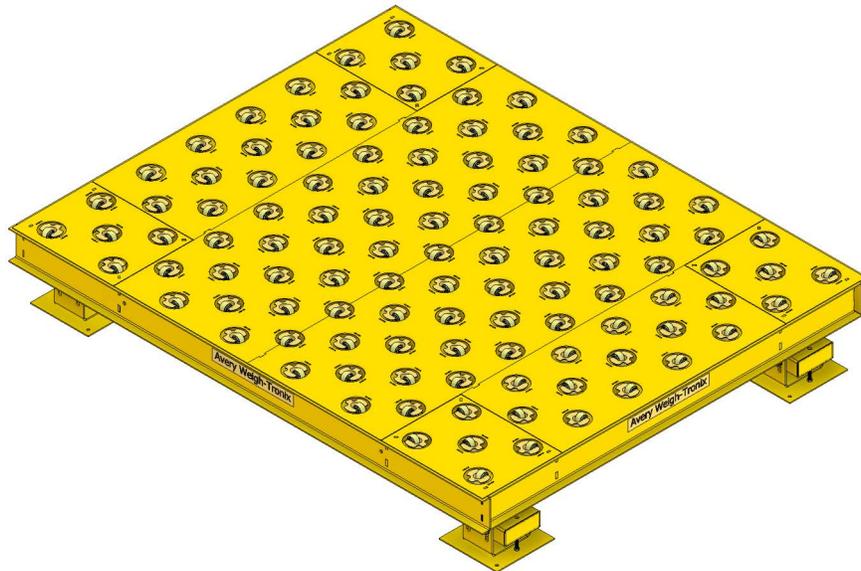


Federal Express Swivel Caster Scale System

Model SCS 131107-20



Operation and Maintenance Manual

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1 Introduction and Description of Your Systems

1.1 Introduction

Avery Weigh-Tronix is proud to present you with your Swivel Caster Scale System. This system was specially designed to fit your air-cargo weighing needs, both now and in the future.

This manual provides verified procedures that will enable a person who is unfamiliar with the SCS system to operate, maintain and repair it properly.

1.2 System Specifications



Avery Weigh-Tronix reserves the right to change specifications and features without notice and without incurring obligation.

1.2.1 Mechanical Specifications

Total Capacity	20,000 lbs
System Accuracy	0.1% or less of applied load

1.2.2 Weigh Bar Specifications

The Weigh Bar is Avery Weigh-Tronix[®] patented alternate to a traditional loadcell. For more information check out the *Weigh Bar Drawing* [on page 7](#).

The Avery Weigh-Tronix[®] Federal Express Swivel Caster Deck Scale System provides the means to weigh airfreight containers while they are being loaded.

Maximum Load	5,000 lbs
Maximum Excitation	20 V AC or DC
Input Resistance	350 ohms \pm 1%
Output Resistance	350 ohms \pm 1% page 7
Zero Balance	\pm 1% of rated capacity
Output at rated capacity	2.03 mv/v
Non-linearity (maximum)	0.02% of rated output
Repeatability	0.02% of rated output
Creep (maximum)	0.01% of rated output
Safe Overload	150% of rated output
Maximum Overload	200% of rated output
Insulation resistance	10^{10} ohms

1.3 Description of Swivel Caster Deck Scale System

1.3.1 Major Components

The system has two major parts:

1. Swivel caster deck scale assembly
2. Remotely mounted indicator (see indicator for operation instructions)

Figure 1.1 shows the scale deck.

