



Service Manual
6550/6550KGEU
Portable Digital
Wheelchair Scale



0065-M262-01 Rev D
12/07

CARDINAL SCALE MFG. CO.
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COMPATIBILITY OF MODULES – MODEL 6550 series

Ref.: WELMEC 2 (Issue 2), July 1996, paragraph 11

**Non-Automatic Weighing Instrument – Single Interval
Certificate of EU Type-Approval No.:**

UK2655

INDICATOR (Module 1)

| | | | |
|---|---------------------------------|-----------------------|--------------------------|
| Type: | | | 758CSV |
| Accuracy class according to EN 45501 and OIML R76 | Class IND (I, II, III, or IIII) | | III |
| Maximum number of verification scale intervals: | n IND | | 5000 |
| Fraction of mpe: | p1 | | 0.5 |
| Excitation voltage: | U exc | [VDC] | 5 |
| Minimum input-voltage per verification scale interval: | ΔU min | [μV] | 1.2 |
| Minimum load cell impedance: | R Lim | [Ω] | 87 |
| Load cell interface: | | | 4-wire (no remote sense) |
| Additive tare, if available: | T+ | [% of Max] | 0 |
| Initial zero setting range: | IZSR | [% of Max] | -2 / 2 |
| Temperature range: | T min / T max | [°C] | -10 / +40 |
| Test report or Test Certificate as appropriate: GB-1136 | Issued by NWML | Date: 22 October 2002 | |

LOAD RECEPTOR (Module 2)

| | | | |
|--|---------------------------------------|------------|-----------|
| Type: | | | 6550KGEU |
| Size: | | [mm] | 711 x 813 |
| Fraction of mpe: | p2 | | 0.5 |
| Number of load cells: | N | | 4 |
| Reduction ratio of the load transmitting device: | R=FM/FL | | 1 |
| Dead load of load receptor: | DL | [% of Max] | 10 |
| Non uniform distribution of the load | NUD | [% of Max] | 20 |
| Correction factor: | Q = 1 + (DL + T+ + IZSR+ + NUD) / 100 | | 1.32 |

LOAD CELL (Module 3)

| | | | |
|---|-------------------------|--------------|-----------|
| Type: | | LFB-250M | |
| Accuracy class according to OIML R60: | Class LC (A, B,C, or D) | | C |
| Maximum number of load cell intervals: | n LC | | 3000 |
| Fraction of mpe: | p3 | | 0.7 |
| Rated Output (sensitivity): | C | [mV/V] | 2 |
| Input resistance of single load cell: | R LC | [Ω] | 350 |
| Minimum load cell verification interval: | V MIN | [% of E max] | 0.02 |
| Rated capacity: | E max | [kg] | 125 |
| Minimum dead load, relative: | (E min / E max) * 100 | [%] | 0 |
| Temperature range: | T min / T max | [°C] | -10 / +40 |
| Test report or Test Certificate as appropriate: | R60/1991-DK-00.02 | | |

COMPLETE WEIGHING INSTRUMENT

| | | | |
|--|---|------------------------|-----------|
| Manufacturer: Cardinal | Type: | | 6550KGEU |
| Accuracy class according to EN 45501 and OIML R76: | Class WI (I, II, III or IIII) | | III |
| $p1^2 + p2^2 + p3^2 = (R76 \text{ clause } 3.5.4.1)$ | pi | | 1.0 |
| Maximum load: | Max | [kg] | 300 |
| Number of verification scale intervals: | n | | 3000 |
| Verification scale interval: | e | [kg] | 0.1 |
| Utilisation ratio of the load cell: | $\alpha = (Max / Emax) * (R / N)$ | | 0.6 |
| Input voltage (from the load cells): | $\Delta U = C * U_{EX} * \alpha * 1000 / n$ | [μV / e] | 2 |
| Max resistance of each wire in the cable to a junction box for load cells: | | | 5 |
| Specific cable-length to a junction box for load cells, if any: | | [m / mm ²] | 300 |
| Sectional area of each wire in the cable: | A | [mm ²] | 0.5 |
| Max length of the cable: | L | [m] | 3 |
| Temperature range: | T min / T max | [°C] | -10 / +40 |
| Peripheral Equipment subject to legal control: | | | |

