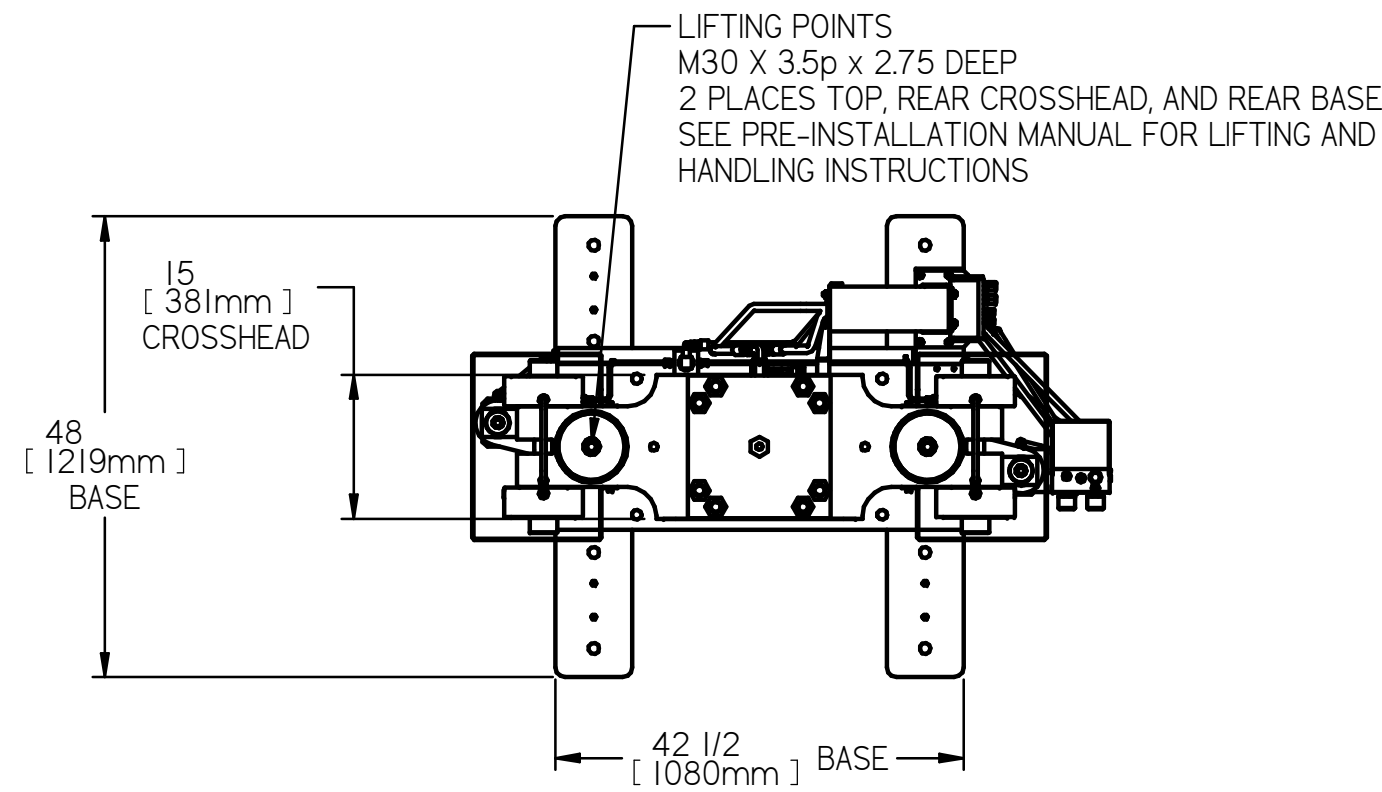
MACHINE



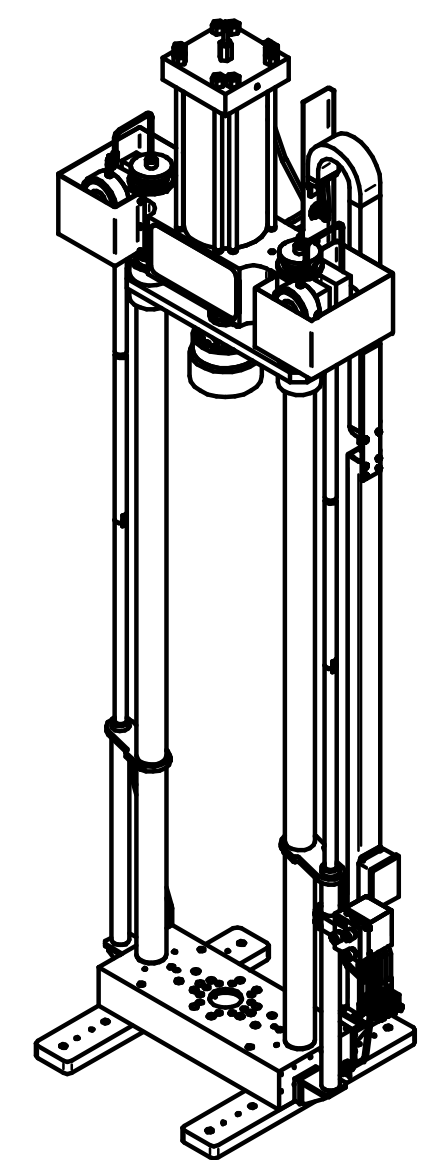
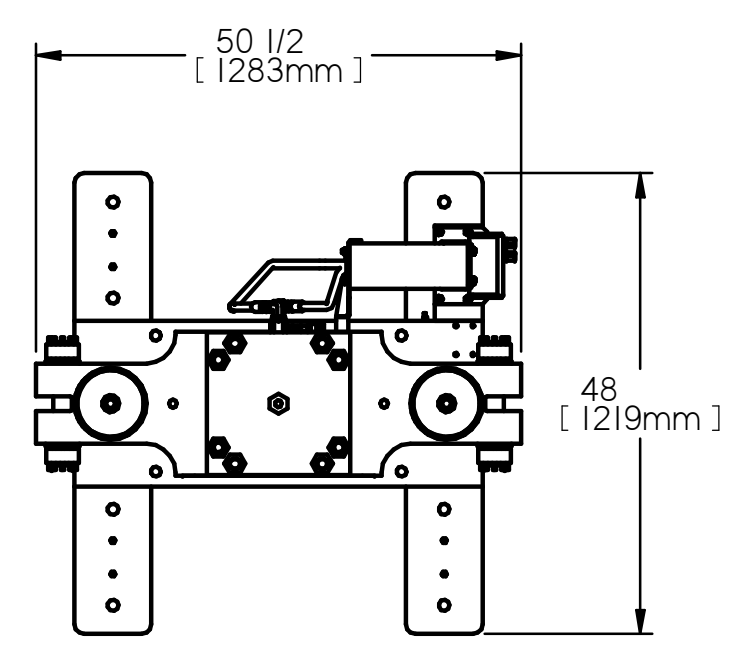
PUMPING UNIT



