

Table of Contents

H. Other Modules	H-2
Stand-Alone Dust Cover	H-2
1. Product Overview	H-2
1.1 Materials of Construction	H-2
2. Installation	H-4
3. Operation	H-4
3.1 Operational Notes for Non-Standard Stand-Alone Dust Covers	H-5
3.2 Use of Sensors with Stand-Alone Dust Covers.....	H-5
4. Maintenance	H-6
5. Troubleshooting and Service Procedures	H-7
5.1 Troubleshooting	H-7
5.2 Service Procedures.....	H-7
5.2.1 Plunger Replacement.....	H-7
6. Serviceable Parts	H-10
7. Specifications	H-15
8. Drawings	H-16
8.1 QC-40 Series Stand Alone Dust Cover, 11 x 8	H-16
8.2 QC-62 Stand-alone Tool Cover, Dynamic Application w/ Pin Block Feedback.....	H-17
8.18 QC-76 Series Stand-alone Dust Cover	H-19
8.3 QC-100 Series Stand-alone Tool Cover	H-20
8.4 QC-150 Series Stand-alone Tool Cover	H-21
8.5 QC-200 Series Stand-alone Tool Cover	H-22
8.6 QC-200 Series Tool Cover with SST Ball Plungers, also compatible with QC-160	H-23
8.7 QC-200 Series Stand-alone Dust Cover (PN2 Version).....	H-24
8.8 QC-200 Series Tool Cover (HA6 Version).....	H-25
8.9 QC-200 Series Stand-alone Tool Cover, Dynamic Application.....	H-26
8.10 QC-200 Series Stand Alone Cover, Alignment Pin & Boss.....	H-27
8.11 QC-200 Series Stand Alone Dust Cover, Spacer for JL5 or 6.....	H-28
8.12 QC-210 Stand Alone Dust Cover, 189 mm Shield.....	H-29
8.13 QC-300, 305, and 310 Dust Cover	H-30
8.14 QC-300 Series Dust Cover with Spacer for JL5 or 6.....	H-31
8.15 QC-310 Stand-alone Cover, Version 9120-DC-300-14	H-32
8.16 QC-500 Stand-alone Cover - Rectangular	H-33
8.17 QC-500 Stand-alone Cover - Round	H-34

H. Other Modules

Stand-Alone Dust Cover

1. Product Overview

If the Tool Changer's tool side is not in use, a stand-alone dust cover protects the Tool plate's locking components, mating face, and optional module mating faces:



CAUTION: The aluminum bearing race is not intended for load bearing. Do not use the aluminum bearing race with the Tool Changer Master to lift or transport tooling.

Using the Tool Changer's locking mechanism, the stand-alone dust cover's anodized aluminum bearing race couples with the locking components of the Master side, and the dust cover's male coupling and spring plungers attach to the bearing race on the tool side. To remove the dust cover from the Master side, uncouple the cover's bearing race from the Master's locking mechanism.

1.1 Materials of Construction

The Dust Cover Assembly includes the following features:

Table 1.1—Materials of Construction	
No.	Description
1	Stainless Steel Tool Cover
2	Aluminum Tool Cover Bearing Race
3	Aluminum Interface Coupling
4	Alloy Steel Socket Head Cap Screw
5	EPDM Rubber Skirt
6	Stainless Steel Ball Plunger
7	Alloy Steel SHSS

Note: Ball plunger material can be made of nylon. Refer to [Table 4.1](#).

Figure 1.1—Materials of Construction

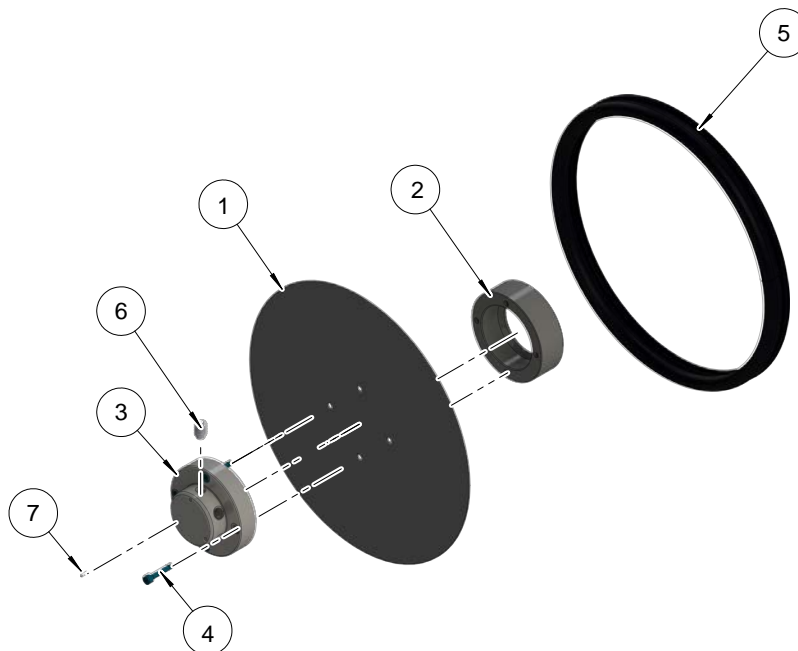
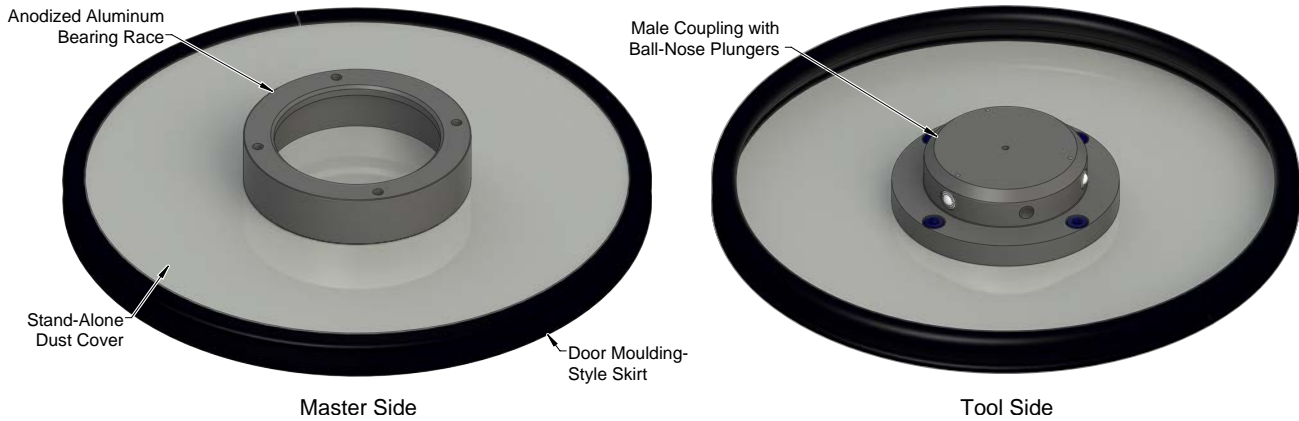


Figure 1.2—Stand-Alone Dust Cover Overview



A variety of dust covers are available to accommodate the size, shape, and fittings of a Tool Changer. For a description of each dust cover, refer to the following table:

Table 1.2—Stand-Alone Dust Covers	
Part No.	Description
9120-DC-40-01	QC-40 Series Stand Alone Dust Cover, 11 x 8 inch
9120-DC-60-3	QC-62 Stand-Alone Tool Cover, Dynamic Application with Pin Block Feedback ¹
9120-DC-76-1	QC-76 Series Stand Alone Dust Cover
9120-DC-100-1	QC-100 Series Stand-Alone Dust Cover
9120-DC-150-1	QC-150 Series Stand-Alone Tool Cover
9120-DC-201-1	QC-200 Series Stand-Alone Tool Cover
9120-DC-201-2	QC-200 Series Stand-Alone Tool Cover (PN2 Version)
9120-DC-201-3	QC-200 Series Stand-Alone Dust Cover (HA6 Version)
9120-DC-201-9	QC-200 Series Stand-Alone Tool Cover, with SST Ball Plungers, also compatible with QC-160
9120-DC-201-13	QC-200 Series Stand Alone Dust Cover, Spacer for JL5 or 6
9120-DC-201-15	QC-200 Series Stand Alone Cover, Alignment Pin & Boss
9120-DC-201-17	QC-210 Stand Alone Dust Cover, 189 mm Shield, Integrated QC-210T Features, Pin Blocks for DKL with Dual Double Valve
9120-DC-300-1	QC-300 Series Stand-Alone Dust Cover
9120-DC-300-5	300 Series Dust Cover with Spacer for JL5 or 6
9120-DC-300-14	QC-310 Stand Alone Dust Cover, 457 mm shield with integrated QC-310 Tool plate features, pin blocks for DKL control and signal module with a dual double valve
9120-DC-500-1	QC-500 Series Stand Alone Tool Cover
9120-DC-500-2	QC-500 Series, Stand Alone Dust Cover, Rectangular
Note:	
1. Dynamic Application dust covers are rated for acceleration up to 10 G.	



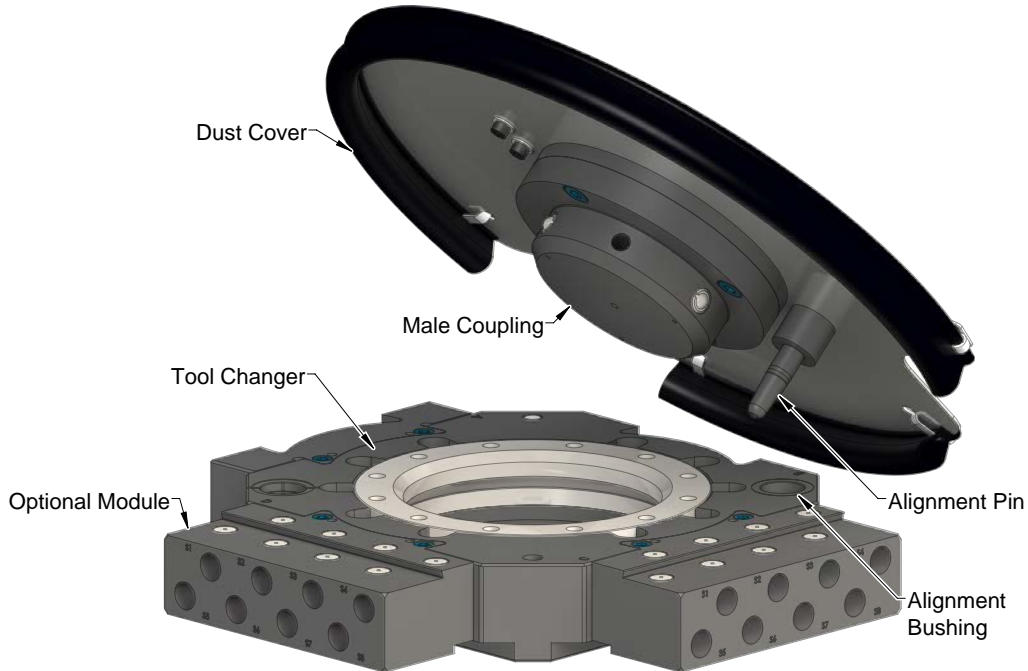
DANGER: Dynamic stand-alone dust covers are the only dust covers that have been tested in dynamic applications up to 10 G acceleration. All other dust covers can potentially detach if used in a dynamic application.

Most dust covers are not rated for applications that require rapid acceleration. The 9120-DC-60-3 stand-alone dust cover is approved for applications with up to 10 G acceleration.

2. Installation

Most stand-alone dust covers do not require special installation other than the initial placement of the cover on the Tool Changer tool. Some models require alignment with Tool Changer alignment features, as in the following example. The alignment pin in the dust cover aligns with the alignment bushing in the Tool plate.

Figure 2.1—Dust Cover with Alignment Pin



3. Operation



CAUTION: In most cases, if the dust cover does not remain parallel to the Tool Changer tool side, the dust cover and Tool Changer Tool plate incur binding and damage.

CAUTION: 9120-DC-60-3 dust cover must remain perpendicular to the Tool Changer tool side face at all times. Otherwise, the dust cover and Tool Changer Tool plate incur binding and damage.

In a typical tool change scenario, the robot removes the dust cover from a tool, places it in a storage location or on another tool, and picks up the required tool. There are generally two options for storing the stand-alone dust cover:

- Move the stand-alone dust cover from the tool that is to be used to another tool.
- Use an aluminum bearing race as a storage location that is separate but near to the tool. Bearing races that are used for stand-alone dust cover storage should be mounted in locations that do not interfere with the operation of the equipment. If you are using a stand-alone aluminum bearing race to store the stand-alone dust cover, additional sensors can be used.

The robot must be taught to pick-up and drop-off the stand-alone dust cover.

3.1 Operational Notes for Non-Standard Stand-Alone Dust Covers

Due to electrical contact sealing features, the 9120-DC-60-3 dust cover requires specific alignment settings and that the dust cover remains perpendicular to the Tool Changer tool side face at all times.

3.2 Use of Sensors with Stand-Alone Dust Covers

The standard lock and unlock sensor input signals can be used to confirm coupling and uncoupling with the stand-alone dust cover.

NOTICE: Only the 9120-DC-201-17 stand-alone dust cover incorporates additional control signals and is compatible with the Ready-to-Lock (RTL) sensor on the Tool Changer Master.

4. Maintenance



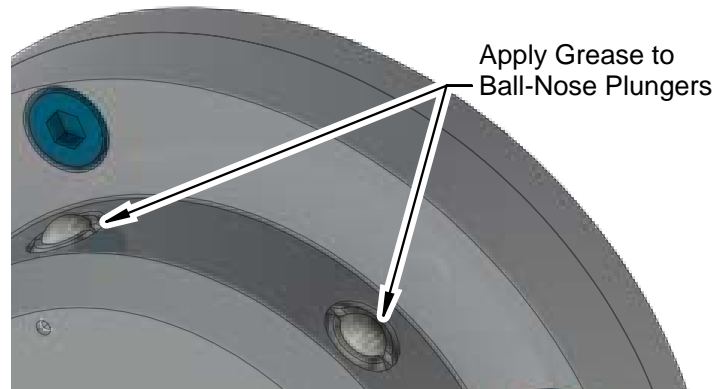
DANGER: If the ball-nose plungers of the dynamic dust covers are not replaced at 50,000 cycles, the dust cover can detach from the Tool Changer during operation.

