

Stamp Well User Guide

Version 3.1
May 11, 2021
Part No. 22200603

for use with:

Stamp Well Station, PN 22295750



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Front matter

Revision notes

Date	Version	Notes
03/18/15	1.0	Initial document.
10/21/15	2.0	Clarify adjusting thickness of material layer details. Add illustrations. Touch pad maximum height increased. Maintenance update.
09/28/16	3.0	Replace model PN 22295705 content with content for smaller footprint model PN 22295750. New model adapted to both DS Series and MAX Series.
05/11/21	3.1	Replace assembly drawing and schematic with updated version.

Warranty

General Warranty. Subject to the remedy limitation and procedures set forth in the Section “Warranty Procedures and Remedy Limitations,” GPD Global warrants that the system will conform to the written description and specifications furnished to Buyer in GPD Global’s proposal and specified in the Buyer’s purchase order, and that it will be free from defects in materials and workmanship for a period of one (1) year. GPD Global will repair, or, at its option, replace any part which proves defective in the sole judgment of GPD Global within one (1) year of date of shipment/invoice. Separate manufacturers’ warranties may apply to components or subassemblies purchased from others and incorporated into the system. THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Limitations. GPD Global reserves the right to refuse warranty replacement, where, in the sole opinion of GPD Global the defect is due to the use of incompatible materials or other damages from the result of improper use or neglect.

This warranty does not apply if the GPD Global product has been damaged by accident, abuse, or has been modified without the written permission of GPD Global.

Items considered replaceable or rendered unusable under normal wear and tear are not covered under the terms of this warranty. Such items include fuses, lights, filters, belts, etc.

Warranty Procedures and Remedy Limitations. The sole and exclusive remedy of the buyer in the event that the system or any components of the system do not conform to the express warranties stated in the Section “Warranties” shall be the replacement of the component or part. If on-site labor of GPD Global personnel is required to replace the non-warranted defective component, GPD Global reserves the right to invoice the Buyer for component cost, personnel compensation, travel expenses and all subsistence costs. GPD Global’s liability for a software error will be limited to the cost of correcting the software error and the replacement of any system components damaged as a result of the software error. In no event and under no circumstances shall GPD Global be liable for any incidental or consequential damages; its liability is limited to the cost of the defective part or parts, regardless of the legal theory of any such claim. As to any part claimed to be defective within one (1) year of date of shipment/invoice, Buyer will order a replacement part which will be invoiced in ordinary fashion. If the replaced part is returned to GPD Global by Buyer and found by GPD Global in its sole judgment to be defective, GPD Global will issue to Buyer a credit in the amount of the price of the replacement part. GPD Global’s acceptance of any parts so shipped to it shall not be deemed an admission that such parts are defective.

Specifications, descriptions, and all information contained in this manual are subject to change and/or correction without notice.

Although reasonable care has been exercised in the preparation of this manual to make it complete and accurate, this manual does not purport to cover all conceivable problems or applications pertaining to this machine.

Overview

The Stamp Well station presents a precise, adjustable, thickness of material. Typically, a stamp tool transfers the precisely presented material onto a substrate for die-attach or flip chip applications. A single Stamp Well can be used in combination with up to three pumps and/or stamp tools on a GPD Global MAX Series or DS Series dispense system.

Figure 1: Key aspects of Stamp Well station



1	material transfer area for stamp tool
2	blade arm
3	blade
4	rotating bowl
5	bowl rotation speed control

Scope of Supply

The Stamp Well station includes:

- Stamp Well - PN 22295750
- Stamp Well User Guide - PN 22200603

Safety & Performance Notes

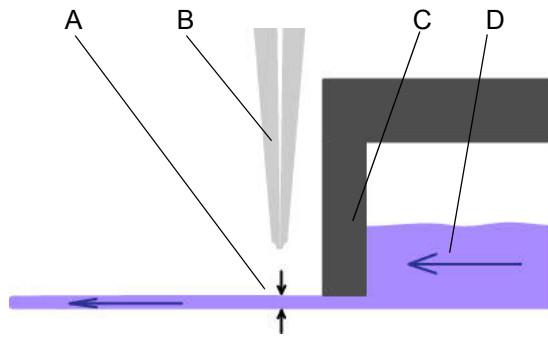
CAUTION: Keep all blade and bowl locating surfaces free of contamination. Even extremely small debris can dramatically change the material layer dimension or damage hardware by causing contact between the blade and bowl.