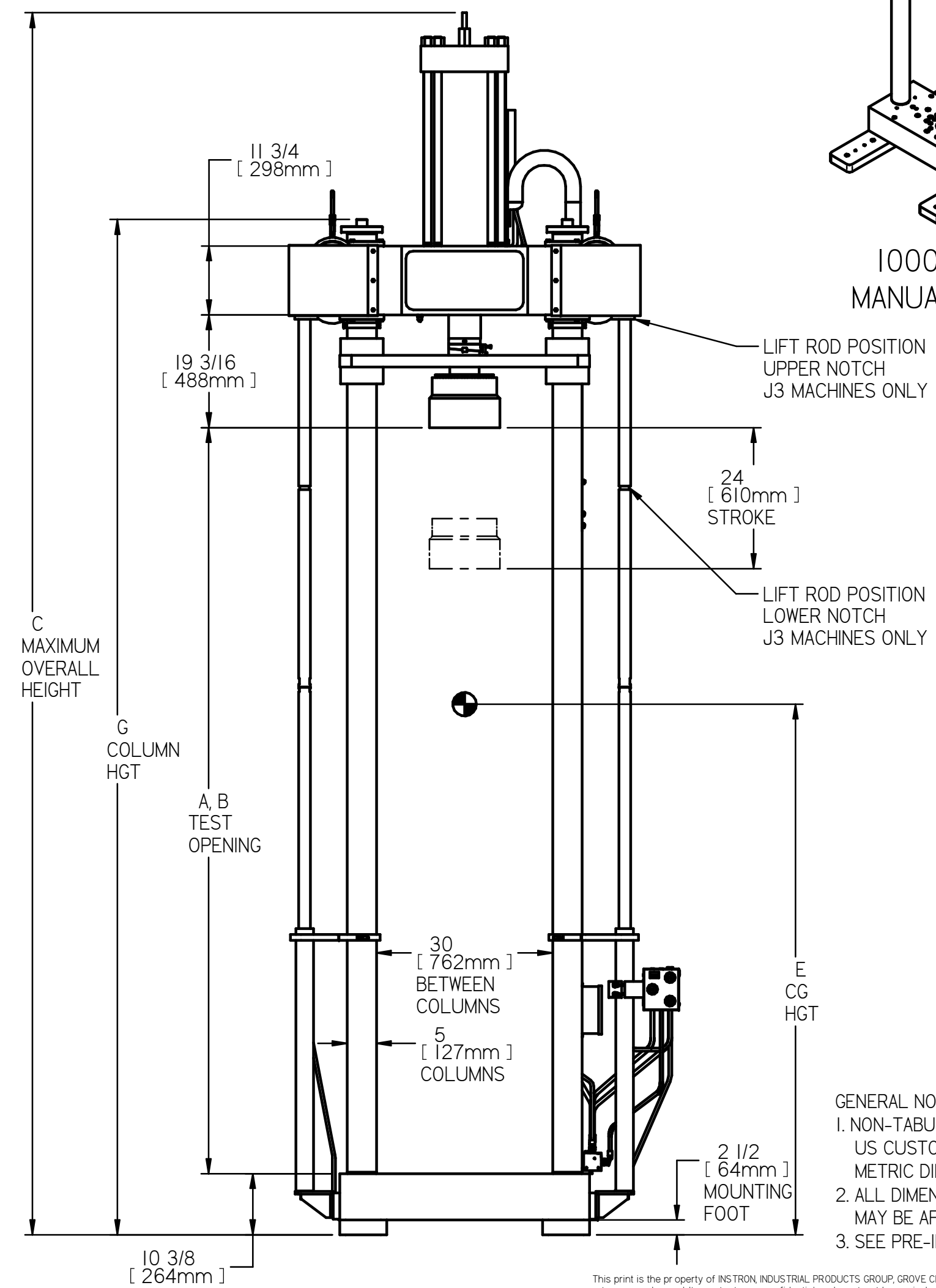
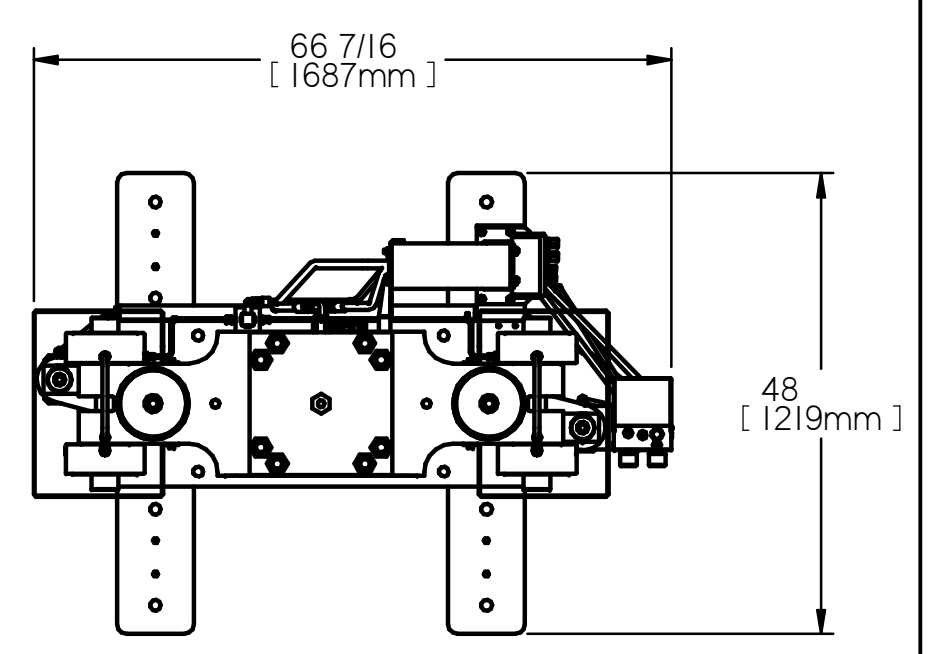
| | | | | | |
|---|--|--------------------------|--|----------------|--|
| MATERIAL: | | THIRD ANGLE | | DRAWN: SAS | |
| APPLIED PRACTICES: | | REVERSE DIODE POLARITY | | DATE: 10/17/13 | |
| SURFACE FINISH 125 UNLESS OTHERWISE NOTED | | ADD BOX GP AND DOOR GP | | DATE: 6/10/15 | |
| HARDNESS: | | REVISIONS | | BY | |
| FINISH: INCHES - TOLERANCES NOT OTHERWISE NOTED | | ECO | | DATE: 10/17/13 | |
| F0.1 F0.03 F0.015 F0.005 | | REV | | DATE: 10/17/13 | |
| X X XX XXX | | ECO | | DATE: 10/17/13 | |
| ANODIZE F0.5 DEG FRACTIONAL: ±1/64 | | REV | | DATE: 10/17/13 | |
| MADE FOR: 5900 CUTLER | | LAYOUT-KN/KX/KPX MACH | | SHEET 1 OF 1 | |
| INSTRON INDUSTRIAL PRODUCTS | | GROVE CITY, PENNSYLVANIA | | R234322-3 | |
| REV | | S.O. | | F | |



1000KPX-J1
MANUAL LOCKS



1000KPX-J3
HYDRAULIC LIFTS AND LOCKS



| OPTION DEPENDENT MEASUREMENTS | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|--------------------------|----------------|----------------|-----|----------------|----------------|--------------------------|------|----|------|-----|------|----------------------------|------------|------|------------------------------|-----|-------------------|-----|------------------|-----|------|
| Option | A - Minimum Test Opening | | | | | | B - Maximum Test Opening | | | | | | C - Maximum Overall Height | D - Weight | | E - Center of Gravity Height | | F - Tip-Up Height | | G- Column Height | | |
| | J1 | J3 Lower Notch | J3 Upper Notch | J1 | J3 Lower Notch | J3 Upper Notch | in | mm | in | mm | in | mm | | | | | | | | | | lbs |
| J1C | 0 | 0 | - | - | - | - | 115 | 2921 | - | - | - | - | 197 | 4995 | 7290 | 3310 | 95 | 2415 | 163 | 4145 | 161 | 4090 |
| J1D | 0 | 0 | - | - | - | - | 127 | 3226 | - | - | - | - | 209 | 5300 | 7430 | 3375 | 101 | 2570 | 175 | 4445 | 173 | 4395 |
| J3C | - | - | 35 | 889 | 52 | 1321 | - | - | 98 | 2489 | 115 | 2921 | 197 | 4995 | 7900 | 3585 | 96 | 2440 | 163 | 4145 | 161 | 4090 |
| J3D | - | - | 35 | 889 | 64 | 1626 | - | - | 98 | 2489 | 127 | 3226 | 209 | 5300 | 8060 | 3660 | 102 | 2595 | 175 | 4445 | 173 | 4395 |