At every 10,000 cycles, inspect all stand-alone dust covers with the following:

- The aluminum bearing race is free of debris.
- The ball-nose plungers of the male coupling do not show signs of excessive wear.

Stand-alone dust covers with nylon ball-nose plungers do not require lubrication, but stainless steel ball-nose plungers require that lubricant be reapplied periodically.

Figure 4.1—Apply Grease to Stainless Steel Ball-Nose Plunger



Dynamic dust covers require the periodic replacement of ball-nose plungers (refer to [Section 5.2.1—Plunger Replacement](#)). For preventive maintenance guidelines, refer to the following table:

Part No.	Type	Action Required	Cycle period
9120-DC-40-01	Stainless steel	Reapply Mobilgrease XHP-222 Special	100,00 cycles
9120-DC-60-3	Dynamic	Replace ball-nose plungers	50,000 cycles
9120-DC-76-1	Stainless steel	Reapply Mobilgrease XHP-222 Special	100,00 cycles
9120-DC-100-1	Nylon	Lubrication not required	*
9120-DC-150-1			
9120-DC-201-1			
9120-DC-201-2			
9120-DC-201-3			
9120-DC-201-9	Stainless steel	Reapply Mobilgrease XHP-222 Special	100,00 cycles
9120-DC-201-15	Stainless steel	Reapply Mobilgrease XHP-222 Special	100,00 cycles
9120-DC-201-17	Stainless steel	Reapply Mobilgrease XHP-222 Special	100,00 cycles
9120-DC-300-1	Stainless steel	Reapply Mobilgrease XHP-222 Special	100,00 cycles
9120-DC-300-5	Stainless steel	Reapply Mobilgrease XHP-222 Special	100,00 cycles
9120-DC-300-14	Stainless steel	Reapply Mobilgrease XHP-222 Special	100,00 cycles
9120-DC-500-1	Stainless steel	Reapply Mobilgrease XHP-222 Special	100,00 cycles
9120-DC-500-2	Stainless steel	Reapply Mobilgrease XHP-222 Special	100,00 cycles

Note:

1. Applications with spot welding or in dirty environments may require a more frequent maintenance schedule.

5. Troubleshooting and Service Procedures

Troubleshooting and service information to help diagnose conditions and make repairs are in the following sections.

5.1 Troubleshooting

Troubleshooting information is provided in the following table.

Table 4.2—Troubleshooting Procedures		
Symptom	Possible Cause	Correction
No Lock confirmation for stand-alone dust cover.	Debris on aluminum bearing race.	Clean the debris from the mating face on the aluminum bearing race.
Stand-alone dust cover detaches from tool after drop off.	Worn ball-nose plungers.	Adjust the depth of ball-nose plungers and/or replace ball-nose plungers.

5.2 Service Procedures

Component replacement and adjustment procedures are provided in the following section.

5.2.1 Plunger Replacement

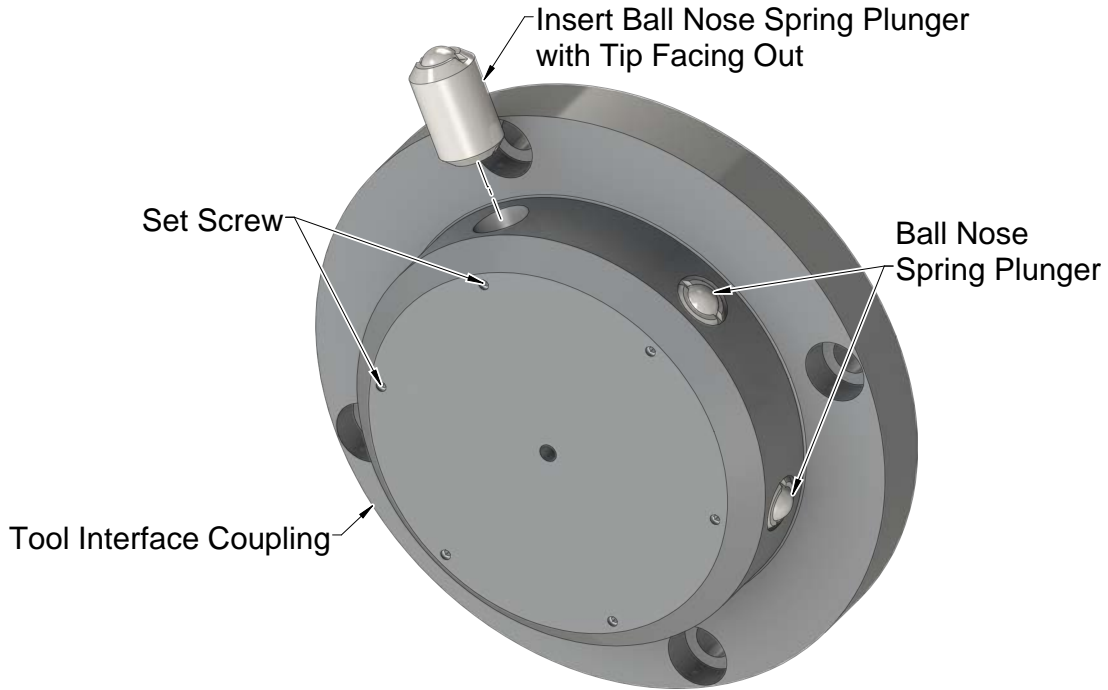


DANGER: If the ball-nose plungers of the dynamic dust covers are not replaced at 50,000 cycles, the dust cover can potentially detach from the Tool Changer tool side during operation.

Tools required: 1.5 mm hex key, flat-head screwdriver (1/4" blade width and 6" length), tool 3810-20-1329

1. Using a 1.5 mm hex key, loosen the set screws one turn.
2. Using a flat-head screwdriver, remove the ball-nose plungers. The following models require specific tools:
 - 9120-DC-201-17 dust cover requires tool 3810-20-1329, because the backside of the plunger is inaccessible using a screwdriver.
 - 9120-DC-60-3 dust cover requires tool 3810-20-1828.
3. Insert the ball nose spring plungers into the holes on the side of the tool interface coupling. Insert the plungers so that the ball-nose tips face outward. See [Figure 4.2](#).

Figure 4.2—QC Series Tool Interface Coupling (Shown)



4. Screw in each plunger so that its metal casing is flush with the outer diameter of the tool interface coupling. To check, use a thin, straight edge and sweep it across the interface coupling's surface towards the ball-nose tip. Ensure that the plunger's metal casing barely contacts the straight edge during the sweep. Check from both directions of each plunger and adjust for the highest side. See [Figure 4.3](#) and [Figure 4.4](#).



CAUTION: If the metal on the plunger casing protrudes past the male interface's cylindrical surface, the bearing race of the Tool Changer tool side might be damaged when the dust cover engages.

Figure 4.3—Using a Straight Edge to Test Ball-Nose Plunger

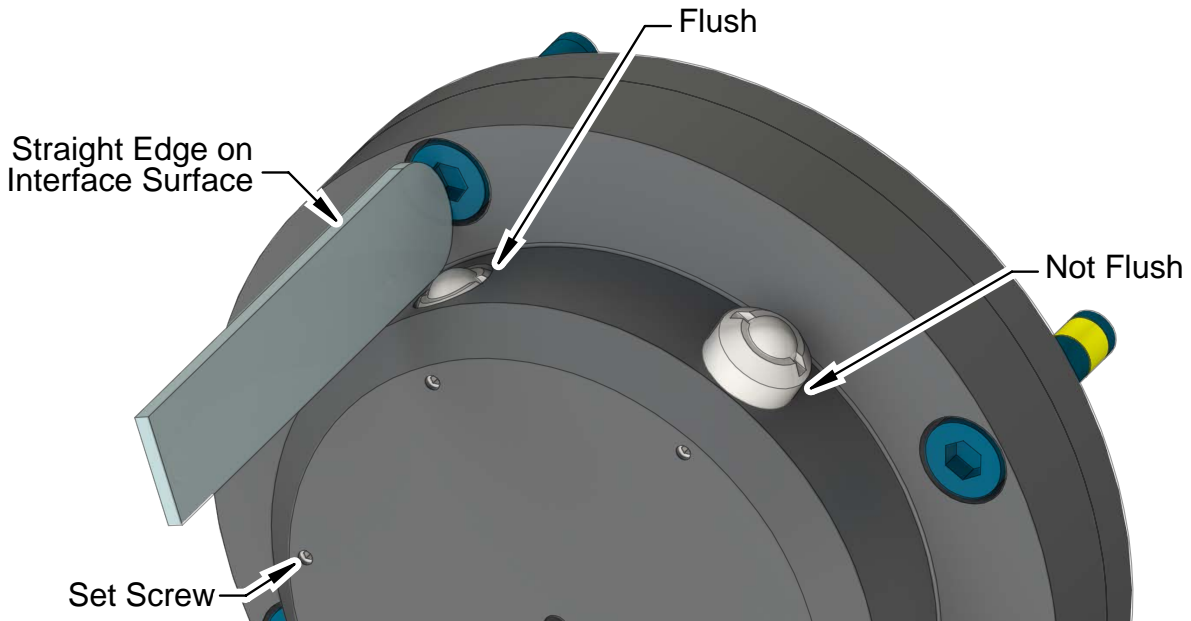
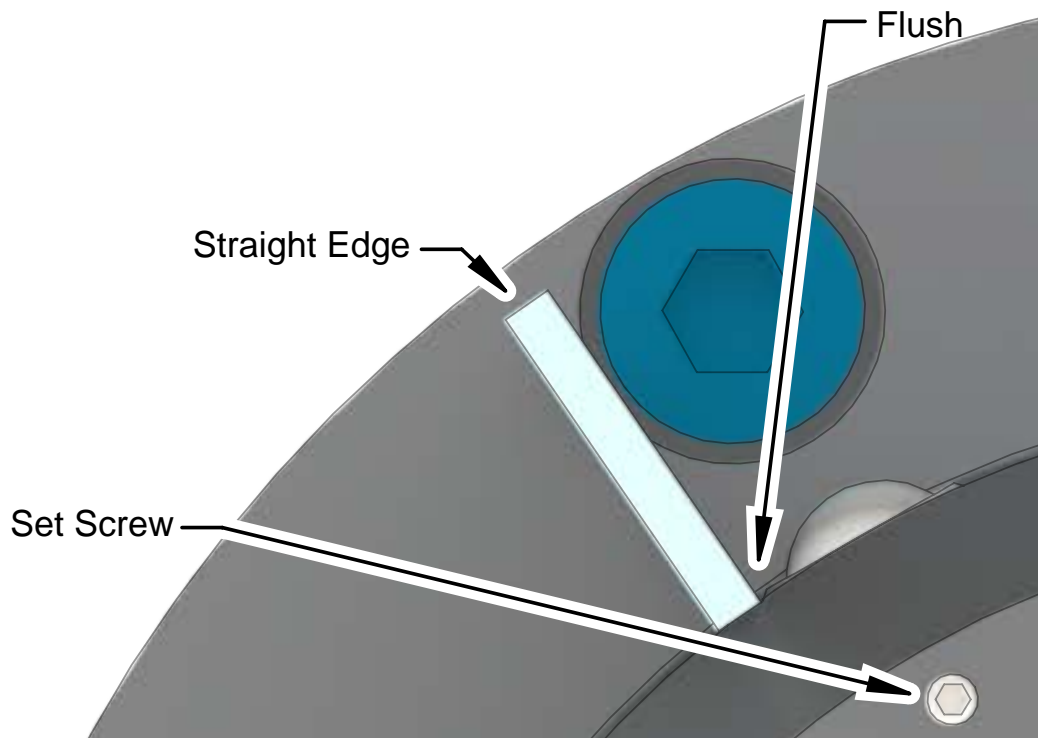


Figure 4.4—Side View of Straight Edge Test for Ball-Nose Plunger



5. Tighten the set screws to the torque specified on the dust cover's drawing. See [Section 8—Drawings](#). Use the screwdriver [or tool 3810-20-1329 (3810-20-1828 for 9120-DC-60-3)] to check that the ball plungers are secured.
6. For stainless steel ball-nose plungers, apply a 1/16" film of Mobilgrease XHP-222 Special. For nylon ball nose-plungers, no lubricant is required (refer to [Table 4.1](#)).

6. Serviceable Parts

Also see: [Section 8—Drawings](#).