REQUIREMENTS TO BE SATISFIED

Passed, provided no result below is < 0

SATISFIED

| Class WI | ≤ | Class IND & Class LC | (WELMEC 2:1) | Class WI | PASSED |
|---|---|--------------------------------------|----------------|---|--------|
| P _i | ≤ | 1 | (R76:3.4.5.1) | 1 - P _i = | 0.0 |
| n | ≤ | n _{MAX} for the class | (R76:3.2) | n _{MAX} for the class - n = | 7000 |
| n | ≤ | n _{IND} | (WELMEC 2: 4) | n _{ind} - n = | 2000 |
| n | ≤ | n _{LC} | (R76: 4.12.2) | n _{LC} - n = | 0 |
| E _{MIN} | ≤ | DL * R / N | (WELMEC 2: 6d) | (DL * R / N) - E _{MIN} = | 7.5 |
| V _{MIN} * √N / R | ≤ | e | (R76: 4.12.3) | e - (V _{MIN} * √N / R) = | 0.05 |
| (E _{max} /n _{LC})*(√N/R) | ≤ | e | (WELMEC 2:7) | e - ((E _{MAX} /n _{LC}) * (√N / R)) = | 0.017 |
| ΔU _{MIN} | ≤ | | (WELMEC 2:8) | ΔU - ΔU _{MIN} = | 0.8 |
| R _{LIM} | ≤ | R _{LC} / N | (WELMEC 2:9) | (R _{LC} / N) - R _{LIM} = | 0 |
| T _{RANGE} | ≤ | T _{MAX} - T _{MIN} | (R76: 3.9.) | (T _{MAX} - T _{MIN}) - T _{RANGE} = | 0 |
| Q * Max * R / N | ≤ | E _{MAX} | (R76: 4.12.1) | E _{MAX} - (Q * Max * R / N) = | 26 |
| L / A | ≤ | (L / A) _{MAX} ^{WI} | (WELMEC 2:10) | (L / A) _{MAX} ^{WI} - (L / A) = | 0 |

EUROPEAN DECLARATION OF CONFORMITY

Manufacturer: Cardinal Scale Manufacturing Company
PO Box 151
203 East Daugherty
Webb City, Missouri 64870 USA

Telephone No. 417-673-4631
Fax No. 417-673-5001

Product: Non-automatic Weight Indicating Instrument
Model Numbers 758CSV
Serial Number EXXXYY-ZZZ
where XXX = day of year
YY = last two digits of year
ZZZ = sequential number

The undersigned hereby declares, on behalf of Cardinal Scale Manufacturing Company of Webb City, Missouri, that the above-referenced product, to which this declaration relates, is in conformity with the provisions of:

Council Directive 2006/95/EC Low Voltage Directive
Test Report Number 0206-1 Cardinal Scale Mfg. Co.

European Standard EN55022: Class B for radiated emissions
European Standard EN61000-4-3: Class A for Radiated EMC
European Standard EN61000-4-6: Class A for Conducted Disturbances
Test Report Number 020424-537 Criterion Technology

Council Directive 90/384/EEC (20 June, 1990) on the Harmonization
of the Laws of Member States relating to non-automatic Weighing
Systems as amended by:
Council Directive 93/68/EEC (22 July, 1993)
Certificate of EU Type Approval Number: UK 2655

The Technical Construction File required by this Directive is maintained at the corporate headquarters of Cardinal Scale Manufacturing Company, 203 East Daugherty, Webb City, Missouri.