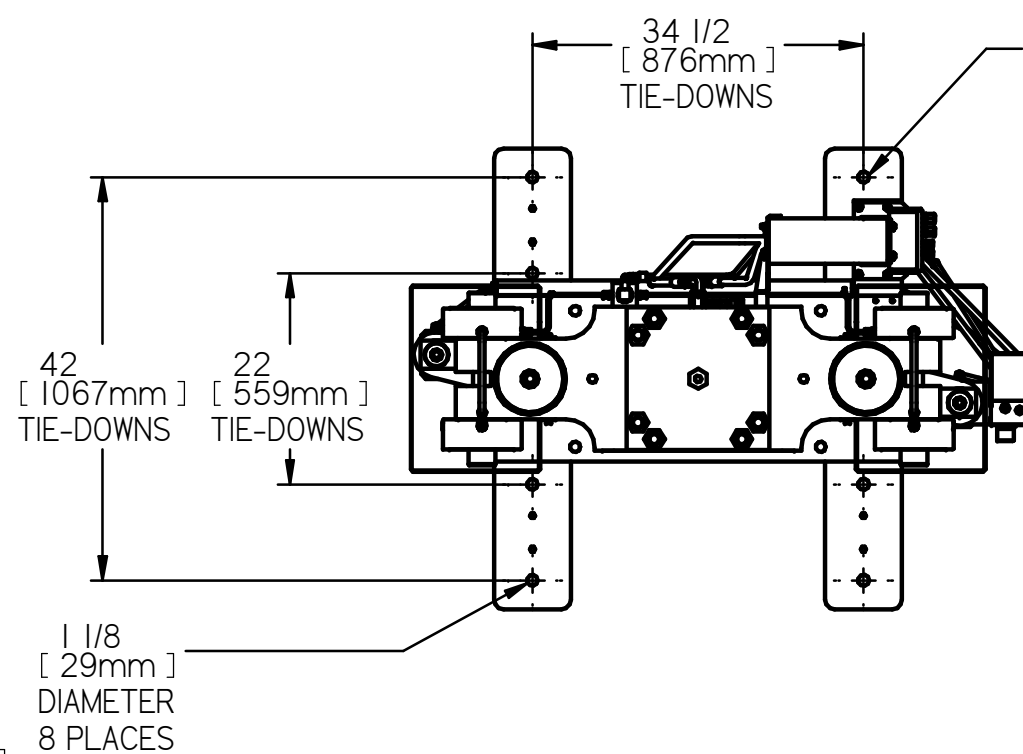
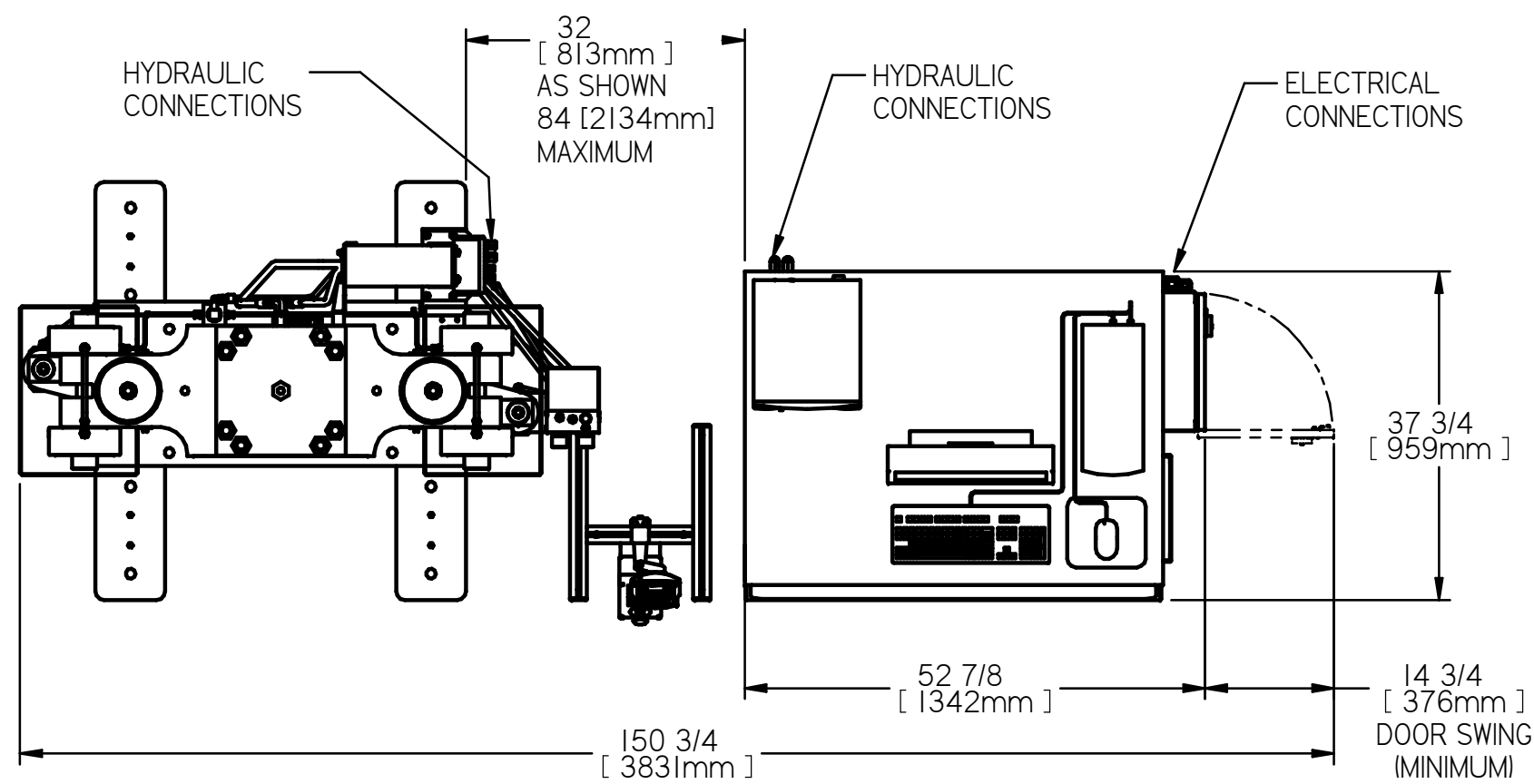
TABLE NOTES:
 A - MINIMUM TEST OPENING MEASURED WITH ACTUATOR FULLY EXTENDED.
 B - MAXIMUM TEST OPENING MEASURED WITH ACTUATOR FULLY RETRACTED.
 E - CENTER OF GRAVITY HEIGHT MEASURED WITH ACTUATOR FULLY RETRACTED.
 F - TIP-UP HEIGHT IS "CEILING" HEIGHT REQUIRED TO STAND THE MACHINE UPRIGHT FROM HORIZONTAL SHIPPING POSITION. DOES NOT INCLUDE CLEARANCE FOR LIFTING EQUIPMENT OR SHIPPING CONTAINER.

- GENERAL NOTES:
 1. NON-TABULATED DIMENSIONS ARE WITHIN THE FOLLOWING TOLERANCE
 US CUSTOMARY DIMENSIONS ARE +/- 1/32in
 METRIC DIMENSIONS ARE +/- 0.5mm
 2. ALL DIMENSIONS, WEIGHTS AND CENTER OF GRAVITY (CG) ARE NOMINAL AND MAY BE AFFECTED BY ACCESSORIES AND OPTIONS
 3. SEE PRE-INSTALLATION MANUAL FOR LIFTING AND HANDLING INSTRUCTIONS

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ENGR REF R231643-3

| | | | | | | | | |
|--|--------|--------------------------|----------|-----------------------------|-------|------------------------------|---------|--------|
| MATERIAL: | | THIRD ANGLE | | B | 87689 | ELECT/HYD CONNECTION CALLOUT | 6/24/14 | SAS |
| * DENOTES CRITICAL FEATURES AND DIMENSIONS TO BE INSPECTED | | THIRD ANGLE | | A | ECO | RELEASED | 5/27/14 | JRH |
| SURFACE FINISH Ra 125 µin. UNLESS OTHERWISE NOTED | | HARDNESS: | | REV | ECO | REVISIONS | DATE | BY |
| FINISH: | | GENERAL ASSEMBLY | | DRAWN: JRH | | DATE: 3/31/14 | | |
| INCHES - TOLERANCES NOT OTHERWISE NOTED | | 1000KPX-J1/J3 | | CHECKED: | | DATE: | | |
| ±0.03 | ±0.015 | ±0.005 | MADE FOR | S.O. | | SHEET | | 1 OF 2 |
| ANGULAR +/- 0.5 DEGREE | | FRACTIONAL +/- 1/64 | | INSTRON INDUSTRIAL PRODUCTS | | R234433-3 | | REV |
| | | GROVE CITY, PENNSYLVANIA | | | | | | B |