Table 5.1—9120-DC-40-01	
Part Number	Description
0290-70-0000-50-002	½ oz. Tube of Mobilgrease XHP 222 Special
3500-1265020-15	M6 x 20 Flat Head Socket Cap Screw, Class 10.9, Blue dyed Magni-565
3500-1962004-12	Socket Set Screw, ISO 4026-M4x4, Flat Point
3606-1005801-10	Spring Plunger, 5/16-18, Steel Body, SS Ball
3700-20-9174	QC-40 Tool Cover Interface Coupling
3700-20-9173	Tool Cover, 40 Series—11 x 8 inch
3700-20-9172	QC-40 Tool Cover Bearing Race (Aluminum)
9120-EPDM-KIT	Rubber EPDM Molding Kit

Table 5.2—9120-DC-60-3	
Part Number	Description
0290-70-0000-50-002	½ oz. Tube of Mobilgrease XHP 222 Special
3500-1962004-21	M4x4 Set Screw, SS
3606-1057800-20	Ball Nose Spring Plunger, SST w/SS Ball, 17 lb. No Locking Element
3810-20-1828	Installation Tool for 5/18 and 8 mm Spring Plunger
4010-0000017-01	V-Ring Seal, V-16A, Nitrile
4010-0000076-01	V-Ring Seal, V-18A, Nitrile
4010-0000030-01	V-Ring Seal, V-22A, Nitrile

Table 5.3—9120-DC-76-1	
Part Number	Description
0290-70-0000-50-002	½ oz. Tube of Mobilgrease XHP 222 Special
3500-1066030-15A	M6-1 x 30mm Socket Head Cap Screw MB w/ND Microspheres Epoxy
3500-1958008-12E	M3x6 Socket Set Screw, Flat Point, Black Oxide, Nylon Patch
3606-1007500-21	Ball Nose Spring Plunger w/SS Ball, 1/2 Thread, No Lock Element, 12lb.
3700-20-11385	QC-76 Tool Interface Coupling
3700-20-11386	QC-76 Tool Cover
9120-DC-11384	QC-76 Series Bearing Race (Aluminum)
9120-EPDM-KIT	Rubber EPDM Molding Kit

Table 5.4—9120-DC-100-1	
Part Number	Description
3500-1068030-15A	M8x30 Socket Head Cap Screw, MB, Pre
3500-1958008-12E	M3x8 Socket Set Screw, Flat Point, Black Oxide, Nylon Patch
3606-1710002-20	Ball Nose Spring Plunger SST w/Nylon Ball, 5/8 Thread, No Lock Element
3700-20-4796	Tool Interface Coupling, QC-100
3700-20-4797	Tool Cover
9120-DC-4795	QC-100 Series Alum. Bearing Race

Table 5.4—9120-DC-100-1	
Part Number	Description
9120-EPDM-KIT	Rubber EPDM Molding Kit

Table 5.5—9120-DC-150-1	
Part Number	Description
3500-1068025-15A	M8 Socket Head Cap Screw, MB, Pre
3500-1958006-12E	M3x6 Socket Set Screw, Flat Point, Black Oxide, Nylon Patch
3606-1710002-20	Ball Nose Spring Plunger SST w/Nylon Ball, 5/8 Thread, No Lock Element
3700-20-3268	Tool Cover
3700-20-5487	Tool Interface Coupling, QC-150
3700-20-5498	QC-150 Series Alum. Bearing Race
9120-EPDM-KIT	Rubber EPDM Molding Kit

Table 5.6—9120-DC-201-1	
Part Number	Description
3500-1068030-15A	M8x30 Socket Head Cap Screw, MB, Pre
3500-1958006-12E	M3x6 Socket Set Screw, Flat Point, Black Oxide, Nylon Patch
3606-1710002-20	Ball Nose Spring Plunger SST w/Nylon Ball, 5/8 Thread, No Lock Element
3700-20-3267	Tool Interface Coupling
3700-20-3268	Tool Cover
9120-DC-3266	QC-200 Series Alum. Bearing Race
9120-EPDM-KIT	Rubber EPDM Molding Kit

Table 5.7—9120-DC-201-2	
Part Number	Description
3500-1068055-15	M8x55 mm Socket Head Cap Screw , MB
3500-1958006-12E	M3x6 Socket Set Screw, Flat Point, Black Oxide, Nylon Patch
3606-1710002-20	Ball Nose Spring Plunger SST w/Nylon Ball, 5/8 Thread, No Lock Element
3700-20-3267	Tool Interface Coupling
3700-20-3268	Tool Cover
3700-20-3269	Interface Coupling Spacer PN2
9120-DC-3266	QC-200 Series Alum. Bearing Race
9120-EPDM-KIT	Rubber EPDM Molding Kit

Table 5.8—9120-DC-201-3	
Part Number	Description
3500-1068070-15	M8x70 Socket Head Cap Screw, MB
3500-1958006-12E	M3x6 Socket Set Screw, Flat Point, Black Oxide, Nylon Patch
3606-1710002-20	Ball Nose Spring Plunger SST w/Nylon Ball, 5/8 Thread, No Lock Element
3700-20-3267	Tool Interface Coupling
3700-20-3268	Tool Cover
3700-20-3270	Interface Coupling Spacer HA6

Table 5.8—9120-DC-201-3	
Part Number	Description
9120-DC-3266	QC-200 Series Alum. Bearing Race
9120-EPDM-KIT	Rubber EPDM Molding Kit

Table 5.9—9120-DC-201-9	
Part Number	Description
0290-70-0000-50-002	1/2 Oz Tube of Mobilgrease XHP 222 Special
3500-1068030-15A	M8x30 mm Socket Head Cap Screw MB w/ND Microspheres Epoxy
3500-1958006-12E	M3x6 Socket Set Screw, Flat Point, Black Oxide, Nylon Patch
3606-1710001-20	Ball Nose Spring Plunger w/SS Ball, 5/8 Thread, No Lock Element, 50lb.
3700-20-3267	Tool Interface Coupling
3700-20-3268	Tool Cover
9120-DC-3266	QC-200 Series Alum. Bearing Race
9120-EPDM-KIT	Rubber EPDM Molding Kit

Table 5.10—9120-DC-201-13	
Part Number	Description
0290-70-0000-50-002	1/2 Oz Tube of Mobilgrease XHP 222 Special
3500-1958006-12E	M3x6 Socket Set Screw, Flat Point, Black Oxide, Nylon Patch
3606-1710001-20	Ball Nose Spring Plunger w/SS Ball, 5/8 Thread, No Lock Element, 50lb.
3810-20-1329	.375" Ball Nose Plunger Removing Tool
9120-EPDM-KIT	Rubber EPDM Molding Kit

Table 5.11—9120-DC-201-15	
Part Number	Description
3500-1068035-15A	M8-1.25 x 35 mm Socket Head Cap Screw, Blue, Pre-Applied
3500-2265025-15	M6X25 Flat Head Socket Cap Screw, Class 12.9, Blue-Dyed Magni-565
3500-1958006-12E	M3-0.5 x 6, Socket Set Screw, Flat Point, Black Oxide, Nylon Patch
3606-1710001-20	Ball Nose Spring Plunger SST w/SS Ball, 50 lb, No Lock Element
3700-20-5265	Spacer, Interface Coupling PA2
3700-20-8936	Shield, 200 Series Dust Cover, 14.5
7710-8969900-00	EPDM Rubber Molding

Table 5.12—9120-DC-201-17	
Part Number	Description
3500-1068035-15A	M8-1.25 x 35 mm Socket Head Cap Screw, Blue, Pre-Applied
3500-2265025-15	M6X25 Flat Head Socket Cap Screw, Class 12.9, Blue-Dyed Magni-565
3500-1958006-12E	M3-0.5 x 6, Socket Set Screw, Flat Point, Black Oxide, Nylon Patch
3606-1710001-20	Ball Nose Spring Plunger SST w/SS Ball, 50 lb, No Lock Element
3700-20-5265	Spacer, Interface Coupling PA2
3700-20-10285	Shield, 200 Series Dust Cover, 14.625 Dia.
7710-8969900-00	EPDM Rubber Molding

Table 5.12—9120-DC-201-17	
Part Number	Description
9005-20-8609	Dummy Module for SADC Interface with DKL and Dual Double Valve

Table 5.13—9120-DC-300-1	
Part Number	Description
0290-70-0000-50-002	1/2 Oz Tube of Mobilgrease XHP 222 Special
3500-1068050-15	M8x50 Socket Head Cap Screw, MB
3500-1958006-12E	M3x6 Socket Set Screw, Flat Point, Black Oxide, Nylon Patch
3606-1-20	Ball Nose Spring Plunger w/SS Ball, 5/8 Thread, No Lock Element, 50lb.
3700-20-4552	Tool Interface Coupling, QC-300
3700-20-4553	Tool Cover, QC300
3700-20-4561	Spacer, Tool Cover, QC-300
9120-DC-4551	Tool Cover Bearing Race, QC-300
9120-EPDM-KIT	Rubber EPDM Molding Kit

Table 5.14—9120-DC-300-5	
Part Number	Description
0290-70-0000-50-002	1/2 Oz Tube of Mobilgrease XHP 222 Special
3500-1068050-15	M8x50 Socket Head Cap Screw, MB
3500-1958006-12	M3-0.5 x 6, Socket Set Screw, Flat Point, Black Oxide
3606-1710001-20	Ball Nose Spring Plunger w/SS Ball, 5/8 Thread, No Lock Element, 50lb.
3700-20-4552	Tool Interface Coupling, QC-300
3700-20-4553	Tool Cover, QC300
3700-20-5310	Spacer 3/16", QC-300 Series Tool Cover
9120-DC-4551	Tool Cover Bearing Race, QC-300
9120-EPDM-KIT	Rubber EPDM Molding Kit

Table 5.15—9120-DC-300-14	
Part Number	Description
0290-70-0000-50-002	1/2 Oz Tube of Mobilgrease XHP 222 Special
3500-1068030-15A	M8x30 Socket Head Cap Screw, Class 12.9, ISO4762/DIN912, Corrosion Protection Coating, YL M-spheres/IFI 525
3500-1958006-12E	M3-0.5 x 6, Socket Set Screw, Flat Point, Black Oxide
3606-1710001-20	Ball Nose Spring Plunger w/SS Ball, 5/8 Thread, No Lock Element, 50lb.
3700-20-8847	Tool Interface Coupling, QC-300, 6 Detent
3700-20-11269	Shield, 18" Diameter with holes for (1) Alignment Pin
3700-20-5310	Spacer 3/16", QC-300 Series Tool Cover
3700-20-5313	7/8" Alignment Pin (Guide Pin), Flange Mount
3500-1066014-15	M6X14 Socket Head Cap Screws for the alignment pin, Class 12.9, ISO4762/DIN912, Corrosion Protection Coating
9120-EPDM-KIT	Rubber EPDM Molding Kit

Table 5.15—9120-DC-300-14	
Part Number	Description
3700-20-11265	QC-310 SADC Interface Plate with Integrated Race, Alignment Bores, RTL Targets, and Ledgemount
9005-20-8609	DKL Cover Module

Table 5.16—9120-DC-500-1	
Part Number	Description
0290-70-0000-50-002	½ oz. Tube of Mobilgrease XHP 222 Special
3500-1070030-15A	M10x30 mm Socket Head Cap Screw, Blue Dyed Magni-565 w/ND Microspheres Epoxy
3500-1958006-12	M3-0.5x6, Socket Set Screw, Flat Point
3606-1710001-20	Ball Nose Spring Plunger SST w/SS Ball, 50 lb, No Lock Element
3700-20-5726	Bearing Race, QC-510 Stand Alone Dust Cover
3700-20-5727	Master Coupling, QC-510 Stand Alone Dust Cover
3700-20-5728	Dust Cover, QC-510
9120-EPDM-KIT	Rubber EPDM Molding Kit

Table 5.17—9120-DC-500-2	
Part Number	Description
0290-70-0000-50-002	½ oz. Tube of Mobilgrease XHP 222 Special
3500-1066012-15A	M6x12 Socket Head Cap Screw, Blue Dyed Magni ND Microspheres
3500-1070030-15A	M10x30 mm Socket Head Cap Screw, Blue Dyed Magni-565 w/ND Microspheres Epoxy
3500-1958006-12	M3-0.5x6, Socket Set Screw, Flat Point
3606-1710001-20	Ball Nose Spring Plunger SST w/SS Ball, 50 lb, No Lock Element
3700-20-5726	Bearing Race, QC-510 Stand Alone Dust Cover
3700-20-5727	Master Coupling, QC-510 Stand Alone Dust Cover
3700-20-8289	Dust Cover, 500 Series – Square
3700-20-8290	Alignment Pin, 500 Series Dust Cover
3700-20-8291	Guide Boss, 500 Series Dust Cover
9120-EPDM-KIT	Rubber EPDM Molding Kit

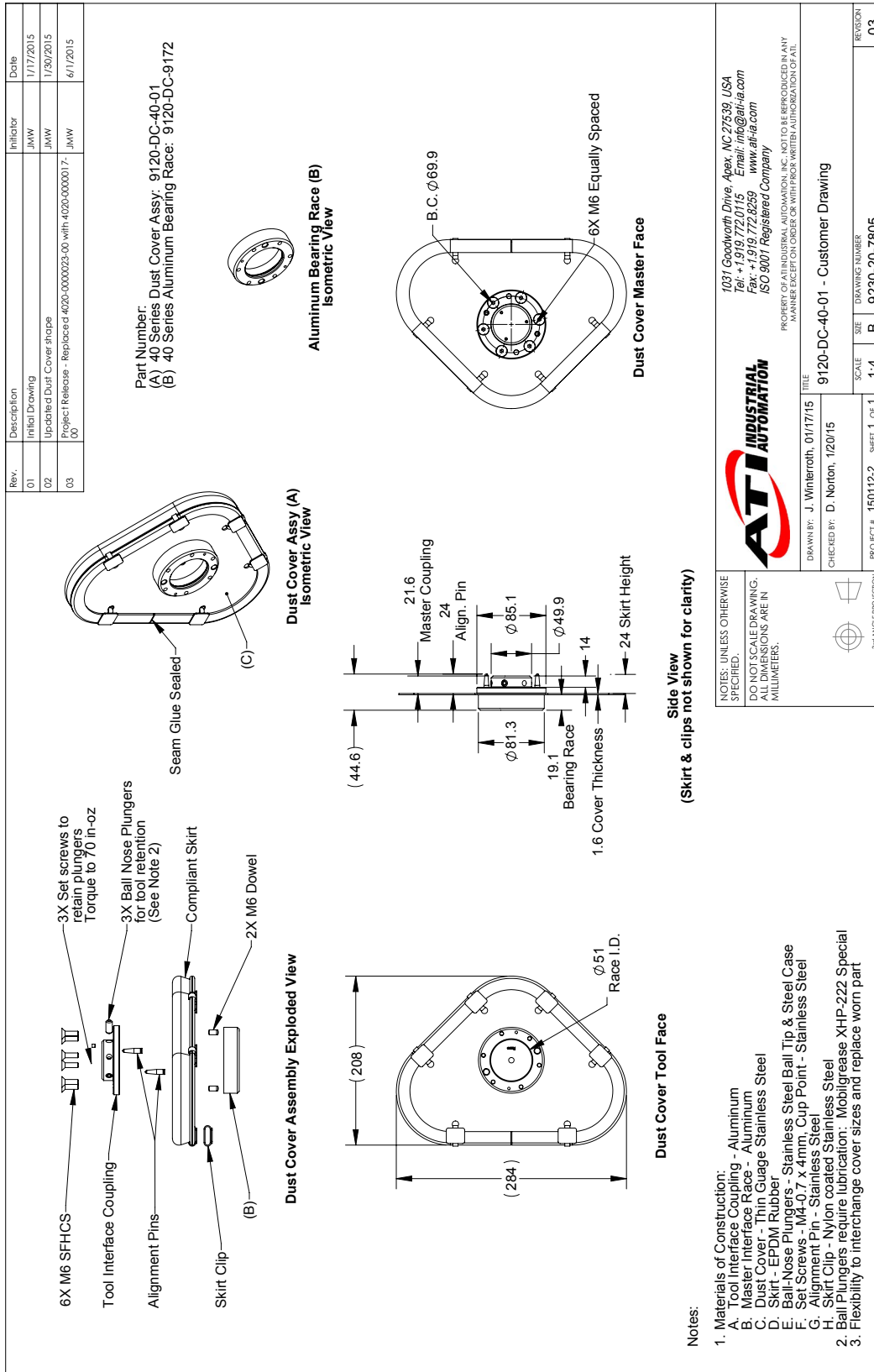
7. Specifications

Table 6.1—Stand-Alone Dust Cover Weights	
Part Number	Weight
9120-DC-40-01	2.3 lbs (1.1 kg)
9120-DC-60-3	4.0 lbs (1.8 kg)
9120-DC-76-1	4.5 lbs (2.1 kg)
9120-DC-100-1	6.5 lbs (2.9 kg)
9120-DC-150-1	6.2 lbs (2.8 kg)
9120-DC-201-1	6.4 lbs (2.9 kg)
9120-DC-201-2	7.0 lbs (3.2 kg)
9120-DC-201-3	7.4 lbs (3.4 kg)
9120-DC-201-9	6.4 lbs (2.9 kg)
9120-DC-201-13	7.3 lbs (3.3 kg)
9120-DC-201-17	9.8 lbs (4.4 kg)
9120-DC-300-1	13.3 lbs (6.0 kg)
9120-DC-300-5	14.8 lbs (6.7 kg)
9120-DC-300-14	18.8 lbs (8.5 kg)
9120-DC-500-1	17 lbs (7.7 kg)
9120-DC-500-2	15.8 lbs (7.2 kg)