Ginger Harper
Manager, Quality Assurance

Cardinal / DETECTO
TEST PROCEDURE FOR 6500 / 6550 SERIES

No. 0065-A412-PT

Rev. K

Date 11/16/07

App By D. WINKFIELD

Page 1 of 4

PRODUCTION TEST PROCEDURE
FOR 6500 / 6550, 6500KGEU / 6550KGEU
FOLDING WHEELCHAIR SCALE

- A. EQUIPMENT REQUIRED
- B. SETUP
- C. CALIBRATION
- D. FINAL TEST



Cardinal / DETECTO
TEST PROCEDURE FOR 6500 / 6550 SERIES

| | | | | |
|------------------|--------|---------------|---------------------|-------------|
| No. 0065-A412-PT | Rev. K | Date 11/16/07 | App By D. WINKFIELD | Page 2 of 4 |
|------------------|--------|---------------|---------------------|-------------|

A. Equipment Required

- Scale under test
- Standard Hand tools
- Test Weights: Appropriate certified weights to accomplish the linearity tests

B. Setup

1. Assemble scale. Remove the indicator cover to expose the Cal. switch/jumper
2. Plug unit into power.

C. Calibration

1. Place the Calibration switch/jumper in the Cal/Setup position
2. Turn power ON
3. Follow prompts (see appropriate calibration table)

| 758C CALIBRATION TABLE | |
|-------------------------------|---|
| MODEL | 6500 / 6550 |
| int= | 2 |
| Unit= | 3 |
| dPP= | 1 |
| CAP= | 800 |
| CAL= | 1 |
| LOAD= | APPLY FULL (SCALE) |
| UnLOd= | REMOVE TEST WEIGHTS |
| trA= | 1 |
| trL= | 0 |
| UnS= | 2 |
| FLt= | 1 |
| Sr= | 2 |
| HOLd= | 1 |
| nin= | MINUTES |
| hh= | HOURS (24 hour format) |
| dd= | DAY |
| nn= | MONTH |
| yy= | YEAR (Last 2 digits of current year) |
| id= | 0 |
| bni= | 1 |
| P220= | 0 |
| CrLF= | 1 |
| EOP= | 0 |
| bAUd | 3 |
| btn= | 0 |
| FEEt= | 1 |
| niCAD | 0 |
| PUO= | 0 |
| ASH= | 9 |
| SLP= | 4 |
| done | |

* Reference "Compatibility of Modules" document 0065-A444-GS

Cardinal / DETECTO
TEST PROCEDURE FOR 6500 / 6550 SERIES

| | | | | |
|------------------|--------|---------------|---------------------|-------------|
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|------------------|--------|---------------|---------------------|-------------|

| 758CSV CALIBRATION TABLE | |
|---------------------------------|---|
| MODEL | 6500KGEU / 6550KGEU |
| int= | 1 |
| DPP= | 1 |
| CAP= | 300 * |
| CAL= | 1 |
| LOAD= | APPLY FULL (SCALE) |
| UnLOd= | REMOVE TEST WEIGHTS |
| SEtGC= | 0 |
| trA= | 1 |
| trL= | 1 |
| UnS= | 2 |
| FLt= | 1 |
| Sr= | 2 |
| HOLd= | 0 |
| tyPE= | 1 |
| nin= | MINUTES |
| hh= | HOURS (24 hour format) |
| dd= | DAY |
| nn= | MONTH |
| yy= | YEAR (Last 2 digits of current year) |
| bAUd | 3 |
| btn= | 0 |
| PUO= | 0 |
| ASH= | 9 |
| SLP= | 4 |
| HirES= | 0 |
| done | |

D. Final Test

1. Perform Shift test, using Test Weights equal to 1/2 of capacity of scale.
2. Perform Linearity test. Check both ascending and descending. See attached table.
3. Install indicator cover.
4. Check the **6550KGEU capacity label**. Must be **“Max 300kg e=0.1kg Min 2kg**
5. **The serial number of the scales must match the indicator’s serial number.**
6. Fill out “PRIDE” Form.
7. Send Unit to Packing