CAUTION: Due to the precision clearance that exists between the blade edge and the floor surface of the bowl, contact between the blade and bowl must be avoided to prevent inconsistent or unusable material layer thickness and hardware damage.

Theory of Operation

1. The Stamp Well bowl (Figure 1, Item 4) rotates under a blade (Figure 1, Item 3).
2. As the bowl rotates, the majority of the material in the bowl collects against the blade (Figure 2, Item D).
3. The remaining material passes under the blade and is reduced to a desired thickness over a short distance (Figure 1, Item 1 and Figure 2, Item A). This area is where the stamp tool contacts the material.
4. Material thickness is measured from the floor of the bowl and controlled by adjusting blade height and bowl rotation speed.
5. Bowl rotation speed is adjustable. Note the speed control knob (Figure 1, Item 5).
6. IO control set up in the dispense program allows you to start and stop bowl rotation as needed.

Figure 2: The blade restricts material, making a precise thickness of material available for a tool.



A	area of controlled material thickness
B	stamp tool
C	blade
D	material

Leveling Stamp Well Station

The adjustable 3-point leveling system ensures the floor of the bowl is level so material thickness remains consistent. Low viscosity materials require precision bowl leveling.

Figure 3: Precision leveling may require adjusting three sets of leveling and locking screws



A	leveling screws
B	locking screws

To level and adjust the height of the bowl floor:

1. Decide which leveling screws require adjustment (Figure 3, Items A & B).
2. Turn the screw(s) as follows for the leveling point you want to adjust:
 - RAISE bowl floor - release locking screw and then turn leveling screw *clockwise*.
 - LOWER bowl floor - turn leveling screw *counterclockwise* and then tighten locking screw.



IMPORTANT: Do not over tighten the locking screws as this can cause deflection in the base plate.

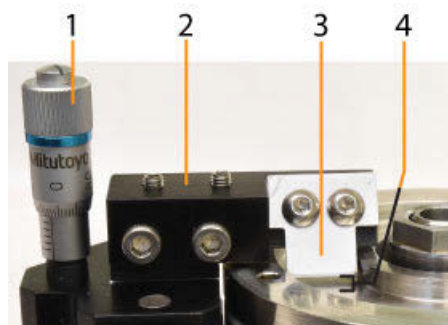
Set Up

- [Adjusting Thickness of Material Layer](#) (pg 4)
- [Adjusting Bowl Speed](#) (pg 4)
- [Zeroing Blade Height](#) (pg 5)

Adjusting Thickness of Material Layer

The precision micrometer enables you to adjust the gap (Figure 4, Item 4) between the bowl surface and the blade (Figure 4, Item 3).

Figure 4: Adjust material thickness with precision micrometer.



1	micrometer
2	blade arm
3	blade
4	gap between blade and bowl surface

To adjust blade height:

1. If not already done, perform [Zeroing Blade Height](#) (pg 5).
2. Adjust the micrometer (Figure 4, Item 1) until the blade arm (Figure 4, Item 2) raises/lowers to the height that results in desired material layer thickness.

! **IMPORTANT:** Exact material thickness should be determined by means other than the precision micrometer supplied with the Stamp Well station. The on-board micrometer is for reference only.

Adjusting Bowl Speed

Bowl Rotation Speed

! **IMPORTANT:** Materials of different viscosities may perform best at different speeds.

Turn the speed control knob as needed:

- Increase speed - turn knob clockwise.
- Decrease speed - turn knob counterclockwise.

Start/Stop Bowl Rotation

An I/O control allows you to start and stop bowl rotation as needed.

1. Enable and open Custom Ctrls.

NOTE: It is assumed you have read and understood all safety notices and instructions regarding the Custom Ctrls feature. For more details, refer to *Using Custom Controls* in the *Appendices: Machine Controls* section of the *FLOWare Software Guide*.

2. In the Custom Ctrls drop down menu, click on the toggle control button labeled **Stampwell Rotation Off**. Bowl rotation will immediately start/stop.