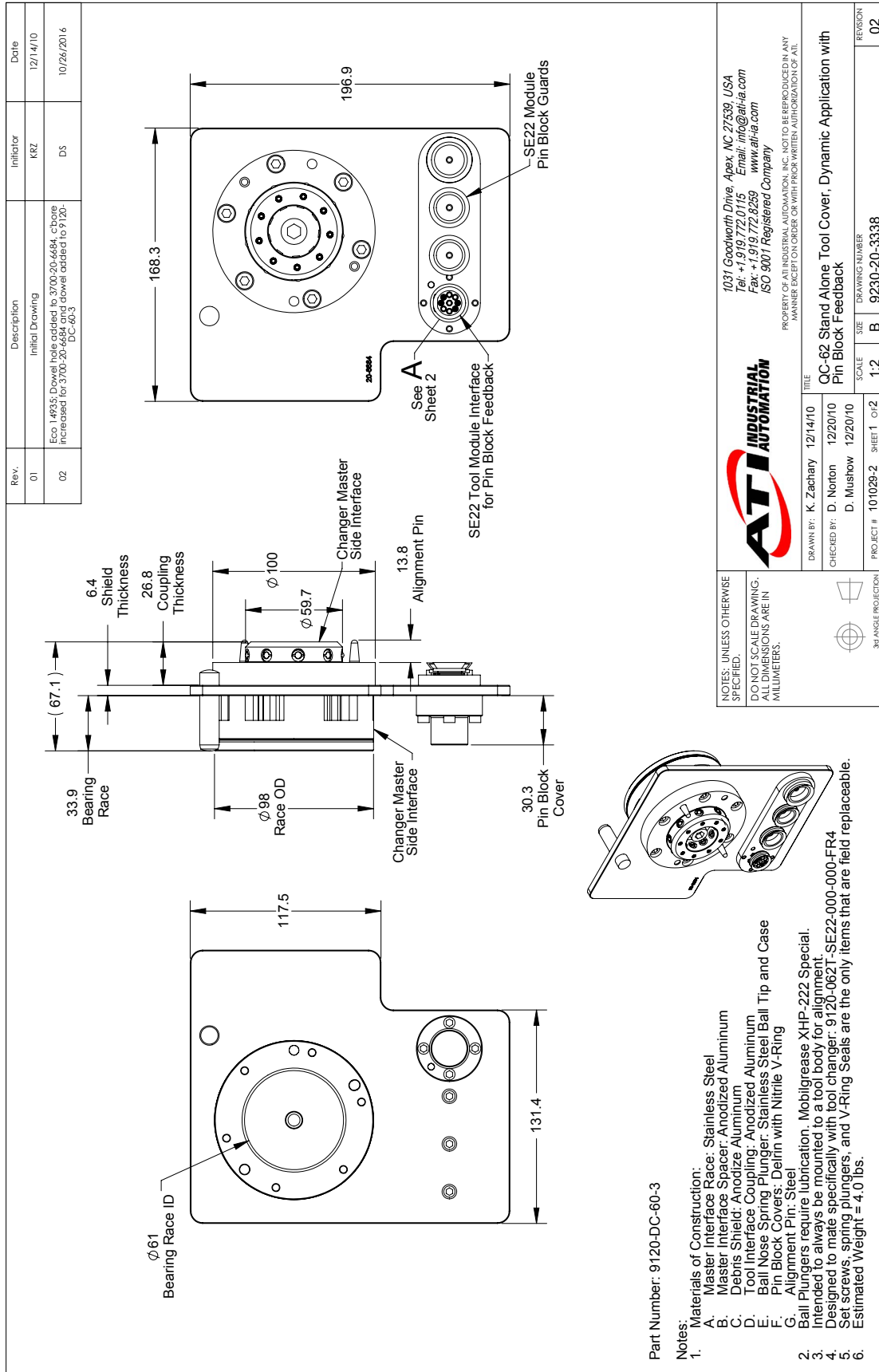
Table 6.2—Stand-Alone Bearing Race Weights	
Part Number	Weight
QC-76 Series	0.7 lbs (0.35 kg)
QC-100 Series	1.0 lbs (0.5 kg)
QC-150 Series	1.3 lbs (0.6 kg)
QC-200 Series	1.3 lbs (0.6 kg)
QC-300 Series	3.1 lbs (1.4 kg)
QC-500 Series	5.0 lbs (2.3 kg)

8. Drawings

8.1 QC-40 Series Stand Alone Dust Cover, 11 x 8



8.2 QC-62 Stand-alone Tool Cover, Dynamic Application w/ Pin Block Feedback

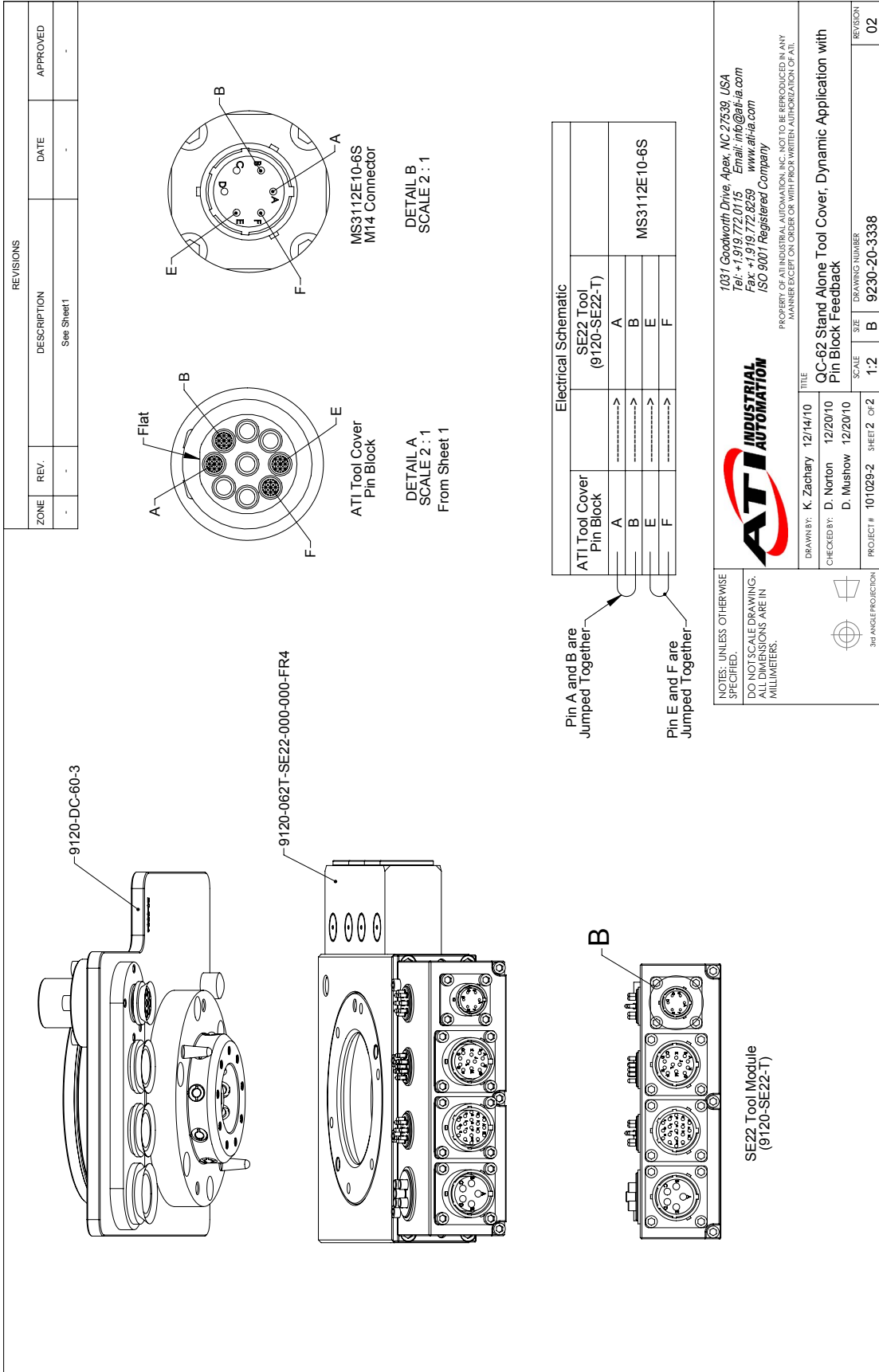


ATI INDUSTRIAL AUTOMATION

1031 Goodworth Drive, Apex, NC 27539, USA
 Tel: +1 919 772 0115 Email: info@ati-ia.com
 Fax: +1 919 772 8259 www.ati-ia.com
 ISO 9001 Registered Company

PROPERTY OF ATI INDUSTRIAL AUTOMATION, INC. NOT TO BE REPRODUCED IN ANY MANNER EXCEPT ON ORDER OR WITH PRIOR WRITTEN AUTHORIZATION OF ATI.

DRAWN BY: K. Zachary	12/14/10	CHECKED BY: D. Norton	12/20/10	SCALE: 1:2	PROJECT #: 101029-2	SHEET 1 OF 2
TITLE: QC-62 Stand Alone Tool Cover, Dynamic Application with Pin Block Feedback				SIZE: B	DRAWING NUMBER: 9230-20-3338	REVISION: 02



REVISIONS			
ZONE	REV.	DESCRIPTION	DATE
-	-	See Sheet 1	-
			APPROVED

Electrical Schematic	
ATI Tool Cover Pin Block	SE22 Tool (9120-SE22-1)
A	A
B	B
E	E
F	F
	MS3112E10-6S

ATI INDUSTRIAL AUTOMATION

1031 Goodworth Drive, Apex, NC 27539, USA
 Tel: +1 919.772.0115 Email: info@ati-ia.com
 Fax: +1 919.772.8259 www.ati-ia.com
 ISO 9001 Registered Company

PROPERTY OF ATI INDUSTRIAL AUTOMATION, INC. NOT TO BE REPRODUCED IN ANY MANNER EXCEPT ON ORDER OR WITH PRIOR WRITTEN AUTHORIZATION OF ATI.

QC-62 Stand Alone Tool Cover: Dynamic Application with Pin Block Feedback

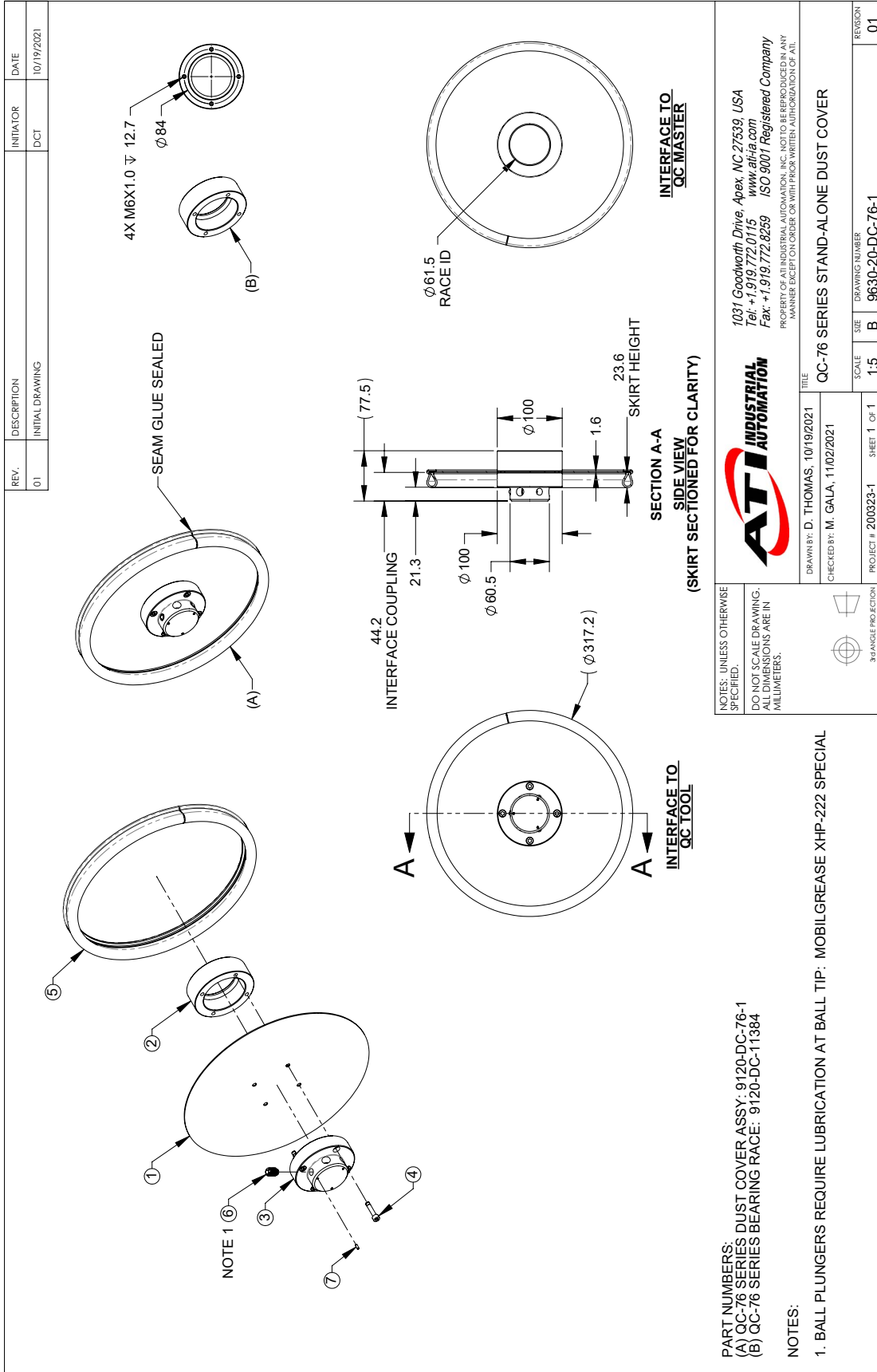
DRAWN BY: K. Zachary 12/14/10
 CHECKED BY: D. Norton 12/20/10
 D. Mushow 12/20/10