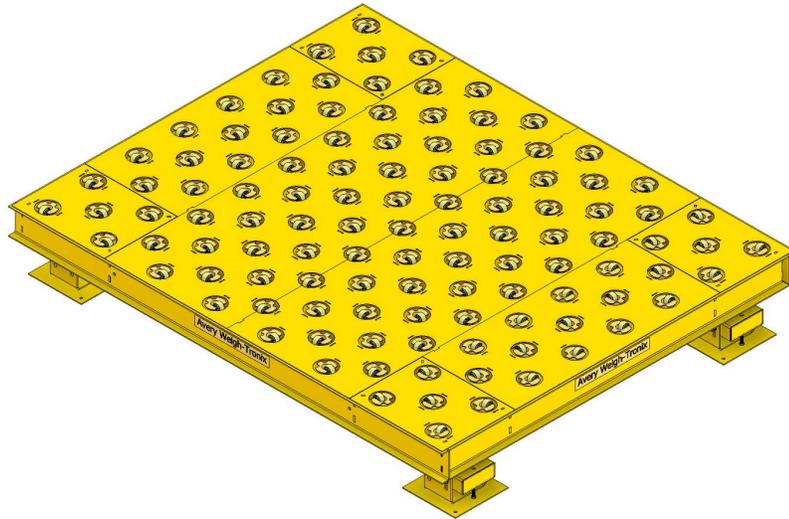


Figure 1.1 Swivel caster deck scale

See the simplified block diagram in Figure 1.2.

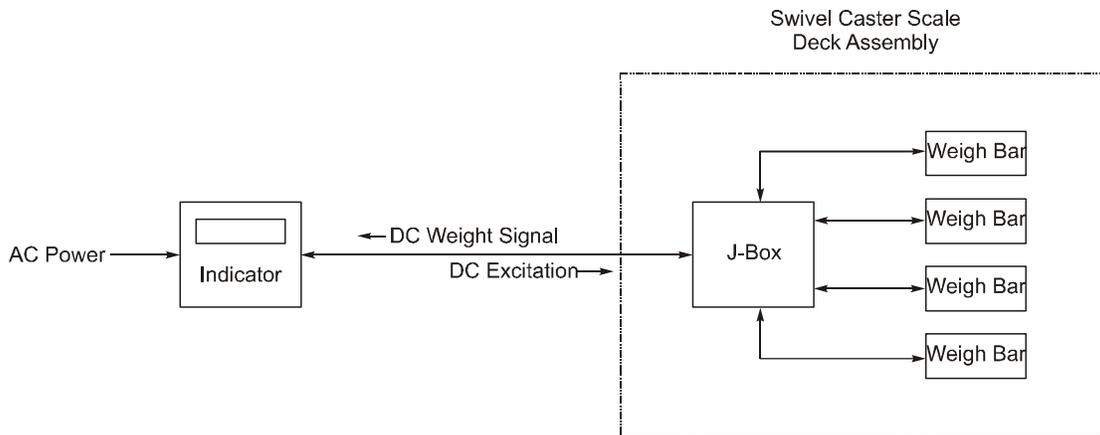


Figure 1.2 Swivel caster deck scale system simplified block diagram

The swivel caster deck assembly consists four Avery Weigh-Tronix 5000 lb capacity Weigh Bars, a junction box, a subframe and mounting components. See the illustrations in the back of this manual for details of the scales construction.

2 Installation and Wiring Information

2.1 Scale Deck Installation

The surface of the scale deck should be parallel to the floor slab in the direction of daily travel. The deck must be level front to back, in the direction of container travel and the scale must be anchored in place with expansion bolts.

Following are the steps for installing the scale platform. See Figure 2.1.



Do all welding prior to installation of the interface cable.

Do not weld on or near a Weigh Bar. Excessive heat or high currents may cause internal damage. Place welding ground on the support channel and not on the sub-frame.

1. Determine the scale location and position mounting base plates per outline drawing for your system.
2. Drill holes in concrete floor and fasten base plates with 5/8" x 3" long expansion bolts and flat washers.
3. Set a support channel on center of each base plate.
4. Place the scale platform in position with the sub-frame inside the support channels.
5. Insert two .75" diameter bolts with washer through support channel and sub-frame. Thread nut on bolt but DO NOT TIGHTEN.
6. Adjust scale platform to desired height using the .62" diameter bolts in each corner and tighten the support channels to the sub-frame.
7. Center support channel on base plates and weld the base plates and support channels together. (Repair paint finish upon completion of welding.)
8. Install interface cable between the scale platform and indicator enclosure.