Zeroing Blade Height

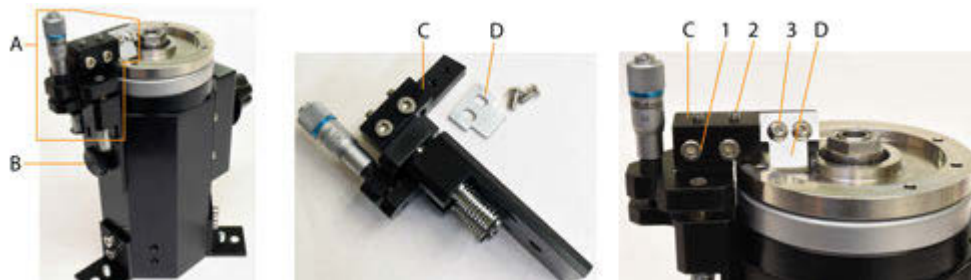
The blade assembly is a relative mount. Initially, the blade needs to be set to the zero position of the bowl surface, thereby zeroing the micrometer. After this initial zeroing process is performed, there is no need to repeat it. Thereafter, you can change blade height by just adjusting the micrometer.

- [Relative Mount Overview](#) (pg 5)
- [Tools Required](#) (pg 6)
- [Adjust Blade to Zero Position](#) (pg 6)

Relative Mount Overview

- The wiper blade (Figure 5, Item D) is fastened to a blade arm (Figure 5, Item C). Large clearance holes in the blade arm are used to mount the blade.
- Two screws (Figure 5, Item 3) secure the blade to the blade arm.
- Clearance holes allow limited blade movement (right, left, upward, and downward) when fixing the blade to the blade arm.
- The blade arm (Figure 5, Item C) mounts to the blade assembly (Figure 5, Item A) with two screws (Figure 5, Item 1) through a slotted clearance hole to allow angular adjustment and limited front-to-rear movement.

Figure 5: .Blade, Blade Arm, and Blade Assembly



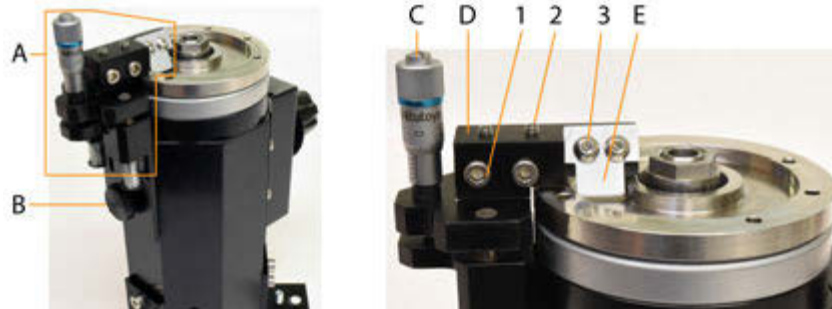
A	blade assembly
B	thumb screw
C	blade arm
D	blade
1	blade arm screw
2	blade arm set screw
3	blade screw

Tools Required

- 1.5 mm (1/16") allen key
- 2.0 mm (5/64") allen key
- 2.5 mm (3/32") allen key

Adjust Blade to Zero Position

Figure 6: Adjust blade and micrometer to zero position.



A	blade assembly
B	thumb screw
C	micrometer
D	blade arm
E	blade
1	blade arm screw
2	blade arm set screw
3	blade screw

To adjust blade height to zero position:

1. Loosen the thumb screw (Figure 6, Item B).
2. To be sure the blade arm (Figure 6, Item D) is seated properly, perform the [Install Blade Assembly](#) (pg 8) procedure.
3. After tightening the thumb screw, loosen the two blade screws (Figure 6, Item 3) using 2.0 mm (5/64") allen key.
4. Then loosen the blade arm screws (Figure 6, Item 1) using 2.5 mm (3/32") allen key.
5. Using 1.5 mm (1/16") allen key, back out the blade arm set screws (Figure 6, Item 2) until they turn freely.
6. Adjust the base of the blade so it comes into contact with the bowl surface.
7. Set the micrometer (Figure 6, Item C) to zero (0).
8. Screw the two set screws (Figure 6, Item 2) downward until resistance occurs.
9. Tighten the two blade arm screws (Figure 6, Item 1).
10. Tighten the two blade screws (Figure 6, Item 3).