SCALE: 1:2
 SIZE: B
 DRAWING NUMBER: 9230-20-3338
 PROJECT #: 101029-2 SHEET 2 OF 2

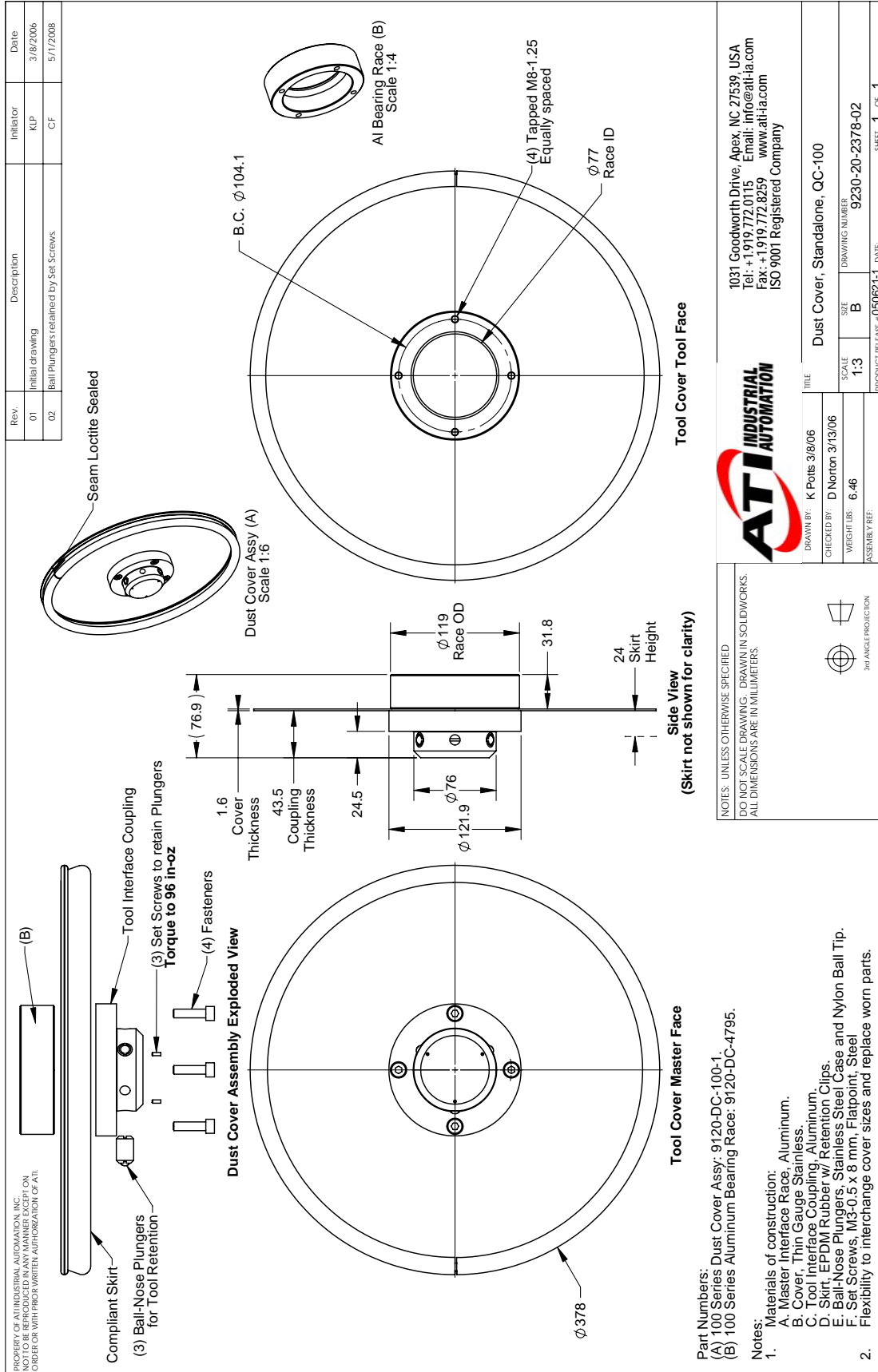
NOTES: UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS.

3rd ANGLE PROJECTION

8.18 QC-76 Series Stand-alone Dust Cover



8.3 QC-100 Series Stand-alone Tool Cover



8.4 QC-150 Series Stand-alone Tool Cover

PROPERTY OF AT INDUSTRIAL AUTOMATION, INC.
 ALL RIGHTS RESERVED. NO REPRODUCTION,
 ORDER OR WITH PROGRAM WRITTEN AUTHORIZATION OF ATI.

Tool Cover Assembly Exploded View

Rev	Description	Initiator	Date
01	Initial Design	M/JG	3/13/2008
02	Ball Plungers retained by set screws.	M/JG	4/29/2008
03	Added Set Screw Torque: 72 in-oz.	M/JG	5/14/2008

Tool Cover Assy. (A) Isometric View Scale 1:5
Al. Bearing Race (B) Isometric View Scale 1:4

Side View (Skirt not shown for clarity)

Tool Cover Tool Face

Tool Cover Master Face

Notes:

- Materials of Construction:
 - A. Master Interface Race, Aluminum
 - B. Cover, Thin Gauge, Stainless
 - C. Tool Interface Coupling, Delrin
 - D. Skirt, EPDM Rubber w/ Retention Clips
 - E. Ball-Nose Plungers, Stainless Steel Case and Nylon Ball Tip.
 - F. Set Screws, M3-0.5 x 6 mm, Flatpoint, Steel.
- Flexibility to interchange cover sizes and replace worn parts.

Part Numbers:

(A) 150 Series Dust Cover Assy.: 9120-DC-150-1
 (B) 200 Series Aluminum Bearing Race (for temporary storage): 9120-DC-3266

Notes: UNLESS OTHERWISE SPECIFIED
 DO NOT SCALE DRAWING. DRAW IN SOLIDWORKS.
 ALL DIMENSIONS ARE IN MILLIMETERS.

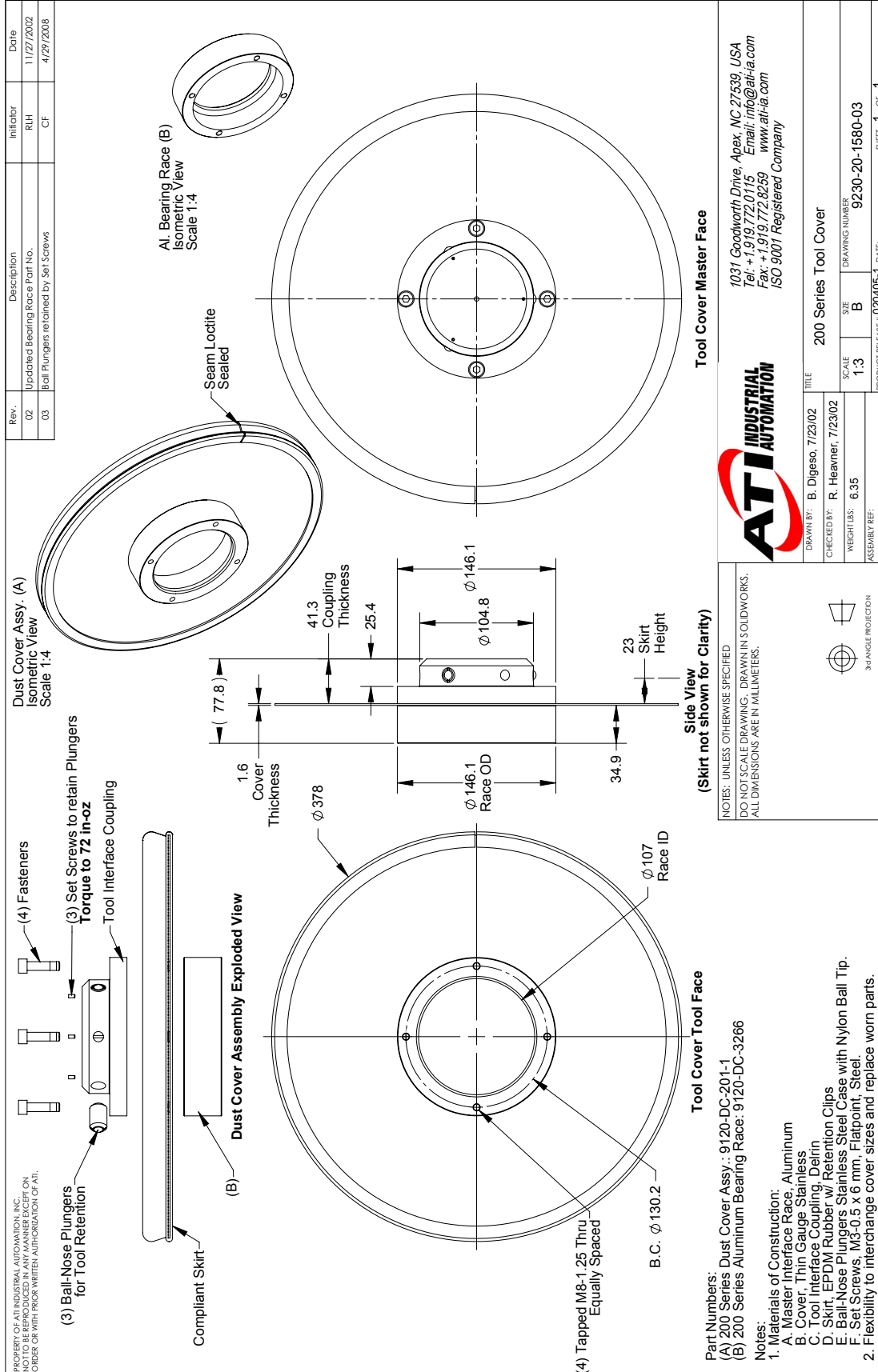
ATI INDUSTRIAL AUTOMATION

1031 Goodworth Drive, Apex, NC 27502 USA
 Tel: +1 919.772.0115 Email: info@ati-ia.com
 Fax: +1 919.772.8259 www.ati-ia.com
 ISO 9001 Registered Company

DRAWN BY: M. Gala, 3/13/08	TITLE: QC-150 Series Stand Alone Tool Cover
CHECKED BY: L. Hines, 3/13/08	SCALE: 1:4
WEIGHT LBS: 6.18	SIZE: B
ASSEMBLY REF.	DRAWING NUMBER: 9230-20-2743-03
PRODUCT RELEASE # 080306-3	DATE:

SHEET 1 OF 1

8.5 QC-200 Series Stand-alone Tool Cover



Rev.	Description	Initiator	Date
02	Updated Bearing Race Part No.	RIH	11/27/2002
03	Ball Plungers retained by Set Screws	CF	4/29/2008

ATI INDUSTRIAL AUTOMATION

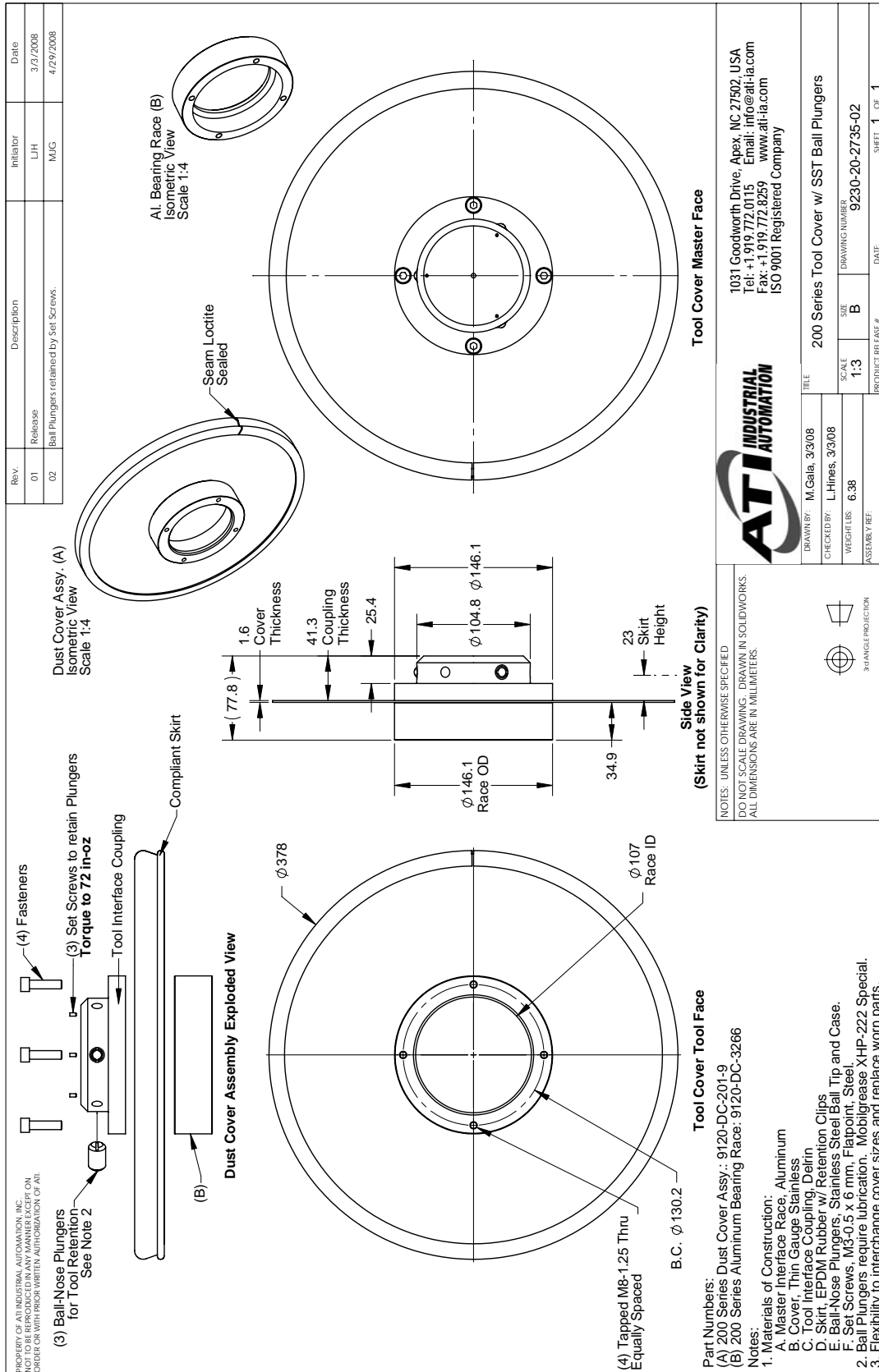
1031 Goodworth Drive, Apex, NC 27539, USA
 Tel: +1 919.772.0115 Email: info@ati-ia.com
 Fax: +1 919.772.8259 www.ati-ia.com
 ISO 9001 Registered Company