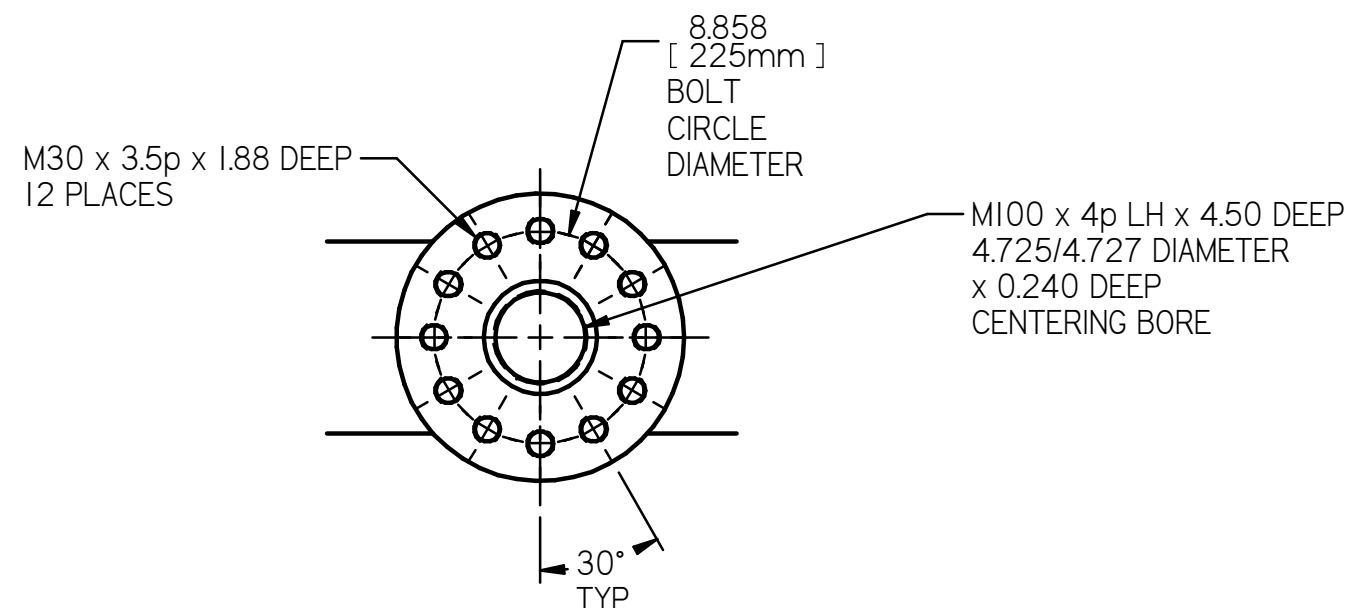
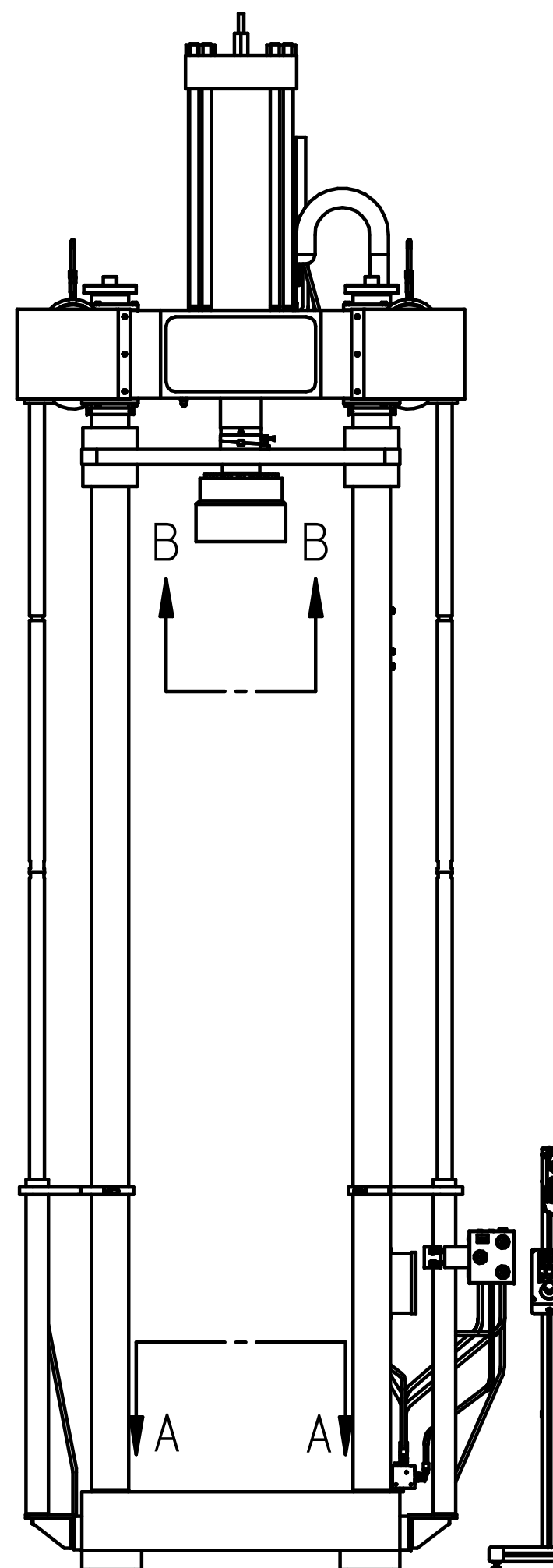


USE OUTER 4 PLACES FOR MOUNTING - INNER 4 PLACES CAN BE USED IF NEEDED FOR CLEARANCE PROBLEMS.

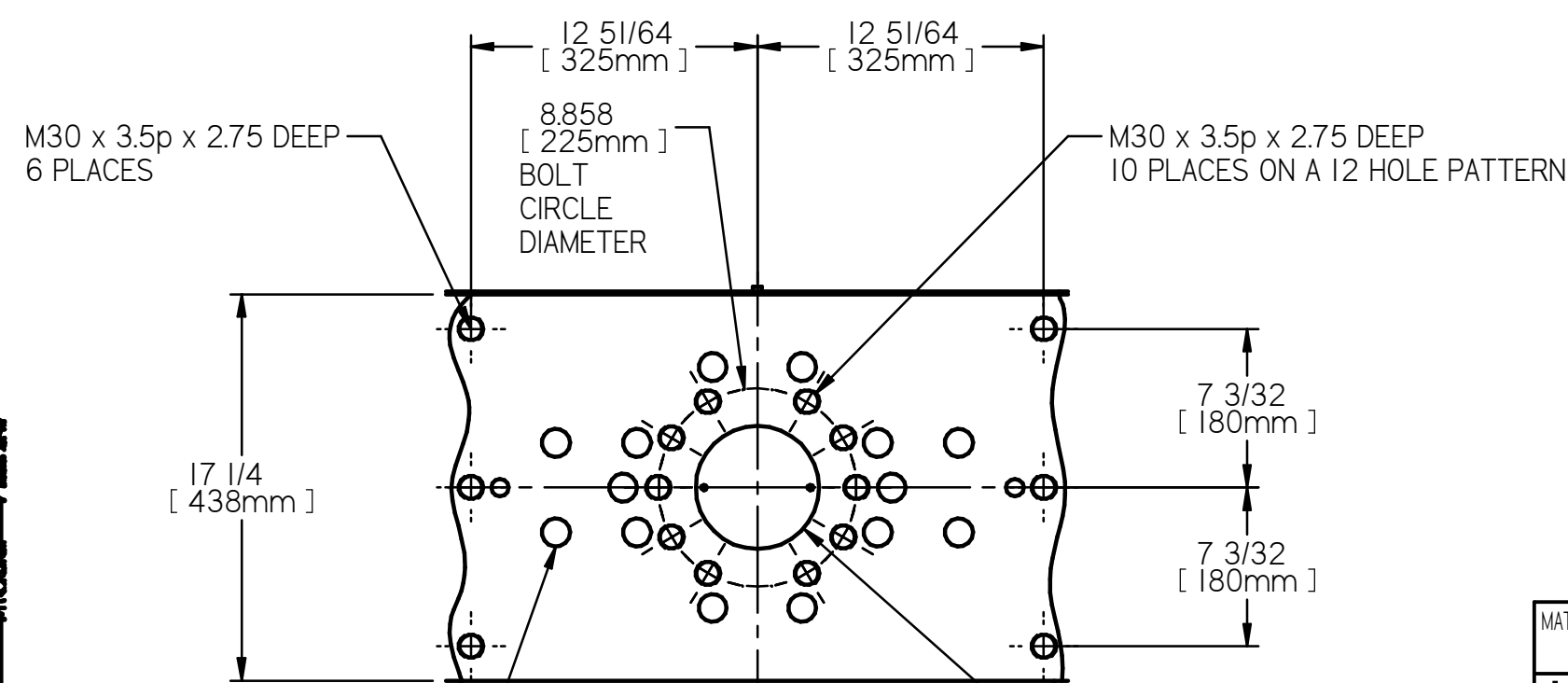
FLOOR MOUNTING BOLT DETAIL
 SECURE MACHINE TO FLOOR WITH CUSTOMER PROVIDED TIE-DOWN BOLTS PRIOR TO TESTING OPERATIONS. SEE PRE-INSTALLATION MANUAL FOR ADDITIONAL INFORMATION.

RECOMMENDED TIE-DOWN BOLTS
 1in [M24] DIAMETER, SEE SHEET #1 FOR MOUNTING FOOT THICKNESS.