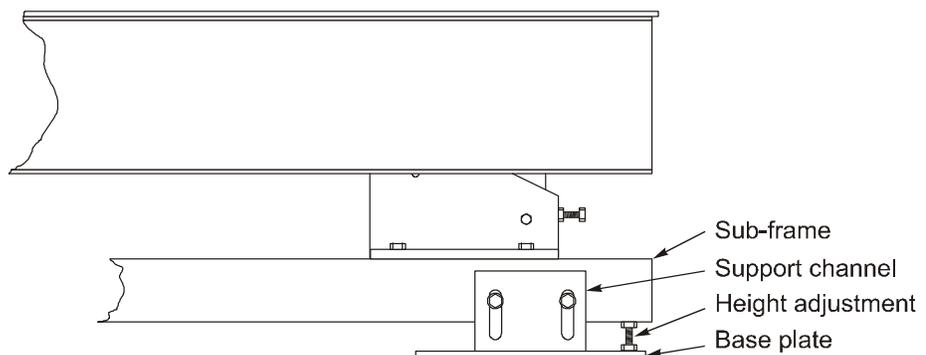


Figure 2.1 Mounting illustration

2.2 Indicator

Make the necessary connections between the indicator and the scale junction box as shown in [Wiring Diagram on page 8](#). Plug the AC power cable into the appropriate power source, 110 V ac, 60 Hz.

3 Operating Instructions

See the user and service manuals for the indicator used with this scale for instructions on daily operation and calibration procedures.

4 Maintenance and Calibration

4.1 Caster Maintenance

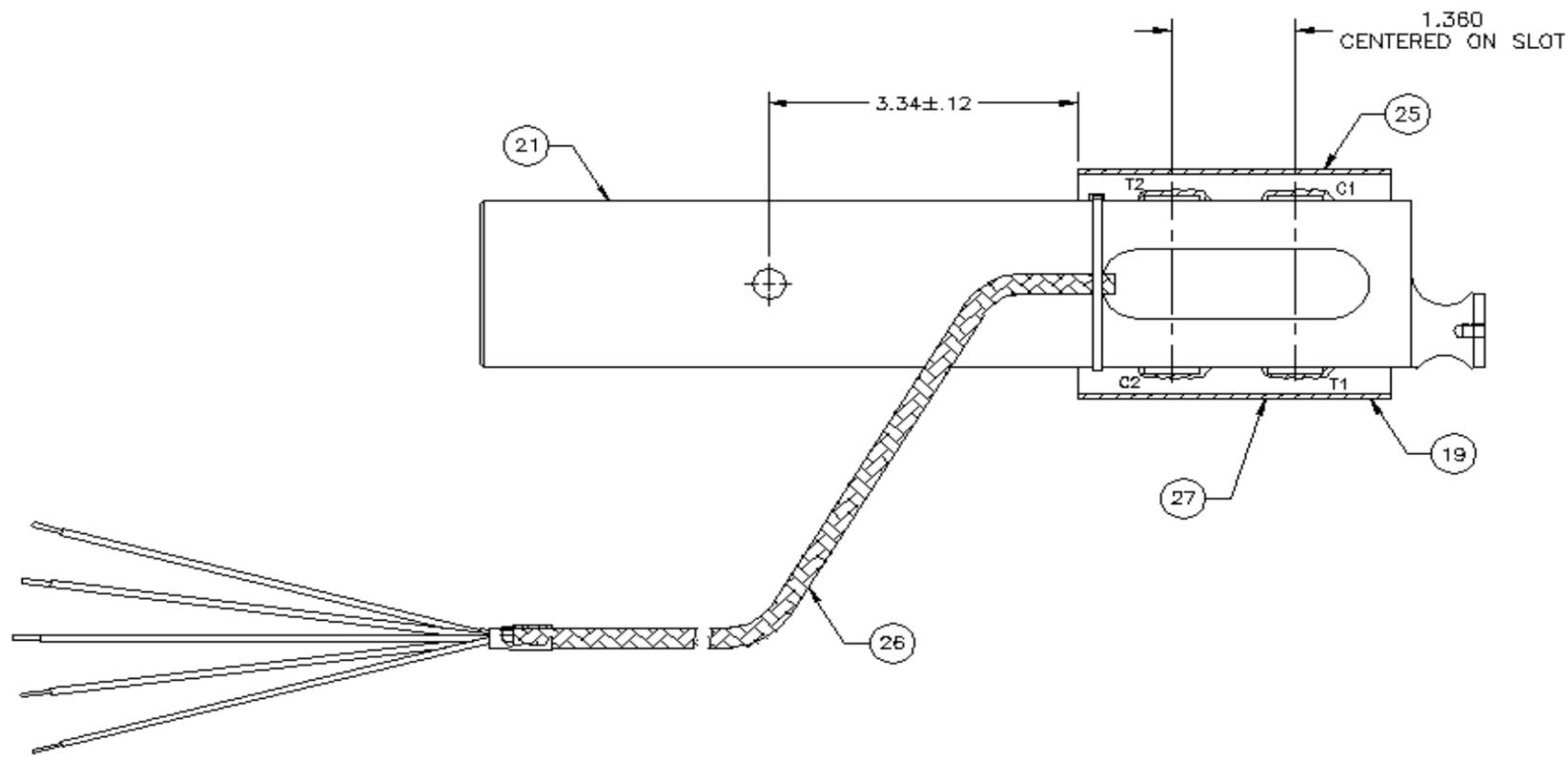
1. Check casters for free movement.
2. Casters do not require lubrication.
3. Replace any faulty casters.