Maintenance

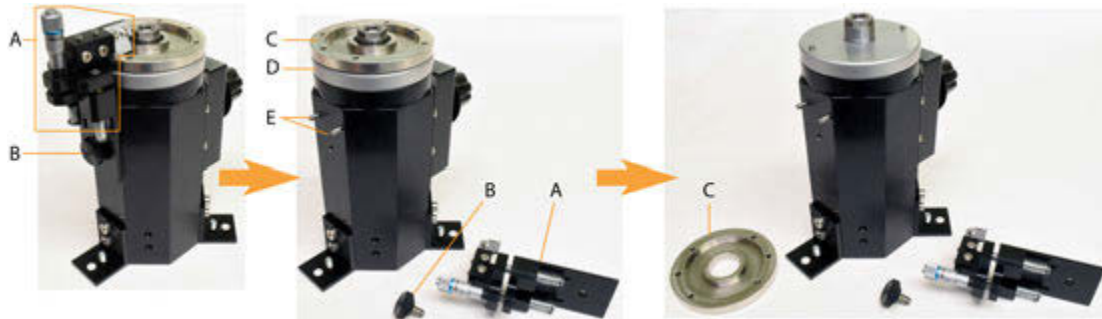
The ease-of-cleaning feature is an important aspect of the Stamp Well. The unit is easy to disassemble and reassemble and requires no readjustment after cleaning. The blade assembly can be removed without affecting blade position.

- [Cleaning Bowl](#) (pg 7)
- [Remove Blade Assembly](#) (pg 8)
- [Install Blade Assembly](#) (pg 8)
- [Replacing Blade](#) (pg 9)
- [Inspecting Main Bearing](#) (pg 10)

Cleaning Bowl

SUGGESTION: Use a different bowl (Figure 7, Item C) for each type of material to be presented by the Stamp Well station.

Figure 7: .Simple Disassembly to Clean Bowl



A	blade assembly
B	thumb screw
C	bowl
D	magnetic base
E	locating pins

To clean the rotating bowl:

1. [Remove Blade Assembly](#) (pg 8).
2. Remove the bowl by firmly gripping the bowl (Figure 7, Item C) and pulling it away from the magnetic base (Figure 7, Item D).
3. Clean the bowl.
4. Reassemble the bowl:
 - a. Verify all locating surfaces are free of debris and other contamination.
 - b. Align the bowl with the locating pins on the magnetic base to fully seat the bowl on the magnetic base.
5. [Install Blade Assembly](#) (pg 8).

Remove Blade Assembly

To remove the blade assembly from the Stamp Well station:

1. Remove the thumb screw (Figure 7, Item B).
2. Remove the blade assembly (Figure 7, Item A) from the two locating pins (Figure 7, Item E).

Install Blade Assembly

To install the blade assembly on the Stamp Well station:

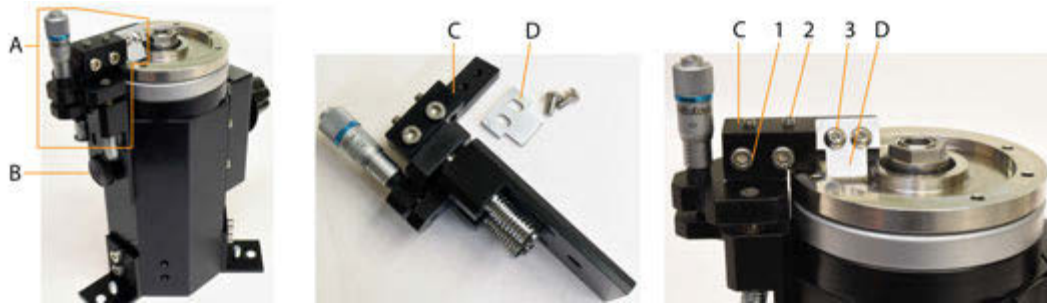
1. Align the blade assembly (Figure 7, Item A) on the two locating pins (Figure 7, Item E).
2. Firmly press down on the blade assembly so the top of its slots rest solidly on the station locating pins. Also ensure the blade arm rests evenly across both the hub and outer rim of the bowl.