200 Series Tool Cover

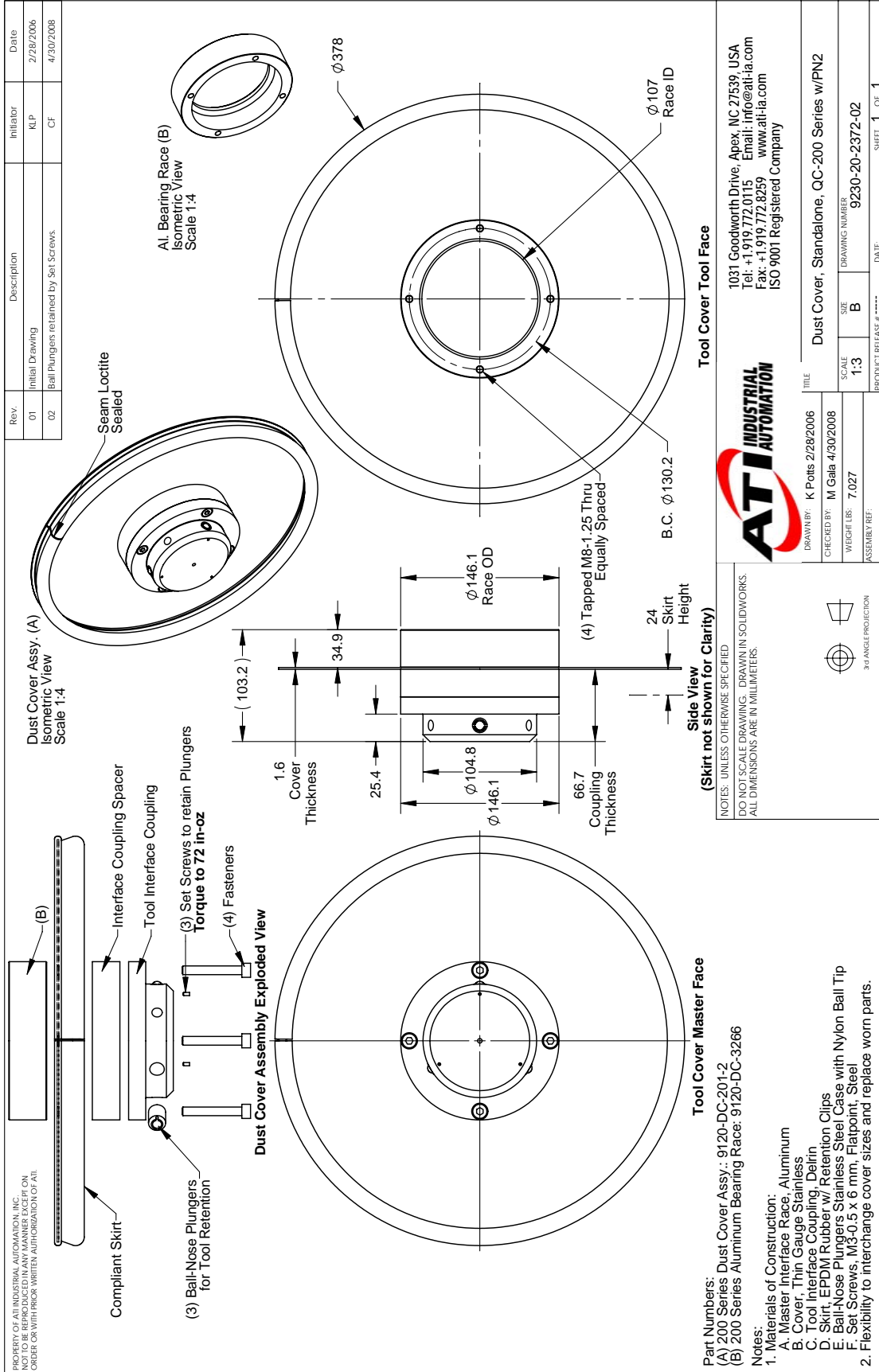
TITLE: 200 Series Tool Cover
 DRAWING NUMBER: 9230-20-1580-03

DRAWN BY: B. Digeso, 7/23/02
 CHECKED BY: R. Heavner, 7/23/02
 SCALE: 1:3
 WEIGHT LBS.: 6.35
 ASSEMBLY REF.:
 PRODUCT RELEASE #: 02/04/05-1 DATE: SHEET 1 OF 1

8.6 QC-200 Series Tool Cover with SST Ball Plungers, also compatible with QC-160



8.7 QC-200 Series Stand-alone Dust Cover (PN2 Version)



8.8 QC-200 Series Tool Cover (HA6 Version)

Rev.	Description	Initiator	Date
02	Added Part Numbers	KLP	2/28/2006
03	Ball Plungers retained by Set Screws.	CF	4/30/2008

(3) Set Screws to retain Plungers Torque to 72 in-oz

(4) Fasteners

(3) Ball-Nose Plungers for Tool Retention

Interface Coupling Spacer

Compliant Skirt

200 Series Aluminum Bearing Race

Dust Cover Assembly Exploded View

Dust Cover Assy. (A) Isometric View Scale 1:4

Seam Loctite Sealed

AI Bearing Race (B) Isometric View Scale 1:4

Side View (Skirt not shown for Clarity)

1.6 Cover Thickness
 79.4 Coupling Thickness
 25.4
 34.9 Skirt Height
 23 Skirt Height
 146.1 Race O.D.
 104.8 Race ID
 107 Race ID

Tool Cover Master Face

Tool Cover Tool Face

$\phi 378$
 B.C. $\phi 130$
 $\phi 107$ Race ID
 25.4

Notes:

- Materials of Construction:
 A. Master Interface Race, Aluminum
 B. Cover, Thin Gauge Stainless
 C. Tool Interface Coupling, Delrin
 D. Skirt, EPDM Rubber w/ Retention Clips
 E. Ball-Nose Plungers Stainless Steel Case with Nylon Ball Tip
 F. Set Screws, M3-0.5 x 6 mm, Flatpoint, Steel
- Flexibility to interchange cover sizes and replace worn parts.

Part Numbers:
 (A) Complete Assembly: 9120-DC-201-3
 (B) Bearing Race: 9120-DC-3286

Notes:
 DO NOT SCALE DRAWING. DRAWN IN SOLIDWORKS.
 ALL DIMENSIONS ARE IN MILLIMETERS.

PROPERTY OF AT INDUSTRIAL AUTOMATION, INC.
 NOT TO BE REPRODUCED IN ANY MANNER EXCEPT ON
 ORDER OR WITH PRIOR WRITTEN AUTHORIZATION OF ATII.

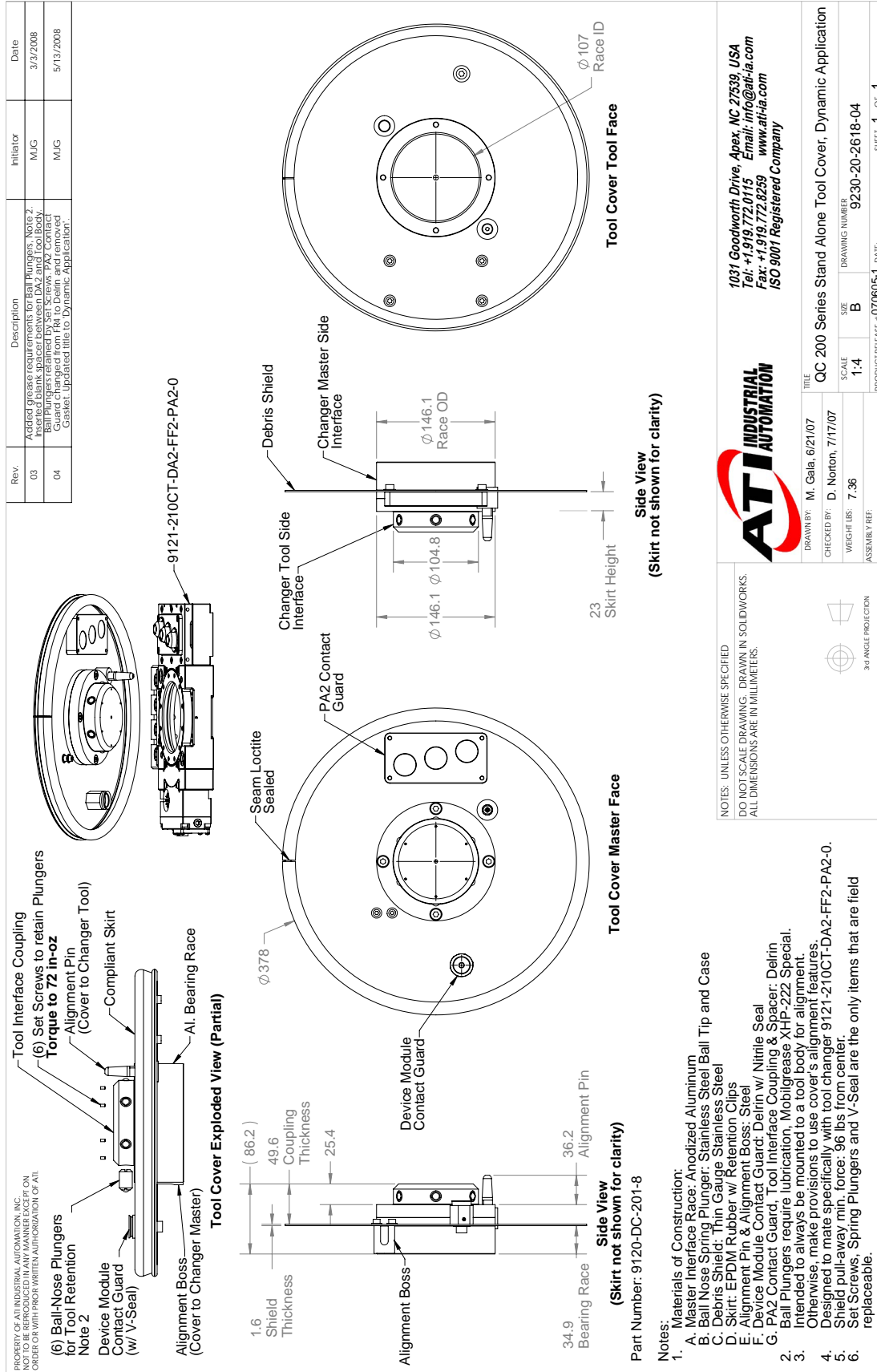
ATI INDUSTRIAL AUTOMATION

1031 Goodworth Drive, Apex, NC 27539, USA
 Tel: +1 919 772.0115 Email: info@ati-ia.com
 Fax: +1 919 772.8259 www.ati-ia.com
 ISO 9001 Registered Company

TITLE	DRAWN BY	CHECKED BY	WEIGHT LBS.	SCALE	SIZE	DRAWING NUMBER	DATE
200 Series Tool Cover for HA6	D. Swanson 6/15/04	A. Otham, 6/16/04	7.4	1:4	B	9230-20-1999-03	