4.2 Weigh Bar Maintenance

1. Check for cracks or abrasions on cables.
2. Check to see that cables are not pinched or restricting scale movement.
3. Check adjustment of overload stops.
4. Remove any debris from around weigh bar suspension points. Be sure that suspension points have no restrictions to free movement.

5 Technical Illustrations

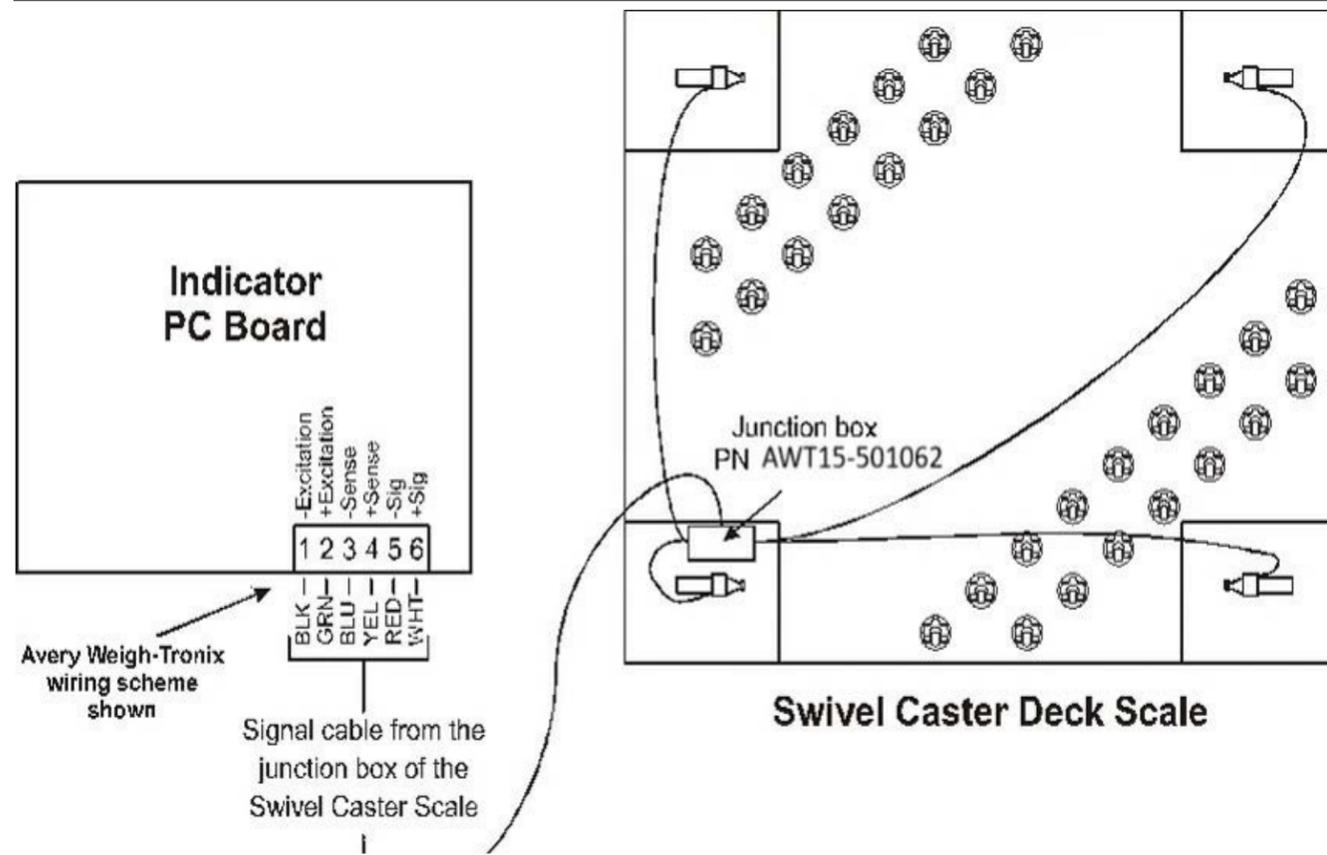
5.1 Weigh Bar Drawing



1	27	-	-
1	AWT27-100020	WEIGH BAR ASSY, 5,000 LB 25' SST BRAID CABLE TIN LEADS	
QTY	ITEM NO.	PART NUMBER	DESCRIPTION
			REF. DESIG.

THIRD ANGLE PROJECTION 		UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. TOLERANCES ARE: 2 PLACE DECIMALS ± .03 3 PLACE DECIMALS ± .010 ANGLES ± 1' DEG. HOLE DIA. TOLERANCES 0.00 - .250 +.003/- .002 INT. CLASS .251 - .500 +.006/- .003 EXT. CLASS OVER .500 +.010/- .006 2B 2h		DO NOT SCALE DRAWING REMOVE BURRS & SHARP EDGES APPROVALS: DAVID ADAMS DATE: 12 DEC 2022 CHECK: MECH ENG AARON PEARSON DATE: 12 DEC 2022 ELEC ENG FINISH		PARTS LIST Avery Weigh-Tronix, LLC 1000 ARMSTRONG DRIVE, FAIRMONT, MN 58031 USA WEIGH BAR ASSY, 5,000 LB 25' SST BRAID CABLE TIN LEADS	