Cardinal / DETECTO
TEST PROCEDURE FOR 6500 / 6550 SERIES

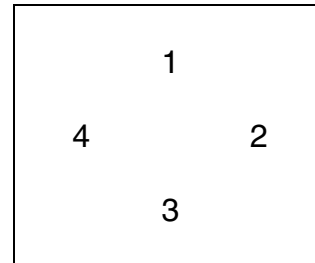
| | | | | |
|------------------|--------|---------------|---------------------|-------------|
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|------------------|--------|---------------|---------------------|-------------|

6500 / 6550 Linearity Check Table

6500 / 6550

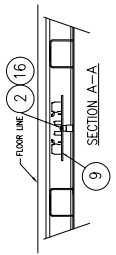
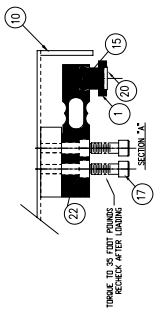
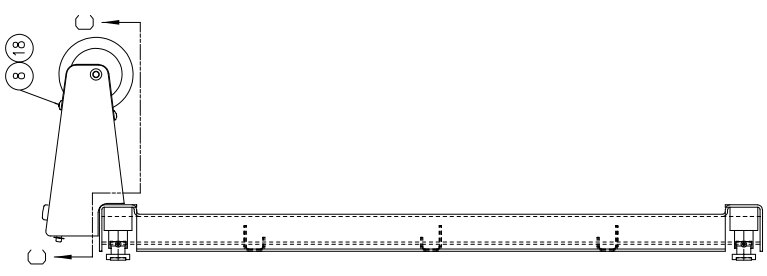
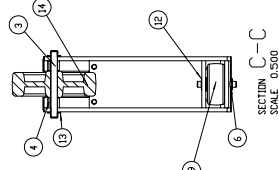
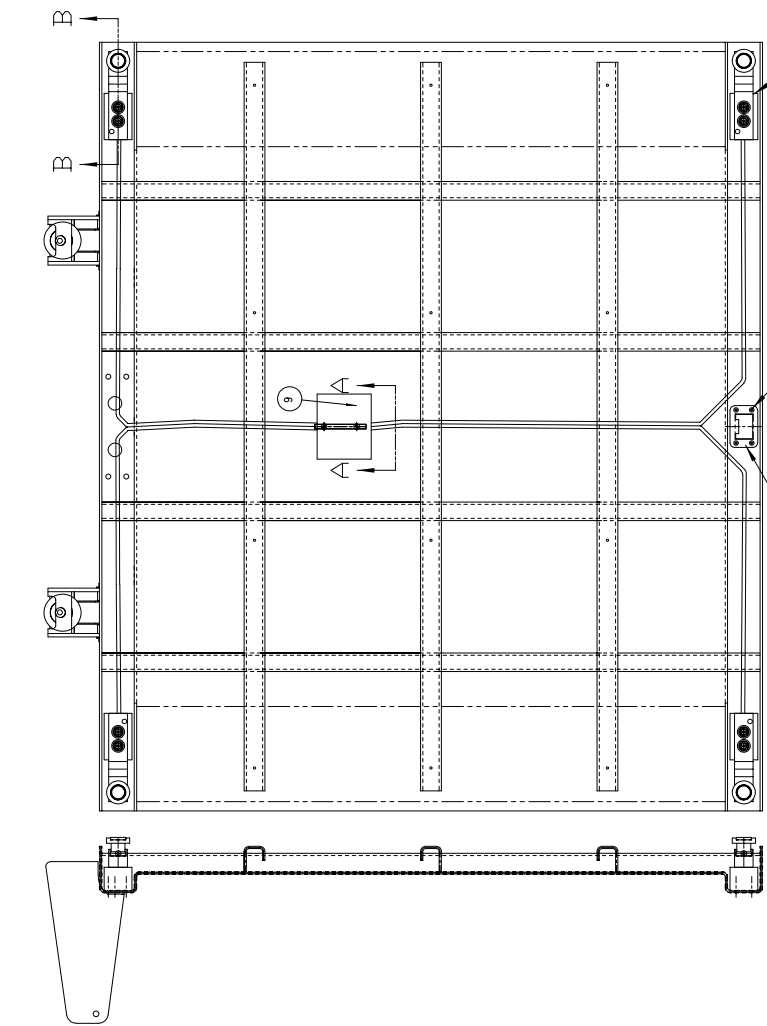
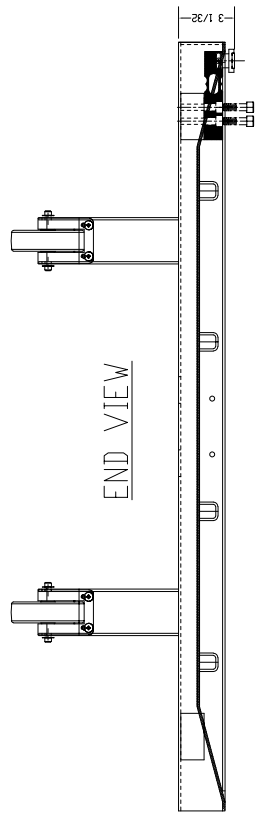
| Applied Weight | Tolerance | | |
|----------------|-----------|----|----------|
| 0 | 0 | | |
| 200 lb | 199.8 lb | To | 200.2 lb |
| 400 lb | 399.6 lb | To | 400.4 lb |
| 600 lb | 599.4 lb | To | 600.6 lb |
| 800 lb | 799.2 lb | To | 800.8 lb |