3. Lock the blade assembly in place with the thumbscrew.

Replacing Blade

Figure 8: .Blade, Blade Arm, and Blade Assembly



A	blade assembly
B	thumb screw
C	blade arm
D	blade
1	blade arm screw
2	blade arm set screw
3	blade screw

Tool Required

2.0 mm (5/64") allen key

Mount or Replace Blade

To mount or replace the wiper blade:

1. Remove the blade assembly (Figure 8, Item A):
 - a. Remove the thumb screw (Figure 8, Item B).
 - b. Remove the blade assembly from the two locating pins (Figure 7 on pg 7, Item E).
2. Remove the blade (Figure 8, Item D) and blade screws (Figure 8, Item 3) from the blade arm (Figure 8, Item C) using 2.0 mm (5/64") allen key.

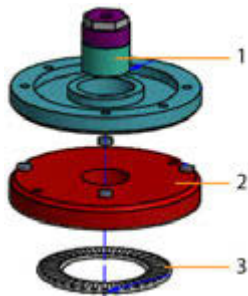
Inspecting Main Bearing

The main bearing carries the bowl on its rotation plane. The plane of rotation is critical in maintaining a consistent, accurate layer of working material.

CAUTION: The following areas **must be kept clean and free of foreign particles at all times:** bearing pocket, bearing components, and mating surface on underside of bowl. Any form of contamination that causes this rotation plane to be inconsistent may result in failure, damage, or an unsatisfactory layer thickness of working material.

For additional reference details, refer to [22295750 Mechanical Drawing](#) (pg 12).

Figure 9: Inspecting main bearing.



1	coupler
2	bearing interface
3	bearing

To clean the bearing area:

1. Loosen the coupler (Figure 9, Item 1).
2. Pull off the bearing interface (Figure 9, Item 2)
3. Inspect the bearing (Figure 9, Item 3).
4. If the bearing needs cleaning:
 - a. Keep the outside surfaces of the thrust washers as dry as possible.
 - b. Use a mild solvent and soft, lint-free cloth to clean all surfaces.
 - c. After cleaning, apply 5 to 10 drops of a light lubricating oil to the roller section of the bearing.
5. Slide the bearing interface back into place.
6. Tighten the coupler.

Specifications

Material layer thickness	0.001" - 0.010" (0.025 - 0.254 mm)
Bowl rotation speed	2 - 18 RPM
Stamp area diameter	11.5 mm (0.45")
Dimensions	136 mm x 107 mm (5.4" x 4.2")

Consumable Parts

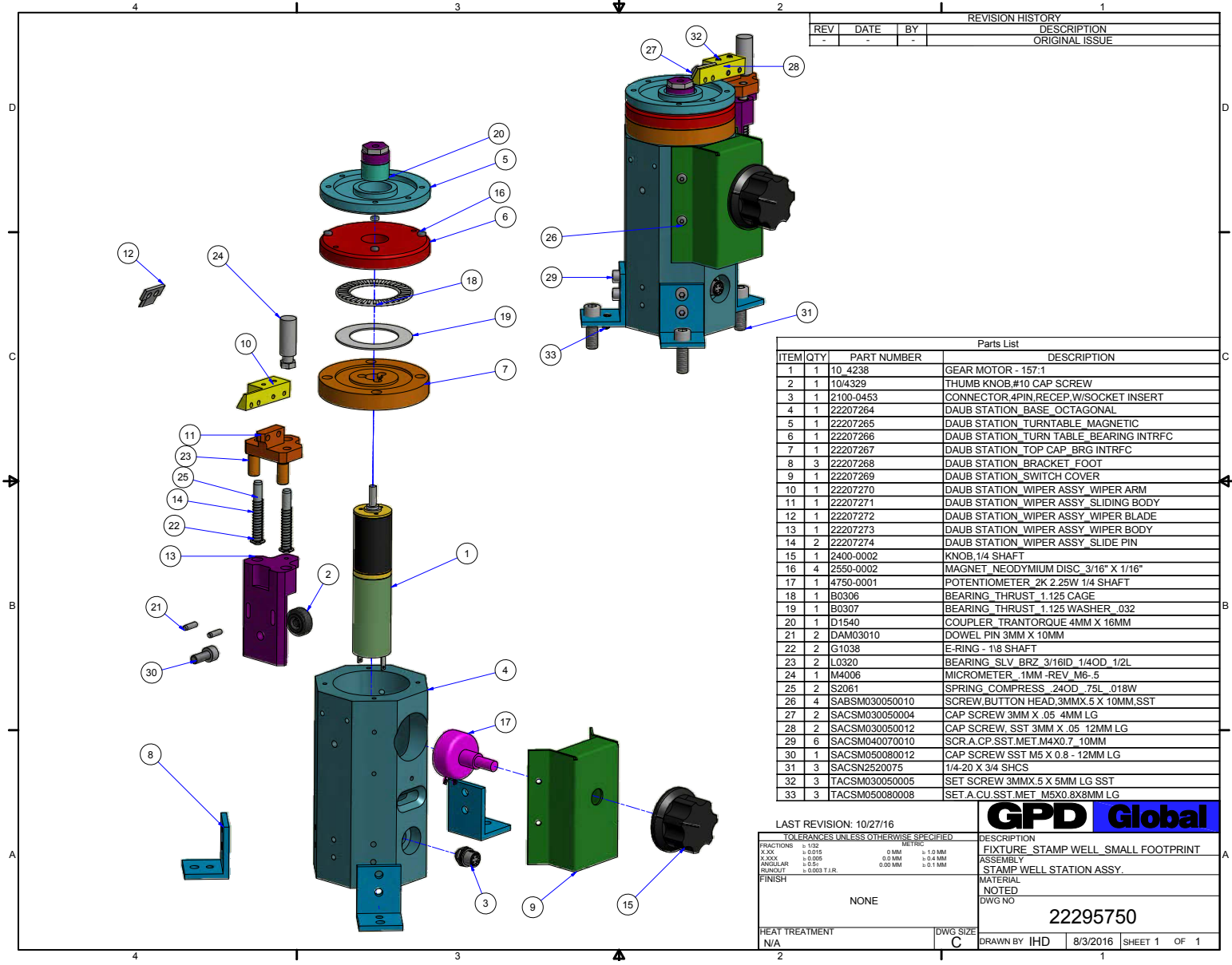
Rotating bowl PN 22207265.
Refer to Item 5 on [22295750 Mechanical Drawing](#) (pg 12).