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5.2 Wiring Diagram



5.3 Swivel Caster Scale Assembly and Parts List SCS-131107-20, and AWT05-1007

NOTES:

- BASE PLATE (ITEM 39) CHANNEL SUPPORT (ITEM 41) AND FASTENERS (ITEMS 49, 50, 59, 61, 67 & 70) TO BE SHIPPED SEPARATELY. ON SITE, ADJUST TO DESIRED HEIGHT USING ITEMS 49 & 59, AND SECURE MOUNTING BRACKET TO SUBFRAME USING ITEMS 50, 61, 67 & 70. (REF AWT35-100119 FOR FLOOR MOUNTING DETAILS). WELD MOUNTING BRACKETS (ITEM 41) TO BASE PLATES (ITEM 39). PAINT TO BE TOUCHED UP AFTER FIELD WELDING.
- PLACE CABLE TIES AND MOUNTING DEVICES (ITEMS 44 & 79) SUCH THAT CABLES ARE SECURE TO FRAME.
- CUT TAPE (ITEM 77) INTO (2) 3.00" STRIPS AND ADHERE TO TOP AND BOTTOM BACKSIDE EDGES OF NAME PLATE (ITEM 32).

DRAWING ISSUE RECORD

ZONE	ISSUE	DESCRIPTION	BY	DATE	APPR
AA		RELEASE FOR PRODUCTION. ECO-102321	DJA	4/8/2022	AJP
AB		ITEM 8 WAS 17257-0129. ECO-120875	DJA	8 DEC 2022	AJP
AC		ITEM 19 WAS AWT20-100743 ITEM 41 WAS 23474-0025. ITEM 59 WAS 14495-0920 ECO-103345	DJA	17 JULY 2023	AJP