FLOOR MOUNTING BOLT DETAIL

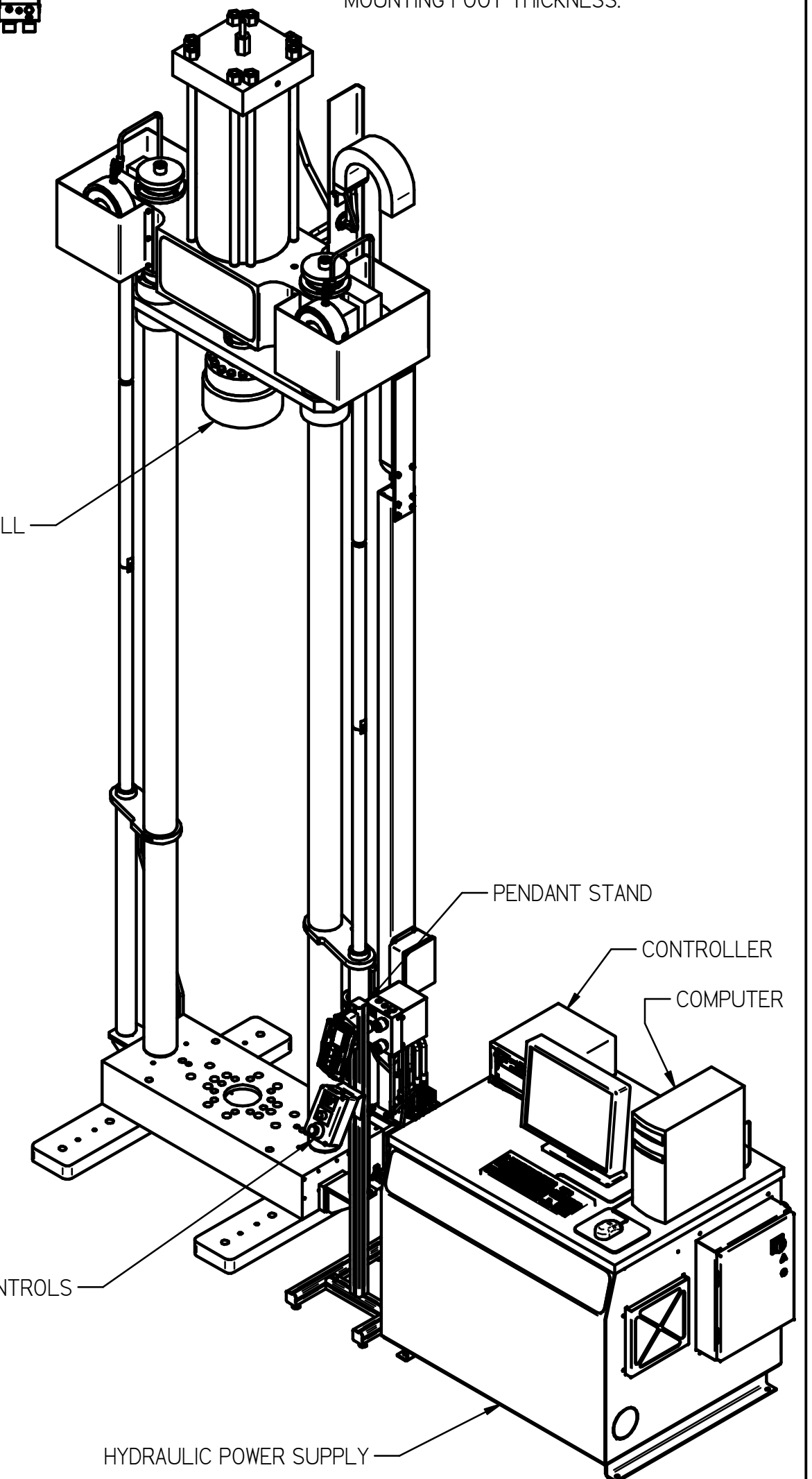


SECTION B-B
 LOAD CELL



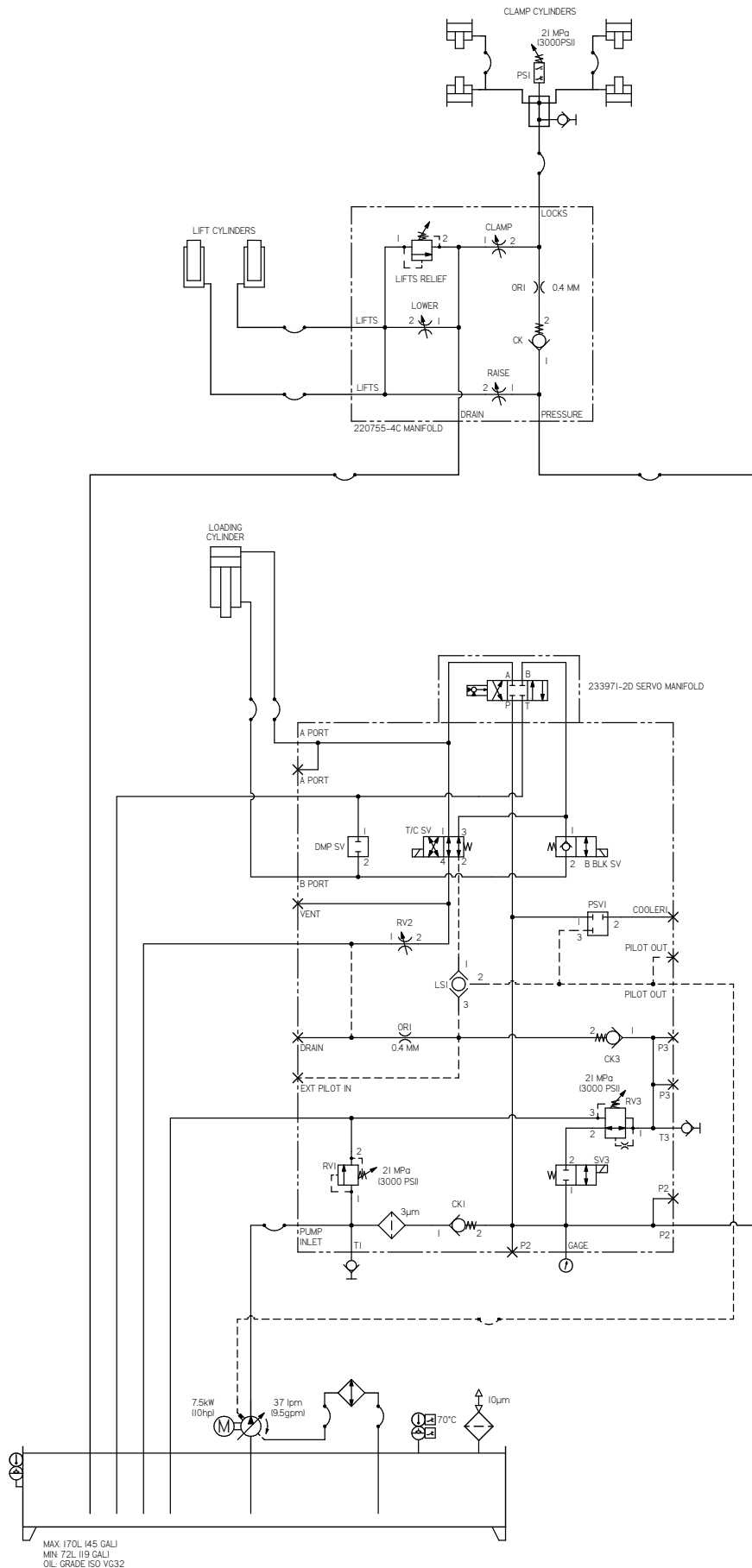
SECTION A-A
 BASE

1.25 DIAMETER THRU 14 PLACES FOR EXTERNAL GRIP MOUNTING



| | | | | | | | |
|--|-------------|---------------------|-----------------------------|------------------------------|---------------|--------|-----|
| MATERIAL: | | | | | | | |
| * DENOTES CRITICAL FEATURES AND DIMENSIONS TO BE INSPECTED | THIRD ANGLE | B | 87689 | ELECT/HYD CONNECTION CALLOUT | 6/24/14 | SAS | |
| | | A | | RELEASED | 5/27/14 | JRH | |
| SURFACE FINISH Ra 125 µm UNLESS OTHERWISE NOTED | | REV | ECO | REVISIONS | DATE | BY | |
| HARDNESS: | | GENERAL ASSEMBLY | | DRAWN: JRH | DATE: 3/31/14 | | |
| FINISH: | | 1000KPX-J1/J3 | | CHECKED: | DATE: | | |
| INCHES - TOLERANCES NOT OTHERWISE NOTED | | MADE FOR | | S.O. | SHEET | 2 OF 2 | |
| ±0.03 | ±0.015 | ±0.005 | INSTRON INDUSTRIAL PRODUCTS | | R234433-3 | | REV |
| .X | .XX | .XXX | GROVE CITY, PENNSYLVANIA | | | | B |
| ANGULAR +/- 0.5 DEGREE | | FRACTIONAL +/- 1/64 | | | | | |