Wiper blade PN 22207272.
Refer to Item 12 on [22295750 Mechanical Drawing](#) (pg 12).

References

- [22295750 Mechanical Drawing](#) (pg 12)
- [22295750 Electrical Schematic](#) (pg 13)

22295750 Mechanical Drawing

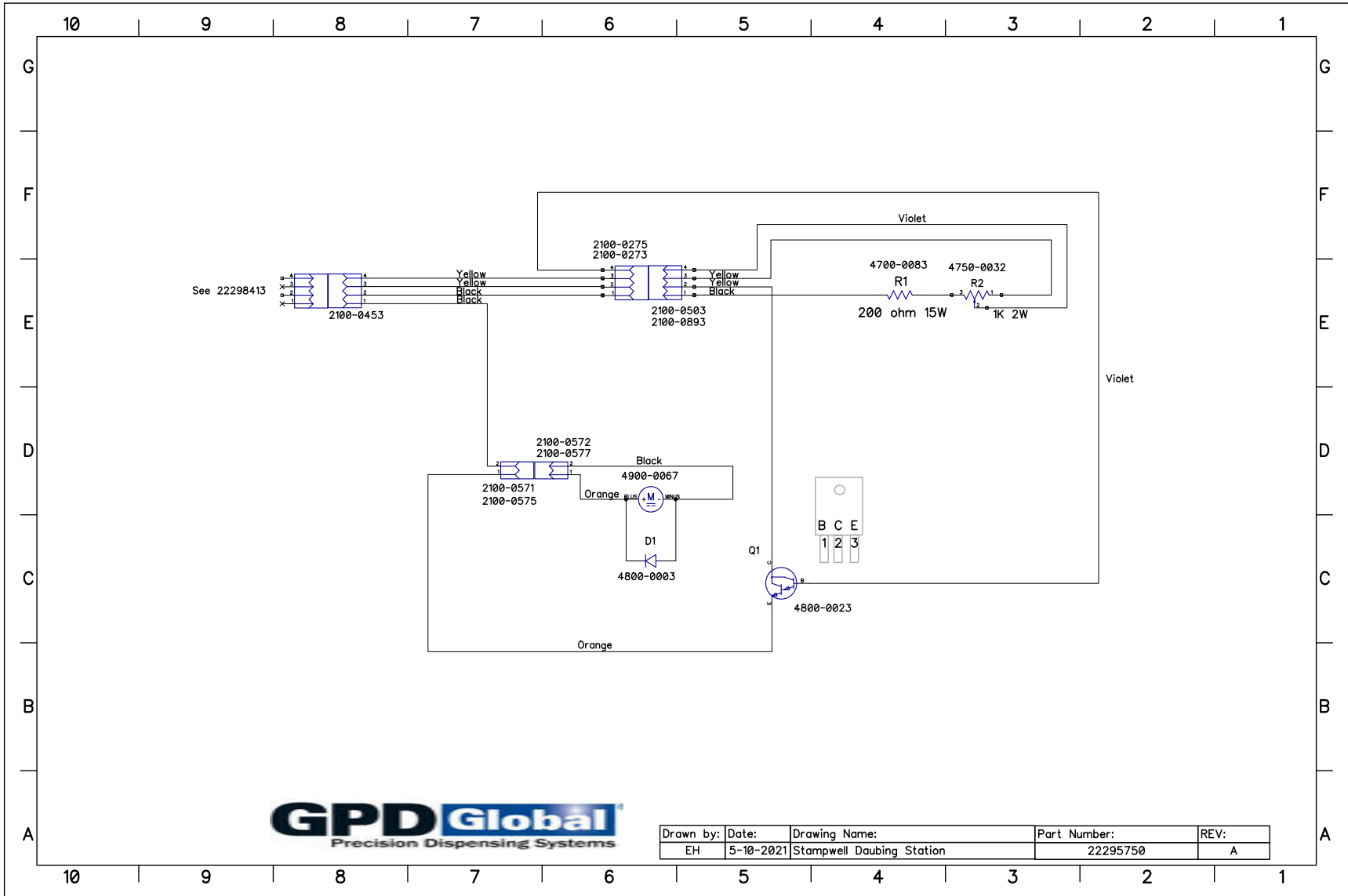


REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
-	-	-	ORIGINAL ISSUE

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10 4238	GEAR MOTOR - 157.1
2	1	10/4329	THUMB KNOB #10 CAP SCREW
3	1	2100-0453	CONNECTOR 4PIN RECP W/SOCKET INSERT
4	1	22207264	DAUB STATION BASE OCTAGONAL
5	1	22207265	DAUB STATION TURNABLE MAGNETIC
6	1	22207266	DAUB STATION TURN TABLE BEARING INTRFC
7	1	22207267	DAUB STATION TOP CAP BRG INTRFC
8	3	22207268	DAUB STATION BRACKET FOOT
9	1	22207269	DAUB STATION SWITCH COVER
10	1	22207270	DAUB STATION WIPER ASSY WIPER ARM
11	1	22207271	DAUB STATION WIPER ASSY SLIDING BODY