ITEM	QTY	PART NUMBER	DESCRIPTION
82	8	AWT20-100842	PLATE,CASTER SHIM-YELLOW,SCS
81	113	48537-0019	CASTER,SWIVEL-W/GUARD FED EX
79	12	17887-0036	MOUNT, CABLE TIE, 1.5 X 1.5
77	.5	17822-0026	TAPE,(2) SIDED 1/32 X 1/2 WIDE
75	2	14503-0060	SCREW,PHIL PAN HD SS 10-32 x .625
74	4	14489-0357	SCREW,HEX HD SS 8-32 X .375
72	8	14480-0059	NUT,HEX-SLFGK,.56-ASUNC-GR2
70	16	14475-0122	WASHER,FLAT,TYPE A,CS,.75
69	32	14475-0106	WASHER,FLAT,TYPE A,CS,.50
67	8	14474-0123	WASHER,LOCK CS.750
66	32	14474-0107	WASHER,LOCK CS.50
64	2	14474-0057	WASHER,LOCK SST #10
63	4	14474-0040	WASHER,LOCK SST#8
61	8	16149-0446	BOLT,HEX HD,.75-10 UNC X 12 LONG
59	4	14495-0961	BOLT,HEX HD,GR 5, FULL THD -.625-11 X 8.00
56	226	AWT20-100877	BOLT,SERRATED FLANGE,.38-16 X .75 GR5
54	16	14494-0640	BOLT,HEX HD .50-13 X 2.00
53	16	14472-0539	BOLT,HEX HD -.50-13 x 1.50
52	16	14472-0521	BOLT,HEX HD -.50-13 x 1.25
50	8	14471-0134	NUT,HEX .75-10 UNC CS
49	4	14471-0126	NUT,HEX .625-11 UNC CS
48	16	14471-0100	NUT,JHEX CS 1/2-13UNC
46	4	14450-1244	PIN,SPRING,SLOTTED
44	12	13762-0019	TIE,CABLE
41	4	AWT20-101264	CHANNEL,SUPPORT-SLOTTED 17"-23" HEIGHT RANGE
39	4	23473-0018	PLATE,BASE
37	4	15066-0025	U-BOLT,5/8"
36	4	14247-0020	PLATE,RETAINER-SST
32	1	22264-0302	PLATE,ID-SCS131107-20
29	4	47425-0073	DECAL,AWTX LOGO 1.5" HIGH WHT
26	4	13519-0023	CLIP,RETAINING-SST
24	2	AWT20-100737	COVER WELDMENT, LEFT SCS131107-20
23	2	AWT20-100735	COVER WELDMENT, RIGHT SCS131107-20
21	1	AWT20-100708	DECK, TOP WELDMENT SCS131107-20
19	1	AWT20-101263	SUB-FRAME WELDMENT SCS131107-20
17	4	16435-0050	BASE,W/B WELDMENT
16	1	16431-0054	BRACKET WELDMENT
10	4	13518-0024	CHAIN LINK ASSY, 1/2 XINC PLT
8	4	AWT27-100020	W/B, 5K LB 25' SST BRD CABLE
6	1	AWT15-501062	J-BOX,4 W/B TC SUM/LTG SUPP
ITEM	QTY	PART NUMBER	DESCRIPTION

PARTS LIST

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
 2 PLACE DECIMALS ± .03
 3 PLACE DECIMALS ± .010
 ANGLES ± 1 DEG.