Weight
Positions
For Shift
Test



6500KGEU / 6550KGEU

| Applied Weight | Tolerance | | |
|----------------|-----------|----|----------|
| 100 kg | 99.9 kg | To | 100.1 kg |
| 200 kg | 199.8 kg | To | 200.2 kg |
| 300 kg | 299.7 kg | To | 300.3 kg |



BOTTOM VIEW

| QTY. | QTY. | ITEM | PART NAME, NUMBER | DESCRIPTION | MATERIAL OR SOURCE | WT. EACH |
|------|------|---------------|---------------------------------|---------------------|--------------------|----------|
| | 40.8 | WT. | | PARTS/MATERIAL LIST | | |
| 4 | 22 | LFB-250M | LFB-250M LADWELL | | | 500 |
| 4 | 21 | 6680-080 | RIBET POP, BH SS 1/8 DIA | | | .002 |
| 4 | 20 | 6540-1122 | RUBBER FOOT .81 DIA ADHESIVE | | | .001 |
| 2 | 19 | 6540-1105 | WHEEL - 2.0 X 15/16 X .25 ANGLE | | | .400 |
| 8 | 18 | 6021-2037 | 1/4-20 X 0.50 PHMS | | | .011 |
| 8 | 17 | 6021-2084 | 1/4-20 X 1.25 SHCS | | | .052 |
| 2 | 16 | 6021-0885 | SCW PAN HD #6-32 X .5 | | | .002 |
| 8 | 15 | 6021-0106 | SCW PAN HD #8 X 3/8 TRF F SS | | | .010 |
| 2 | 14 | 57481918 | WHEEL - 4 NOT DIA | | | .400 |
| 4 | 13 | 39981048 | 5/16 PUSH NUT | | | .002 |
| 4 | 12 | 399840 | 1/4 RSH NUT | | | .001 |
| 4 | 11 | 1930-8205-08 | SHW AFB-250 | | | .040 |
| 1 | 10 | 10065-1480-0A | BECK WELDMENT | | | 34.30 |
| 1 | 9 | 3500-C205-0A | TRIM BOARD | | | .015 |
| 2 | 8 | 10065-C462-08 | WHEEL COVER | | | .183 |
| 1 | 7 | 10065-C478-08 | WAT - 182X | | | .913 |
| 2 | 6 | 10065-B381-08 | AXLE SHAFT - SW WHEEL | | | .025 |
| 1 | 5 | 10065-B559-08 | LATCH COVER PLATE | | | .073 |
| 4 | 4 | 10065-B306-08 | BUSHING - .3770x.5000x.47L | | | .009 |
| 2 | 3 | 10065-B305-08 | AXLE SHAFT - MAIN | | | .070 |
| 2 | 2 | 6660-0138 | SPACER # 6x .187 | | | .001 |
| 4 | 1 | 10065-R108-08 | RFB FOOT | | | .100 |