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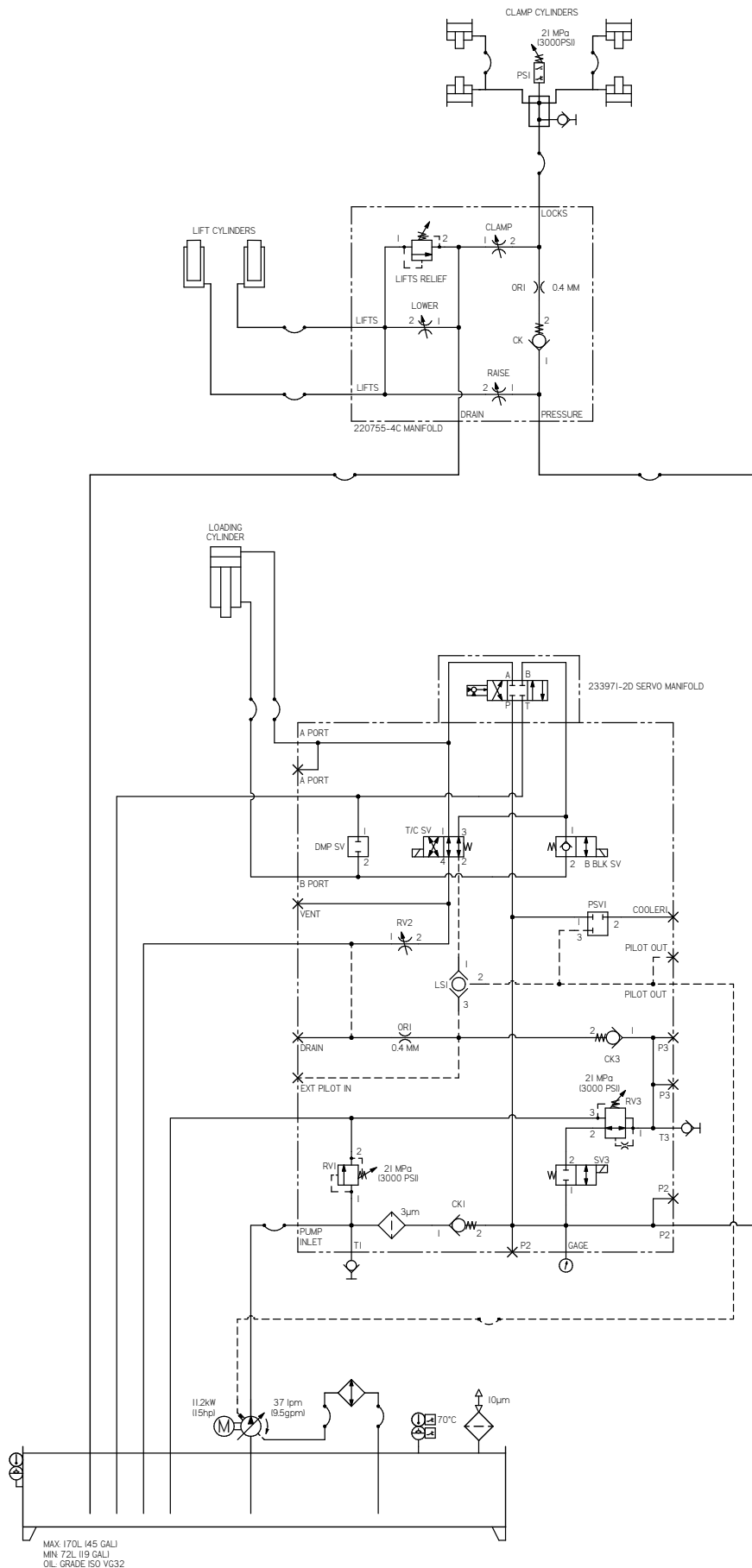


MAX 170L (45 GAL)
 MIN 72L (19 GAL)
 OIL GRADE ISO VG32

SCHEMATIC APPLICABLE TO THE FOLLOWING MODELS:
 1000KPX-J3
 1500KPX-J3

Hydraulic system and components are shown in this schematic for informational purposes only. The actual system configuration may vary from the schematic shown.

| GENERAL INFORMATION | | HYDRAULIC SCHEMATIC | |
|---------------------|------------|---------------------|------------|
| MODEL | 1000KPX-J3 | MODEL | 1500KPX-J3 |
| MANUFACTURER | INSTRON | MANUFACTURER | INSTRON |
| DATE | 01/15/2010 | DATE | 01/15/2010 |
| REVISION | 1.0 | REVISION | 1.0 |
| DESIGNED BY | ... | DESIGNED BY | ... |
| CHECKED BY | ... | CHECKED BY | ... |
| APPROVED BY | ... | APPROVED BY | ... |
| PART NUMBER | R234500-4A | PART NUMBER | R234500-4A |
| QUANTITY | 1 | QUANTITY | 1 |
| UNIT | ... | UNIT | ... |
| DESCRIPTION | ... | DESCRIPTION | ... |
| REVISIONS | ... | REVISIONS | ... |
| DATE | ... | DATE | ... |
| BY | ... | BY | ... |
| CHKD | ... | CHKD | ... |
| APPD | ... | APPD | ... |

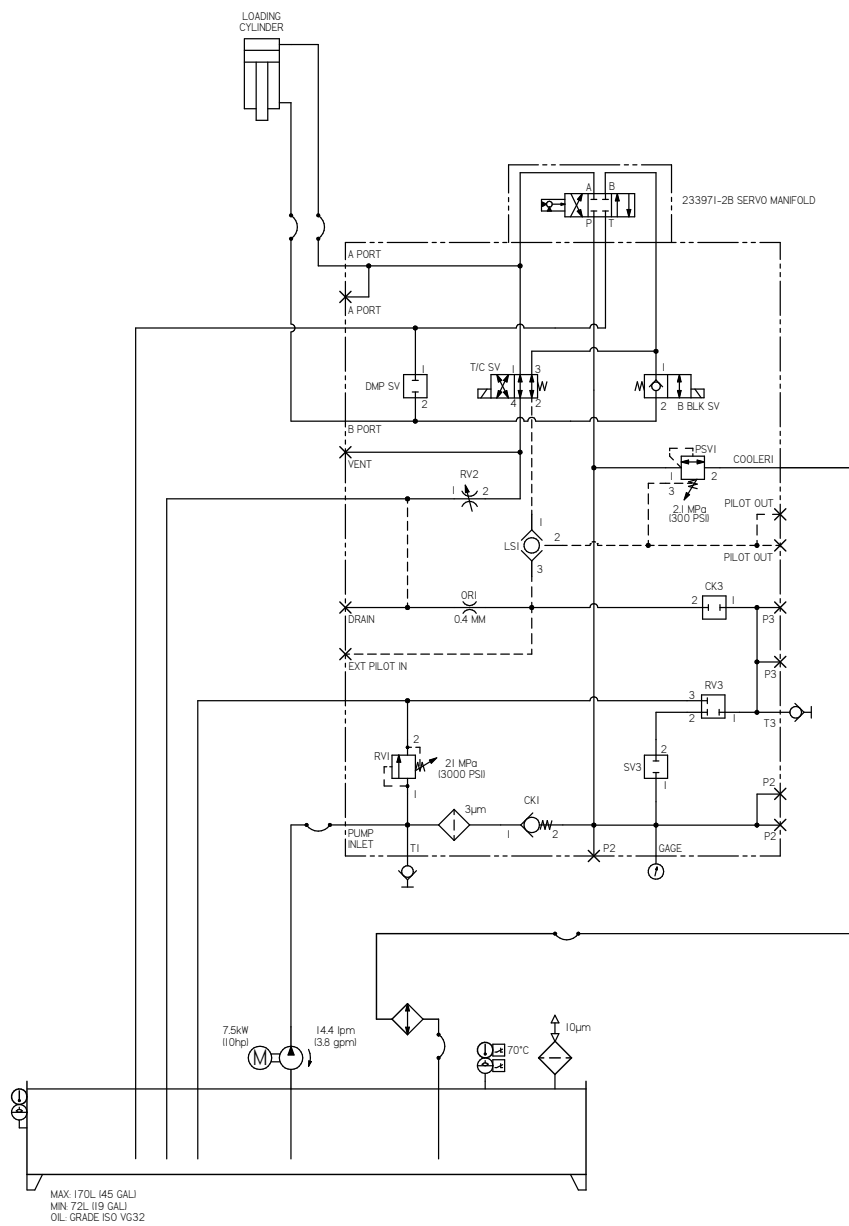


Hydraulic schematic of a hydraulic system. This schematic is for informational purposes only. It is not intended to be used as a basis for design or construction. It is not intended to be used as a basis for design or construction. It is not intended to be used as a basis for design or construction.