PRODUCT RELEASE # _____ SHEET 1 OF 1

8.9 QC-200 Series Stand-alone Tool Cover, Dynamic Application



ATI INDUSTRIAL AUTOMATION

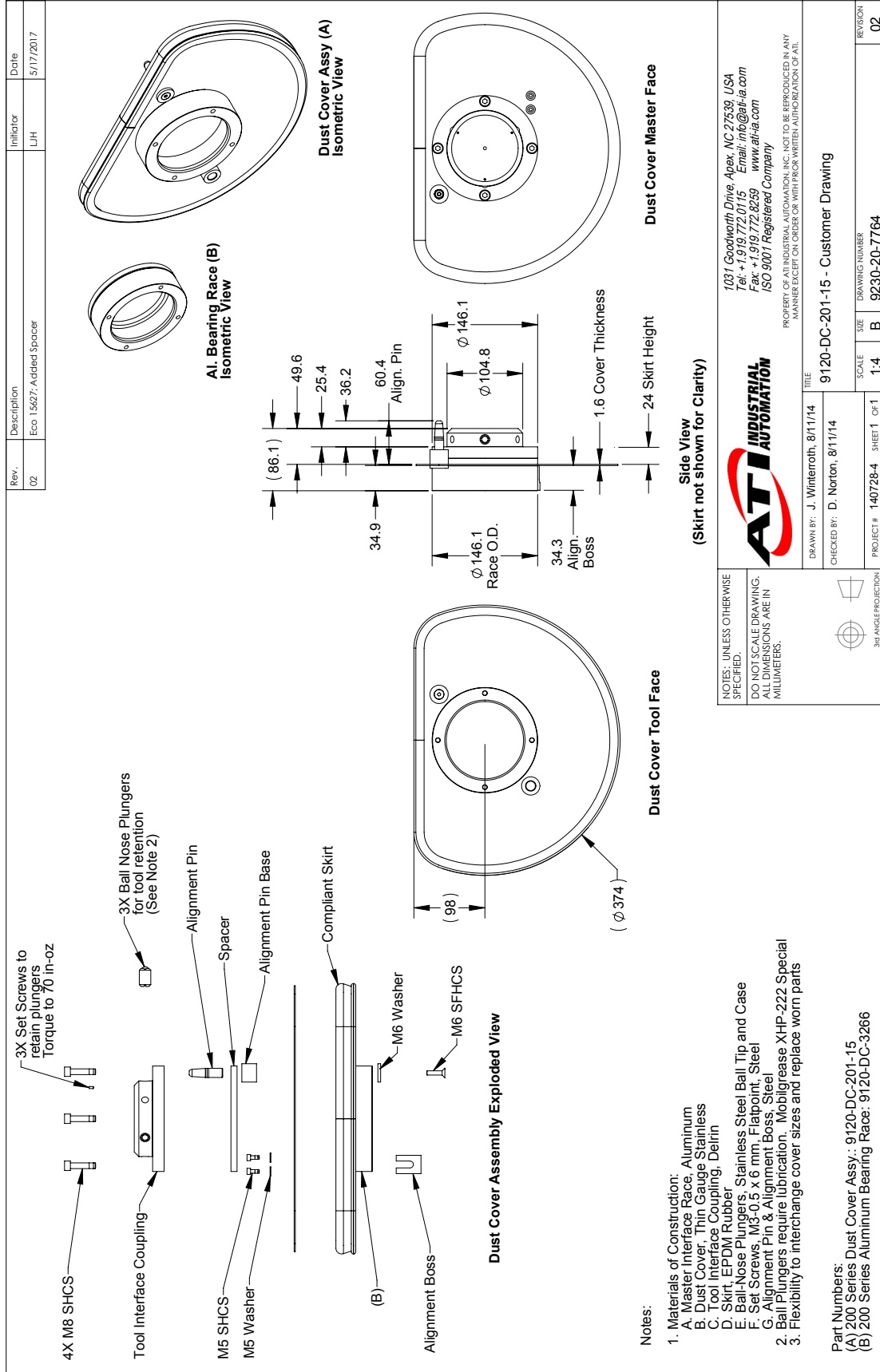
1031 Goodworth Drive, Apex, NC 27539, USA
 Tel: +1,919.772.0115 Email: info@ati-ia.com
 Fax: +1,919.772.8259 www.ati-ia.com
 ISO 9001 Registered Company

TITLE: QC 200 Series Stand Alone Tool Cover, Dynamic Application
 DRAWN BY: M. Gala, 6/21/07
 CHECKED BY: D. Norton, 7/17/07
 SCALE: 1:4
 WEIGHT LBS: 7.36
 ASSEMBLY REF: 9230-20-2618-04
 DRAWING NUMBER: 9230-20-2618-04
 PRODUCT RELEASE # 070605-1 DATE: SHEET 1 OF 1

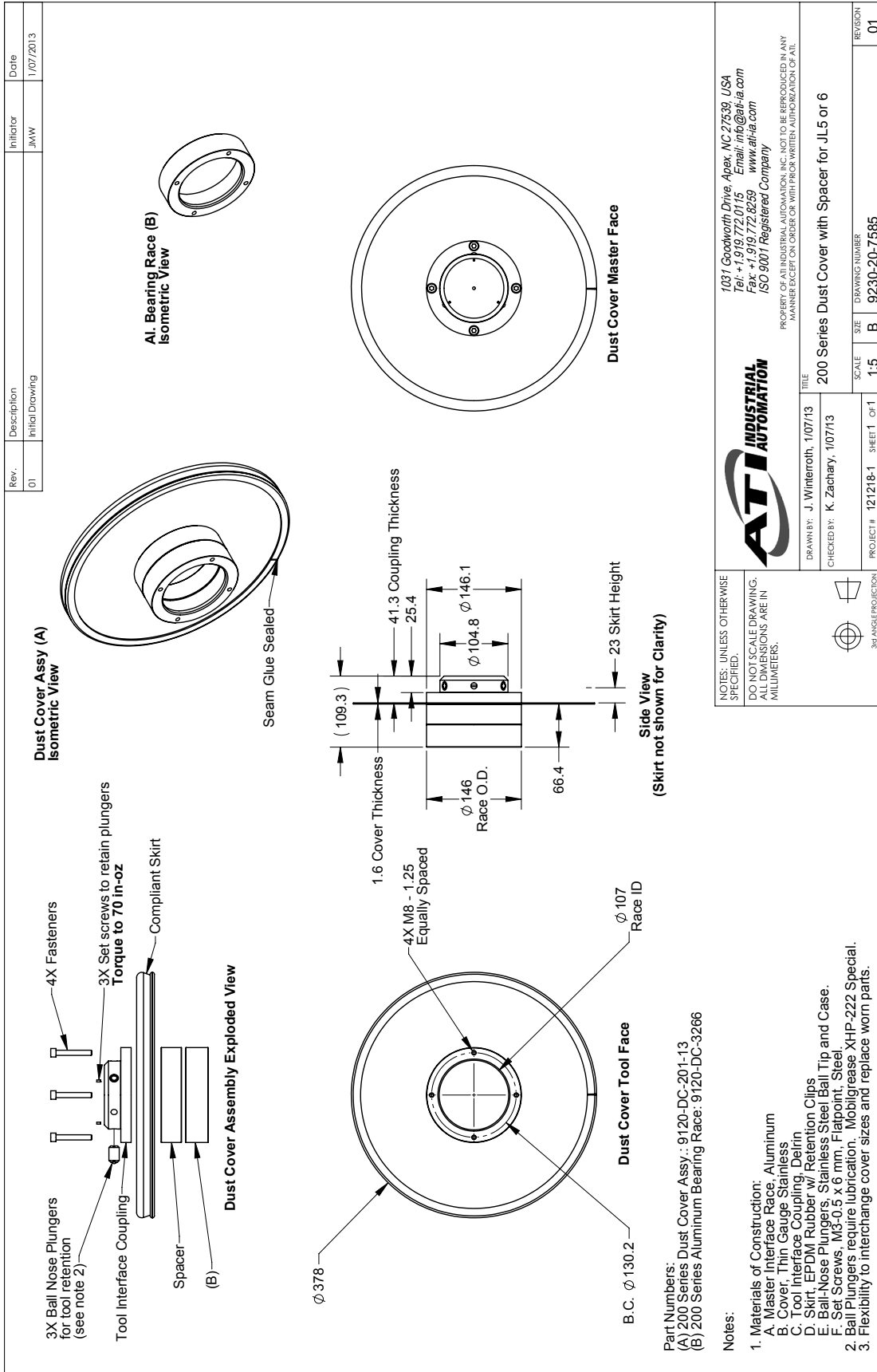
NOTES: UNLESS OTHERWISE SPECIFIED
 DO NOT SCALE DRAWING. DRAWN IN SOLIDWORKS
 ALL DIMENSIONS ARE IN MILLIMETERS.

30° ANGLE PROJECTION

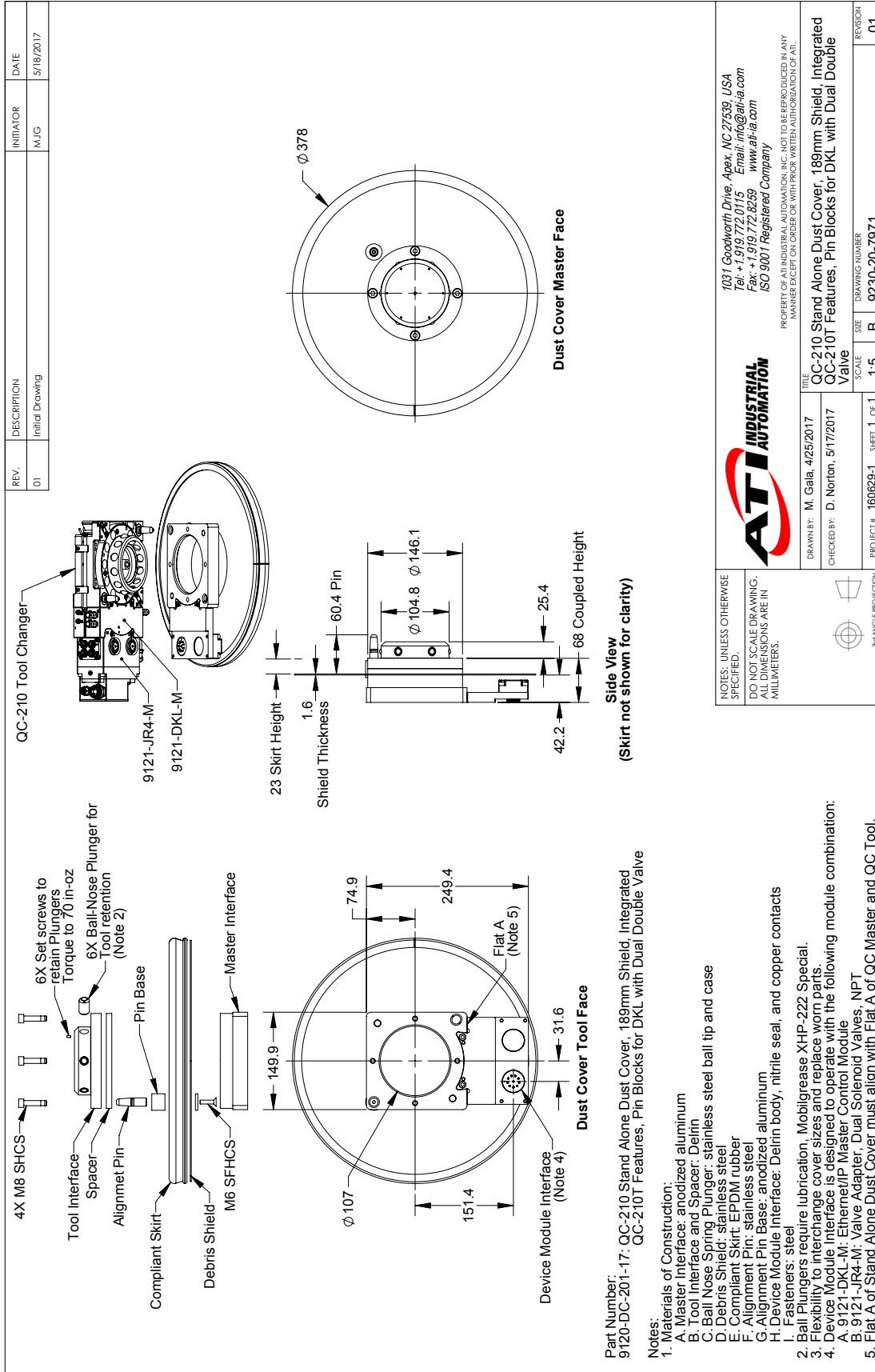
8.10 QC-200 Series Stand Alone Cover, Alignment Pin & Boss



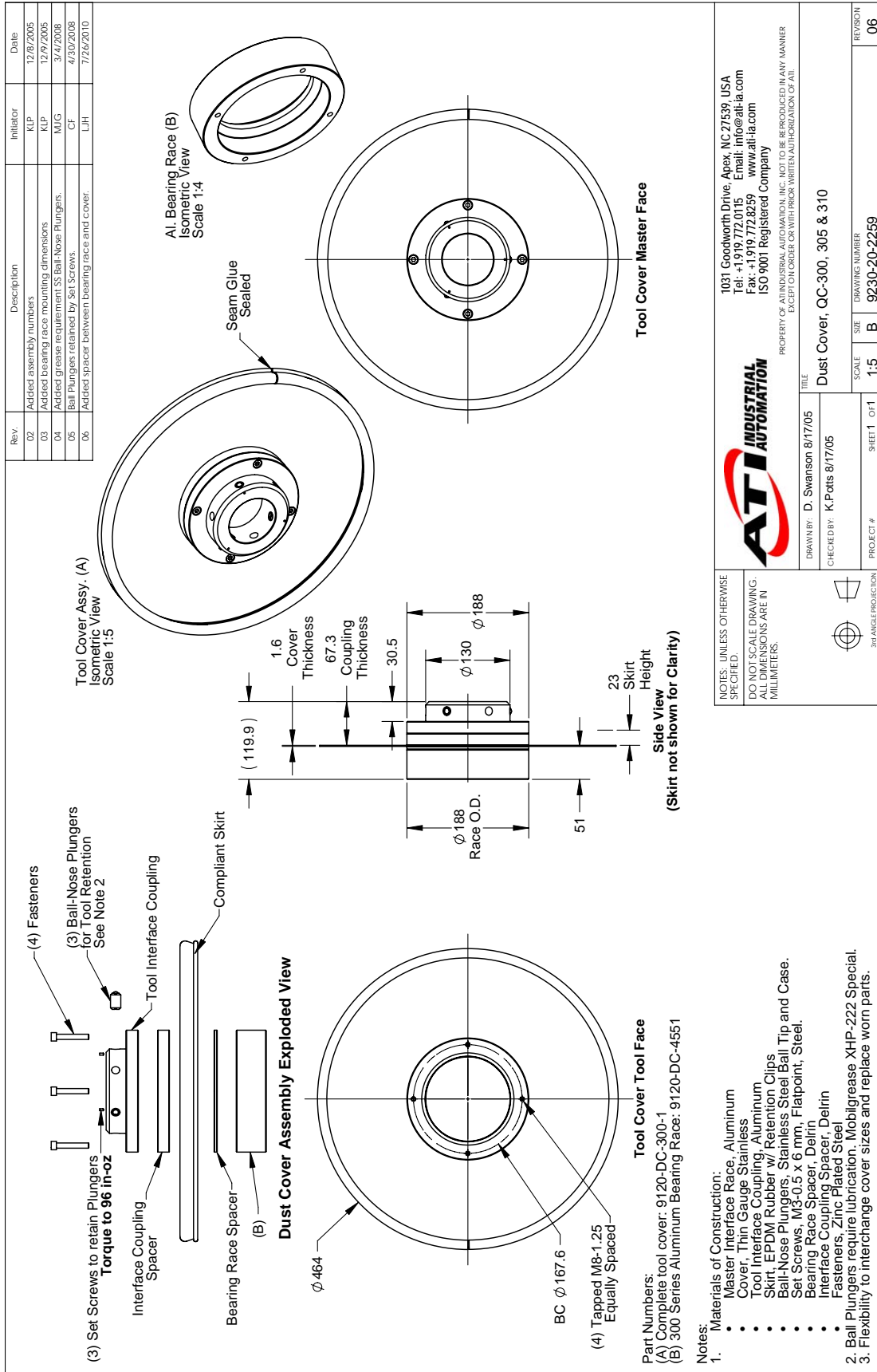
8.11 QC-200 Series Stand Alone Dust Cover, Spacer for JL5 or 6



8.12 QC-210 Stand Alone Dust Cover, 189 mm Shield



8.13 QC-300, 305, and 310 Dust Cover



Rev.	Description	Initiator	Date
02	Added assembly numbers	KLP	12/8/2005
03	Added bearing race mounting dimensions	KLP	12/9/2005
04	Added grease requirement SS Ball-Nose Plungers.	MJC	3/4/2008
05	Ball Plungers retained by Set Screws	CF	4/10/2008
06	Added spacer between bearing race and cover.	LJH	7/16/2010

ATI INDUSTRIAL AUTOMATION

1031 Goodworth Drive, Apex, NC 27539, USA
 Tel: +1 919 772 0115 Email: info@ati-ia.com
 Fax: +1 919 772 8239 www.ati-ia.com
 ISO 9001 Registered Company

PROPERTY OF ATI INDUSTRIAL AUTOMATION, INC. NOT TO BE REPRODUCED IN ANY MANNER EXCEPT ON ORDER OR WITH PRIOR WRITTEN AUTHORIZATION OF ATI.