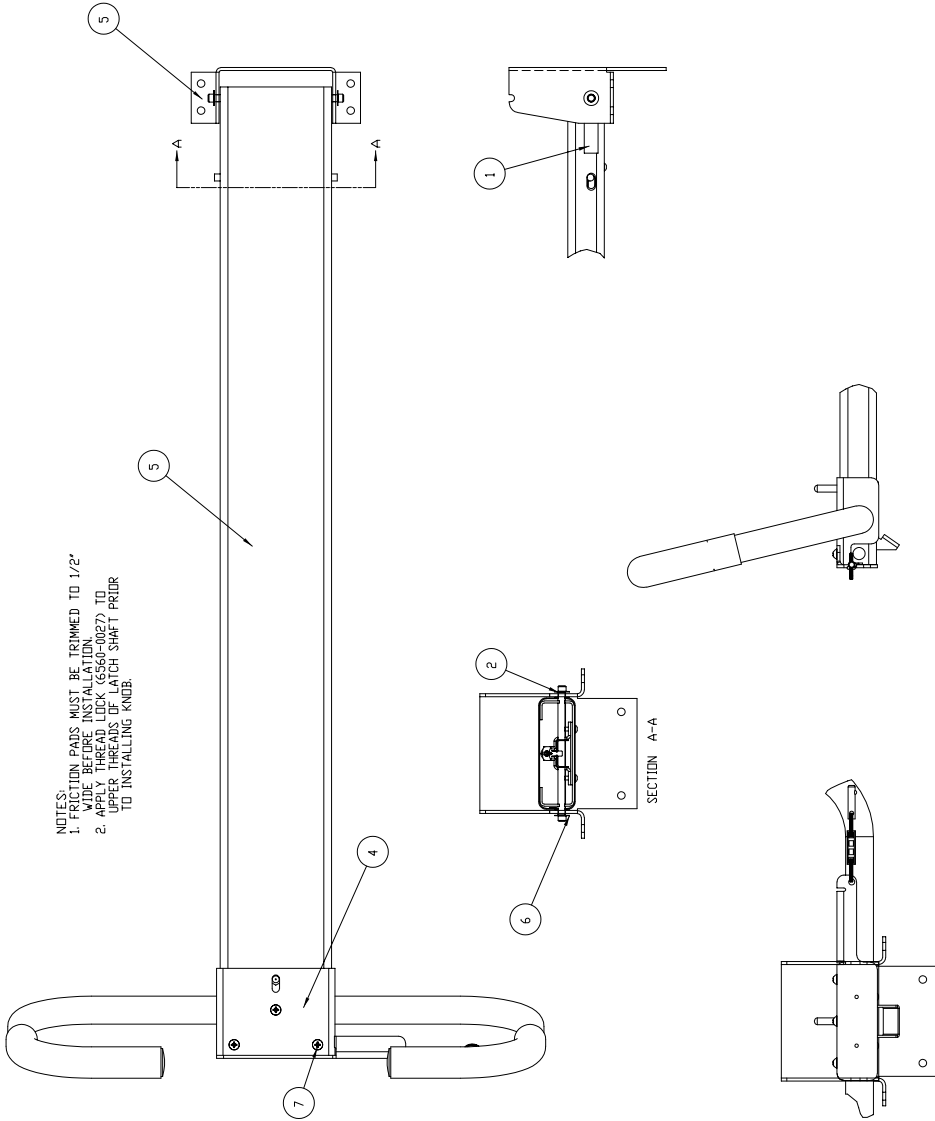
UNLESS OTHERWISE SPECIFIED TOLERANCES ON DIMENSIONS ARE:
 FRACTIONS ± 1/32 IN.
 DECIMALS ± .005 IN.
 DECIMALS ± .001 IN.
 HOLE DIA ± .001 IN.
 HOLE DIA ± .002 IN.
 HOLE DIA ± .003 IN.
 HOLE DIA ± .004 IN.
 HOLE DIA ± .005 IN.
 HOLE DIA ± .006 IN.
 HOLE DIA ± .007 IN.
 HOLE DIA ± .008 IN.
 HOLE DIA ± .009 IN.
 HOLE DIA ± .010 IN.