| UNIT | | UNIT | |
|------|-------|------|-------|
| 1 | 1.5 | 1 | 1.5 |
| 2 | 2.0 | 2 | 2.0 |
| 3 | 3.0 | 3 | 3.0 |
| 4 | 4.0 | 4 | 4.0 |
| 5 | 5.0 | 5 | 5.0 |
| 6 | 6.0 | 6 | 6.0 |
| 7 | 7.0 | 7 | 7.0 |
| 8 | 8.0 | 8 | 8.0 |
| 9 | 9.0 | 9 | 9.0 |
| 10 | 10.0 | 10 | 10.0 |
| 11 | 11.0 | 11 | 11.0 |
| 12 | 12.0 | 12 | 12.0 |
| 13 | 13.0 | 13 | 13.0 |
| 14 | 14.0 | 14 | 14.0 |
| 15 | 15.0 | 15 | 15.0 |
| 16 | 16.0 | 16 | 16.0 |
| 17 | 17.0 | 17 | 17.0 |
| 18 | 18.0 | 18 | 18.0 |
| 19 | 19.0 | 19 | 19.0 |
| 20 | 20.0 | 20 | 20.0 |
| 21 | 21.0 | 21 | 21.0 |
| 22 | 22.0 | 22 | 22.0 |
| 23 | 23.0 | 23 | 23.0 |
| 24 | 24.0 | 24 | 24.0 |
| 25 | 25.0 | 25 | 25.0 |
| 26 | 26.0 | 26 | 26.0 |
| 27 | 27.0 | 27 | 27.0 |
| 28 | 28.0 | 28 | 28.0 |
| 29 | 29.0 | 29 | 29.0 |
| 30 | 30.0 | 30 | 30.0 |
| 31 | 31.0 | 31 | 31.0 |
| 32 | 32.0 | 32 | 32.0 |
| 33 | 33.0 | 33 | 33.0 |
| 34 | 34.0 | 34 | 34.0 |
| 35 | 35.0 | 35 | 35.0 |
| 36 | 36.0 | 36 | 36.0 |
| 37 | 37.0 | 37 | 37.0 |
| 38 | 38.0 | 38 | 38.0 |
| 39 | 39.0 | 39 | 39.0 |
| 40 | 40.0 | 40 | 40.0 |
| 41 | 41.0 | 41 | 41.0 |
| 42 | 42.0 | 42 | 42.0 |
| 43 | 43.0 | 43 | 43.0 |
| 44 | 44.0 | 44 | 44.0 |
| 45 | 45.0 | 45 | 45.0 |
| 46 | 46.0 | 46 | 46.0 |
| 47 | 47.0 | 47 | 47.0 |
| 48 | 48.0 | 48 | 48.0 |
| 49 | 49.0 | 49 | 49.0 |
| 50 | 50.0 | 50 | 50.0 |
| 51 | 51.0 | 51 | 51.0 |
| 52 | 52.0 | 52 | 52.0 |
| 53 | 53.0 | 53 | 53.0 |
| 54 | 54.0 | 54 | 54.0 |
| 55 | 55.0 | 55 | 55.0 |
| 56 | 56.0 | 56 | 56.0 |
| 57 | 57.0 | 57 | 57.0 |
| 58 | 58.0 | 58 | 58.0 |
| 59 | 59.0 | 59 | 59.0 |
| 60 | 60.0 | 60 | 60.0 |
| 61 | 61.0 | 61 | 61.0 |
| 62 | 62.0 | 62 | 62.0 |
| 63 | 63.0 | 63 | 63.0 |
| 64 | 64.0 | 64 | 64.0 |
| 65 | 65.0 | 65 | 65.0 |
| 66 | 66.0 | 66 | 66.0 |
| 67 | 67.0 | 67 | 67.0 |
| 68 | 68.0 | 68 | 68.0 |
| 69 | 69.0 | 69 | 69.0 |
| 70 | 70.0 | 70 | 70.0 |
| 71 | 71.0 | 71 | 71.0 |
| 72 | 72.0 | 72 | 72.0 |
| 73 | 73.0 | 73 | 73.0 |
| 74 | 74.0 | 74 | 74.0 |
| 75 | 75.0 | 75 | 75.0 |
| 76 | 76.0 | 76 | 76.0 |
| 77 | 77.0 | 77 | 77.0 |
| 78 | 78.0 | 78 | 78.0 |
| 79 | 79.0 | 79 | 79.0 |
| 80 | 80.0 | 80 | 80.0 |
| 81 | 81.0 | 81 | 81.0 |
| 82 | 82.0 | 82 | 82.0 |
| 83 | 83.0 | 83 | 83.0 |
| 84 | 84.0 | 84 | 84.0 |
| 85 | 85.0 | 85 | 85.0 |
| 86 | 86.0 | 86 | 86.0 |
| 87 | 87.0 | 87 | 87.0 |
| 88 | 88.0 | 88 | 88.0 |
| 89 | 89.0 | 89 | 89.0 |
| 90 | 90.0 | 90 | 90.0 |
| 91 | 91.0 | 91 | 91.0 |
| 92 | 92.0 | 92 | 92.0 |
| 93 | 93.0 | 93 | 93.0 |
| 94 | 94.0 | 94 | 94.0 |
| 95 | 95.0 | 95 | 95.0 |
| 96 | 96.0 | 96 | 96.0 |
| 97 | 97.0 | 97 | 97.0 |
| 98 | 98.0 | 98 | 98.0 |
| 99 | 99.0 | 99 | 99.0 |
| 100 | 100.0 | 100 | 100.0 |

SCHEMATIC APPLICABLE TO THE FOLLOWING MODELS:
 2000KPX-J3

R234500-4B
 B



MAX. 170L (45 GAL)
 MIN. 72L (19 GAL)
 OIL GRADE ISO VG32

Hydraulic schematic of the system. The schematic shows the pump, servo manifold, loading cylinder, and various valves and filters. The pump is a 7.5kW (10hp) unit with a flow rate of 14.4 lpm (3.8 gpm). The system includes a 21 MPa (3000 PSI) relief valve (RV1), a 3µm filter (CK1), a 70°C temperature sensor, a 10µm filter, a 21 MPa (3000 PSI) pressure sensor (RV2), a 0.4µm filter (ORI), a 21 MPa (3000 PSI) pressure sensor (RV3), a 21 MPa (3000 PSI) pressure sensor (PSV1), a 21 MPa (3000 PSI) pressure sensor (CK3), a 21 MPa (3000 PSI) pressure sensor (SV3), a 21 MPa (3000 PSI) pressure sensor (DMP SV), a 21 MPa (3000 PSI) pressure sensor (TIC SV), a 21 MPa (3000 PSI) pressure sensor (B BLK SV), a 21 MPa (3000 PSI) pressure sensor (COOLER1), a 21 MPa (3000 PSI) pressure sensor (LSI), a 21 MPa (3000 PSI) pressure sensor (VENT), a 21 MPa (3000 PSI) pressure sensor (DRAIN), a 21 MPa (3000 PSI) pressure sensor (EXT PILOT IN), a 21 MPa (3000 PSI) pressure sensor (PILOT OUT), a 21 MPa (3000 PSI) pressure sensor (P3), a 21 MPa (3000 PSI) pressure sensor (T3), a 21 MPa (3000 PSI) pressure sensor (P2), and a 21 MPa (3000 PSI) pressure sensor (GAGE). The loading cylinder is connected to the A and B ports of the servo manifold. The pump inlet is connected to the pump inlet of the servo manifold. The pump outlet is connected to the pump outlet of the servo manifold. The pump outlet is also connected to a 70°C temperature sensor and a 10µm filter. The pump outlet is also connected to a 21 MPa (3000 PSI) pressure sensor (RV1) and a 3µm filter (CK1). The pump outlet is also connected to a 21 MPa (3000 PSI) pressure sensor (RV2) and a 0.4µm filter (ORI). The pump outlet is also connected to a 21 MPa (3000 PSI) pressure sensor (RV3) and a 21 MPa (3000 PSI) pressure sensor (PSV1). The pump outlet is also connected to a 21 MPa (3000 PSI) pressure sensor (CK3) and a 21 MPa (3000 PSI) pressure sensor (SV3). The pump outlet is also connected to a 21 MPa (3000 PSI) pressure sensor (DMP SV) and a 21 MPa (3000 PSI) pressure sensor (TIC SV). The pump outlet is also connected to a 21 MPa (3000 PSI) pressure sensor (B BLK SV) and a 21 MPa (3000 PSI) pressure sensor (COOLER1). The pump outlet is also connected to a 21 MPa (3000 PSI) pressure sensor (LSI) and a 21 MPa (3000 PSI) pressure sensor (VENT). The pump outlet is also connected to a 21 MPa (3000 PSI) pressure sensor (DRAIN) and a 21 MPa (3000 PSI) pressure sensor (EXT PILOT IN). The pump outlet is also connected to a 21 MPa (3000 PSI) pressure sensor (PILOT OUT) and a 21 MPa (3000 PSI) pressure sensor (P3). The pump outlet is also connected to a 21 MPa (3000 PSI) pressure sensor (T3) and a 21 MPa (3000 PSI) pressure sensor (P2). The pump outlet is also connected to a 21 MPa (3000 PSI) pressure sensor (GAGE).