ATI INDUSTRIAL AUTOMATION

DRAWN BY: D. Swanson 8/17/05
 CHECKED BY: K.Potts 8/17/05

Dust Cover, QC-300, 305 & 310

SCALE 1:5
 DRAWING NUMBER 9230-20-2259

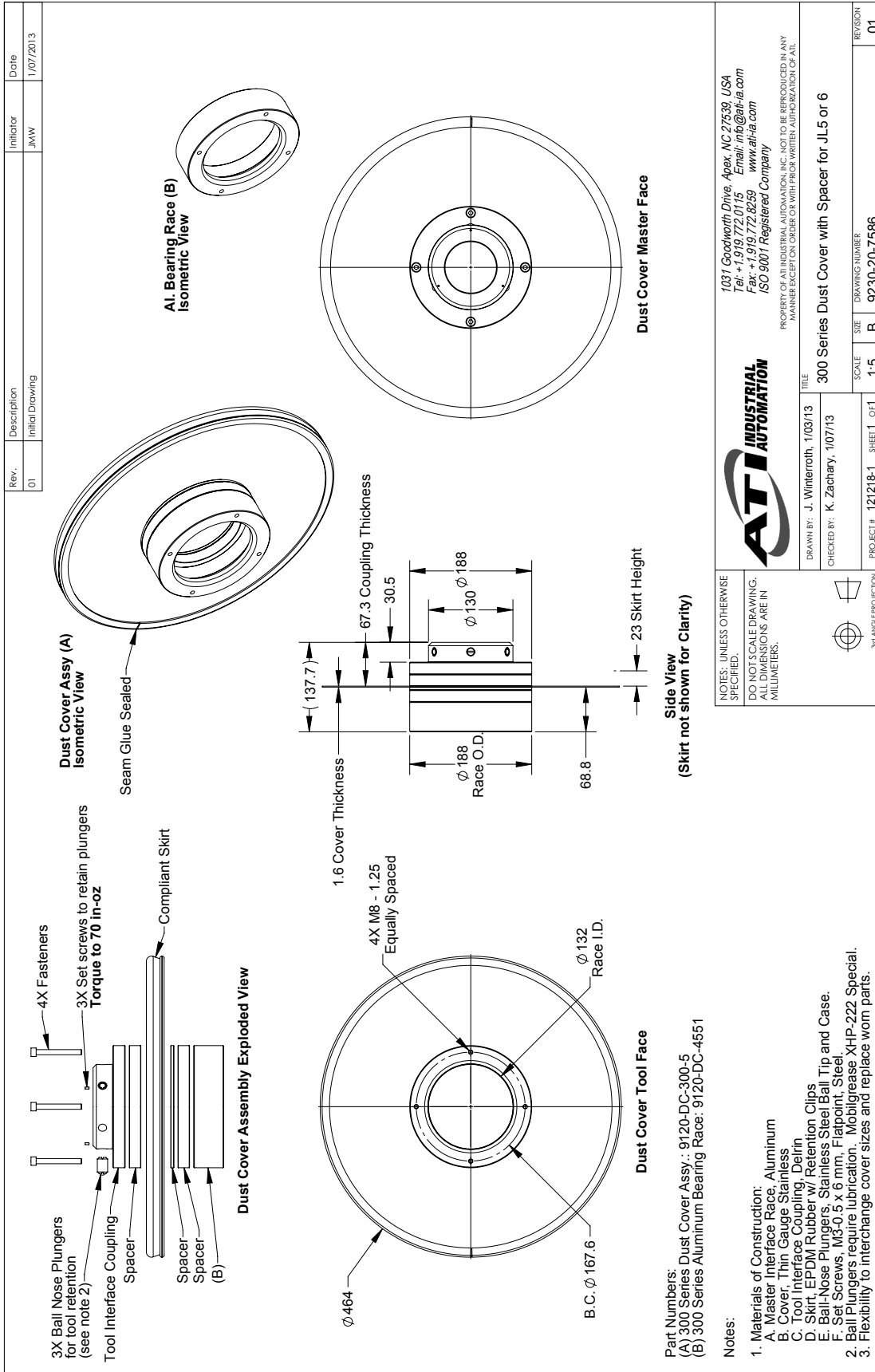
PROJECT # SHEET 1 OF 1

REVISION 06

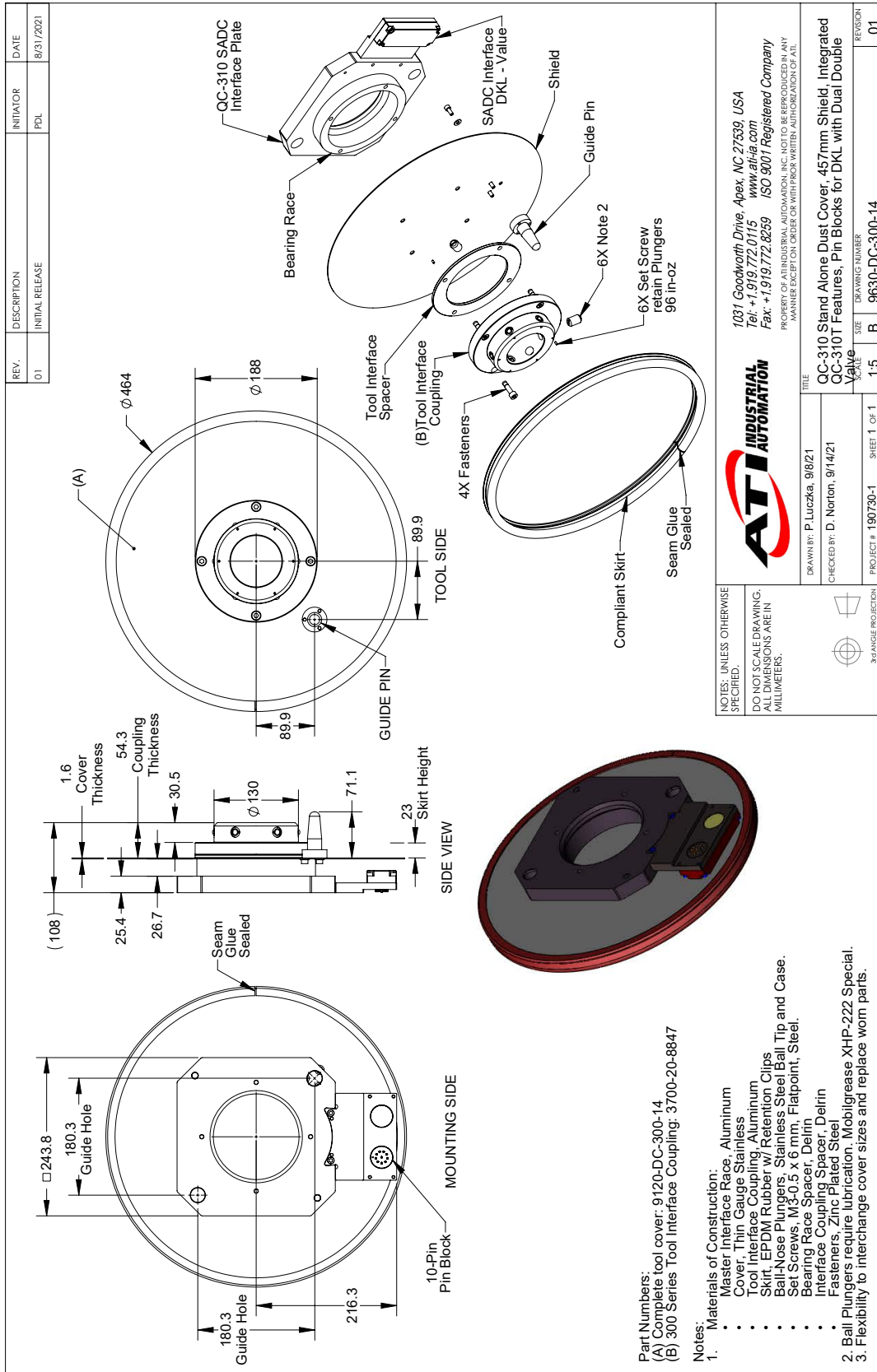
NOTES: UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS.

30° ANGLE PROJECTION

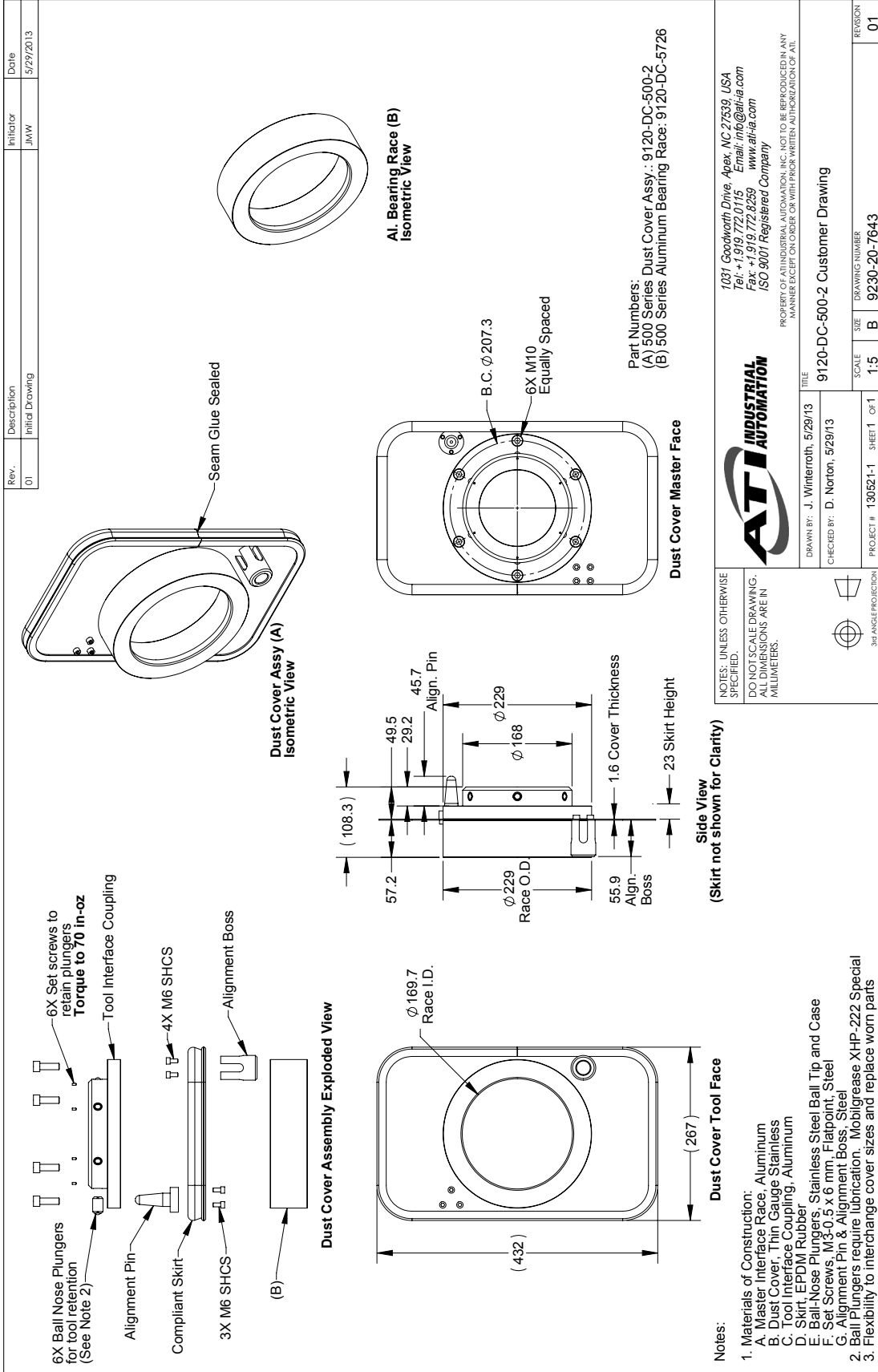
8.14 QC-300 Series Dust Cover with Spacer for JL5 or 6



8.15 QC-310 Stand-alone Cover, Version 9120-DC-300-14



8.16 QC-500 Stand-alone Cover - Rectangular



NOTES: UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS.

3RD ANGLE PROJECTION

ATI INDUSTRIAL AUTOMATION

1031 Goodworth Drive, Apex, NC 27539, USA
 Tel: +1 919 772 0115 Email: info@ati-ia.com
 Fax: +1 919 772 8259 www.ati-ia.com
 ISO 9001 Registered Company

PROPERTY OF ATI INDUSTRIAL AUTOMATION, INC. NOT TO BE REPRODUCED IN ANY MANNER EXCEPT ON ORDER OR WITH PRIOR WRITTEN AUTHORIZATION OF ATI.

TITLE: 9120-DC-500-2 Customer Drawing

DRAWN BY: J. Winterroth, 5/29/13
 CHECKED BY: D. Norton, 5/29/13

SCALE: 1:5
 SIZE: B

PROJECT #: 130521-1 SHEET 1 OF 1
 DRAWING NUMBER: 9230-20-7643
 REVISION: 01

8.17 QC-500 Stand-alone Cover - Round