NOTE: MATERIALS TO BE USED AS SHOWN ON DRAWING UNLESS OTHERWISE SPECIFIED.

THIS DRAWING IS THE PROPERTY OF CARDINAL INDUSTRIES, INC. IT IS TO BE USED ONLY FOR THE MANUFACTURE OF THE PARTS AND ASSEMBLIES SPECIFIED HEREON. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.

SCALE: MS
 DATE: 07/20/05
 DRAWN BY: J. W. BERRY
 CHECKED BY: J. W. BERRY
 APPROVED BY: J. W. BERRY

TITLE: WEIGHBRIDGE ASSY
 PART NUMBER: 10065-D474-0A
 SHEET NO.: 1 OF 1



NOTES:
 1. FRICTION PADS MUST BE TRIMMED TO 1/2" WIDE BEFORE INSTALLATION.
 2. APPLY THREAD LOCK (6560-0027) TO UPPER THREADS UP LATCH SHAFT PRIOR TO INSTALLING KNOB.

| QTY. | ITEM | DESCRPTION | PART NO./MATERIAL OR SOURCE | WE. EACH |
|---|------|--------------|---------------------------------|----------|
| 3 | 7 | 6021-1006 | 1/4"-20 X 0.5 RHMS SELF TAPPING | .006 |
| 2 | 6 | 3984-0 | 1/4" PUSH NUT | .001 |
| 1 | 5 | 0065-0339-0A | COLUMN AND LATCH ASSEMBLY | 5.48 |
| 1 | 4 | 0065-C391-0A | HANDLE ASSEMBLY | 3.117 |
| 1 | 3 | 0065-0472-08 | COLUMN MOUNT | 6.419 |
| 1 | 2 | 0065-8342-08 | PIN - COLUMN PIVOT | .069 |
| 2 | 1 | 0033-8051-08 | FRICTION PAD | .001 |
| PARTS/MATERIAL LIST | | | | |
| UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES AND DECIMALS ARE TO THE NEAREST THOUSANDTHS (0.001). DIMENSIONS IN PARENTHESES ARE FOR REFERENCE ONLY. DIMENSIONS IN PARENTHESES ARE FOR REFERENCE ONLY. DIMENSIONS IN PARENTHESES ARE FOR REFERENCE ONLY. DIMENSIONS IN PARENTHESES ARE FOR REFERENCE ONLY. | | | | |
| TOLERANCES ON DIMENSIONS ARE: FRACTIONS 1/16" IN. DECIMALS 0.001" IN. DIMENSIONS IN PARENTHESES ARE FOR REFERENCE ONLY. DIMENSIONS IN PARENTHESES ARE FOR REFERENCE ONLY. DIMENSIONS IN PARENTHESES ARE FOR REFERENCE ONLY. | | | | |
| NOTE: MATERIALS MUST BE STORED IN A DRY, CLEAN, AND PROTECTED AREA. MATERIALS MUST BE STORED IN A DRY, CLEAN, AND PROTECTED AREA. MATERIALS MUST BE STORED IN A DRY, CLEAN, AND PROTECTED AREA. | | | | |
| THE INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE. | | | | |
| DATE: 12/2/20 | | | | |
| SCALE: 1/2" = 1'-0" | | | | |
| DRAWN BY: [REDACTED] | | | | |
| CHECKED BY: [REDACTED] | | | | |
| APPROVED BY: [REDACTED] | | | | |
| MODEL: 6550 | | | | |
| SHEET 1 OF 1 | | | | |
| REV. [REDACTED] | | | | |
| PART NO. 0065-D475-0A | | | | |