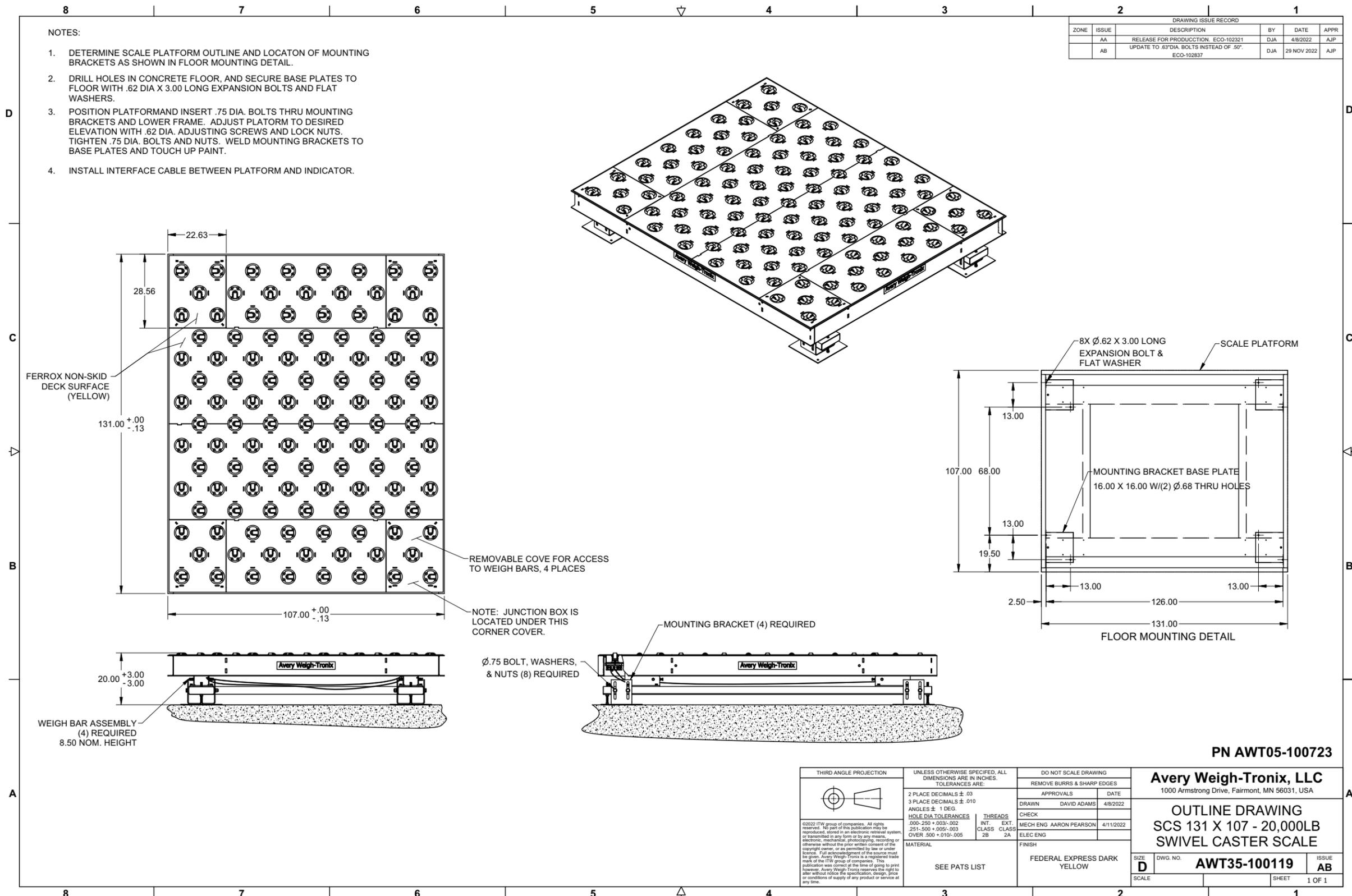
DO NOT SCALE DRAWING
 REMOVE BURRS & SHARP EDGES
 APPROVALS DATE
 DRAWN DAVID ADAMS 4/8/2022
 CHECK MECH ENG AARON PEARSON 4/11/2022
 ELEC ENG

FINISH FEDERAL EXPRESS DARK YELLOW

AWT05-100723
 1000 Armstrong Drive, Fairmont, MN 56031, USA
 SCS 131 X 107 - 20,000LB SWIVEL CASTER SCALE

SIZE D DWG. NO. AWT05-100723 ISSUE AC
 SCALE SHEET 1 OF 1

5.4 Swivel Caster Scale Outline Drawing SCS-131107-20 and AWT35-100119



PN AWT05-100723

Avery Weigh-Tronix, LLC
1000 Armstrong Drive, Fairmont, MN 56031, USA

OUTLINE DRAWING
SCS 131 X 107 - 20,000LB
SWIVEL CASTER SCALE

SIZE **D** DWG. NO. **AWT35-100119** ISSUE **AB**

THIRD ANGLE PROJECTION		UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. TOLERANCES ARE:		DO NOT SCALE DRAWING		
		2 PLACE DECIMALS ± .03		REMOVE BURRS & SHARP EDGES		
		3 PLACE DECIMALS ± .010		APPROVALS	DATE	
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		.000-.250 +.003/-0.02		INT.	EXT.	
		.251-.500 +.005/-0.03		CLASS	CLASS	
OVER .500 +.010/-0.05		2B	2A			
MATERIAL		SEE PATS LIST		FINISH		
				FEDERAL EXPRESS DARK YELLOW		

Avery Weigh-Tronix



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