| GENERAL INFORMATION | | HYDRAULIC SCHEMATIC | |
|---------------------|------------|---------------------|------------|
| MODEL | 600KX | MODEL | 600KX |
| REVISION | 1.0 | REVISION | 1.0 |
| DATE | 2005-03-15 | DATE | 2005-03-15 |
| DESIGNER | ... | DESIGNER | ... |
| CHECKER | ... | CHECKER | ... |
| APPROVER | ... | APPROVER | ... |
| MANUFACTURER | ... | MANUFACTURER | ... |
| PART NUMBER | R234500-4D | PART NUMBER | R234500-4D |
| QUANTITY | 1 | QUANTITY | 1 |
| UNIT | B | UNIT | B |

SCHEMATIC APPLICABLE TO THE FOLLOWING MODELS:
 600KX-J1
 600KX-J4

Appendix A

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MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product Name: Altra AW 32 Hydraulic Oil
Product Number: 11005
Synonyms: Antiwear Hydraulic Fluid, Petroleum Based Lubricant
Chemical Name: Hydrotreated heavy paraffinic distillate
Chemical Family: Petroleum Distillate
CAS Number: Blend

Company Identification

Allegheny Petroleum Products Co.
999 Airbrake Avenue
Wilmerding, PA 15148 USA
1-412-829-1990 (For product information)
1-800-424-9300 (For emergencies)
1-800-424-9300 or 1-703-527-3887 (CHEMTREC)

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT LISTING:

| <u>Chemical Name</u> | <u>Amount</u> | <u>CAS Number</u> |
|---|---------------|-------------------|
| HYDROTREATED PARAFFINIC DISTILLATE, DEWAXED | > 98.0 % | 64742-65-0 |
| ADDITIVES | < 2.0 % | Blend |

(See Section 8 for exposure guidelines)

(See Section 15 for regulatory information)

HAZARDS DISCLOSURE

This product contains no known hazardous materials as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

As defined under Sara 311 and 312, this product contains no known hazardous materials.

3. HAZARDS IDENTIFICATION

***** EMERGENCY OVERVIEW *****
*
* Not expected to cause a severe emergency hazard. *
*

HMIS Rating - Health: 1
Flammability: 1
Reactivity: 0

NFPA Rating - Health: 1
Flammability: 1
Reactivity: 0
Special Hazard: N/A

POTENTIAL HEALTH EFFECTS

EYE:

Contact may cause eye irritation and redness.

SKIN:

Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

INHALATION:

Inhalation of vapors or mist may be mildly irritating to the nose, throat, and respiratory tract.

INGESTION:

Small amounts swallowed during normal handling operations are not likely to cause injury.

CHRONIC EFFECTS:

No adverse effects have been documented in humans as a result of chronic exposure.

CARCINOGENICITY INFORMATION:

Based on OSHA 1910.1200 and IARC study requirements, this product does not require labeling.

4. FIRST AID MEASURES

EYE CONTACT FIRST AID:

Flush eye with water for 15 minutes.

Get medical attention if irritation develops or persists.

SKIN CONTACT FIRST AID:

Wash skin with soap and water.

(section 4 continued)

Thoroughly wash (or discard) clothing and shoes before reuse.

INHALATION FIRST AID:

Remove to fresh air.

If not breathing, give artificial respiration.

INGESTION FIRST AID:

If vomiting should occur spontaneously, keep airway clear.

NOTES TO PHYSICIAN:

Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

COC Flash Point: 248.9 C (480.0 F)

Autoignition Temperature: > 315.6 C (> 600.1 F)

FLAMMABLE LIMITS IN AIR

LEL: N/A

UEL: N/A

EXTINGUISHING MEDIA:

Carbon dioxide, foam, or dry powder. Water may be used to cool below flash point.

FIRE FIGHTING INSTRUCTIONS:

As in any fire, wear self-contained breathing apparatus pressure-demand MSHA/NIOSH (approved or equivalent) and full protective gear.

COMBUSTION PRODUCTS:

Fumes, smoke and carbon monoxide.

6. ACCIDENTAL RELEASE MEASURES

SAFEGUARDS (PERSONNEL):

Wear appropriate personal protective equipment.

INITIAL CONTAINMENT:

Absorb spills with inert material.

LARGE SPILLS PROCEDURE:

Contain spilled material.

Large spillage should be dammed-off and pumped into containers.

(section 6 continued)

Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

SMALL SPILLS PROCEDURE:

Clean up area by absorbent material.

Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

7. HANDLING AND STORAGE

HANDLING (PERSONNEL):

DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

Wash hands thoroughly after handling.

HANDLING (PHYSICAL ASPECTS):

Store in a cool dry area.

Keep container closed to avoid contamination.

STORAGE PRECAUTIONS:

Keep container closed when not in use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:

Not required under normal conditions of use. However, if unusual operating conditions exist, then provide sufficient mechanical ventilation to maintain exposure below PEL/TLV (s).

EYE / FACE PROTECTION REQUIREMENTS:

Where contact with this material is likely, eye protection is recommended.

SKIN PROTECTION REQUIREMENTS:

When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material.

RESPIRATORY PROTECTION REQUIREMENTS:

When there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.

EXPOSURE GUIDELINES:

No Information Available.

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM: Liquid
COLOR: Amber
ODOR: Characteristic
BOILING POINT: >425 F
VAPOR PRESSURE: Nil mm Hg
VAPOR DENSITY: >1 (Air = 1)
SOLUBILITY IN WATER: Nil
SPECIFIC GRAVITY: 0.861 at 60 deg F (Water = 1)
BULK DENSITY: 7.17 Pounds per Gallon at 60 Deg F
MELTING/FREEZING POINT ...: N/A F
% VOLATILES: Nil %
VISCOSITY: 32 cSt at 40 Deg C

10. STABILITY AND REACTIVITY

STABILITY:

Stable.

POLYMERIZATION:

Hazardous polymerization will not occur.

INCOMPATIBILITY WITH OTHER MATERIALS:

Avoid contact with strong oxidizing agents.

DECOMPOSITION:

In the case of a fire, oxides of carbon, hydrocarbons, fumes, and smoke may be produced.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS:

Minimal irritation on contact.

SKIN EFFECTS:

Practically non-toxic if absorbed. May cause mild irritation with prolonged and repeated exposure.

ACUTE ORAL EFFECTS:

Tests on similar materials indicate low order of acute oral toxicity.

ACUTE INHALATION EFFECTS:

Low acute toxicity expected on inhalation.

MISCELLANEOUS:

Please contact supplier for additional toxicological information.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS:

Ecotoxicological Information: No specific aquatic data available for this product.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:

Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

Do not flush to surface water or sanitary sewer system.

CONTAINER DISPOSAL:

Empty drums should be completely drained, properly bunged and promptly shipped to the supplier or a drum reconditioner.

All other containers should be disposed of in an environmentally safe manner.

14. TRANSPORTATION INFORMATION

PRODUCT LABEL: Altra AW 32 Hydraulic Oil
D.O.T. SHIPPING NAME ...: Not regulated by DOT

15. REGULATORY INFORMATION

MISCELLANEOUS INFORMATION:

This material or all of its components are listed on the Inventory of Existing Chemical Substances under the Toxic Substance Control Act (TSCA).

16. OTHER INFORMATION

REASON FOR ISSUE ...: Revised
APPROVAL DATE: March 3, 2009
SUPERCEDES DATE: March 3, 2009
RTN NUMBER: 00011005 (Official Copy)

ADDITIONAL INFORMATION:

The data in this Material Safety Data Sheet relates only to the specific material designated herein.

This information is furnished without warranty, expressed or implied,
except that it is accurate to the best knowledge of Allegheny Petroleum
Products Co.. The data on this sheet are related only to the specific
material designated herein. Allegheny Petroleum Products Co. assumes no
legal responsibility for use or reliance upon these data.

END OF MSDS

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End of Document

The background of the page is a light gray color with a subtle, abstract design. It features several curved, overlapping lines in shades of gray, creating a sense of motion and depth. A prominent feature is a large, curved band of small, light gray dots that follows the curve of the lines, resembling a halftone or mesh pattern. The overall aesthetic is clean, modern, and technical.

Product Support: www.instron.com