12	1	22207272	DAUB STATION WIPER ASSY WIPER BLADE
13	1	22207273	DAUB STATION WIPER ASSY WIPER BODY
14	2	22207274	DAUB STATION WIPER ASSY SLIDE PIN
15	1	2400-0002	KNOB 1/4 SHAFT
16	4	2550-0002	MAGNET NEODYMIUM DISC 3/16" X 1/16"
17	1	4750-0001	POTENTIOMETER 2K 2.25W 1/4 SHAFT
18	1	B0306	BEARING THRUST 1.125 CAGE
19	1	B0307	BEARING THRUST 1.125 WASHER .032
20	1	D1540	COUPLER TRANTORQUE 4MM X 16MM
21	2	DAM03010	DOWEL PIN 3MM X 10MM
22	2	G1038	E-RING - 1/8 SHAFT
23	2	L0320	BEARING_SLV_BRZ 3/16ID_1/4OD_1/2L
24	1	M4006	MICROMETER .1MM-REV_M6-.5
25	2	S2061	SPRING COMPRESS .24OD .75L .018W
26	4	SABSM030050010	SCREW.BUTTON HEAD,3MMX.5 X 10MM,SST
27	2	SACSM030050004	CAP SCREW 3MM X .05 4MM LG
28	2	SACSM030050012	CAP SCREW_SST 3MM X .05 12MM LG
29	6	SACSM040070010	SCR.A.CP.SST.MET M4X0.7 10MM
30	1	SACSM050080012	CAP SCREW_SST M5 X 0.8 - 12MM LG
31	3	SACSN2520075	1/4-20 X 3/4 SHCS
32	3	TACSM030050005	SET SCREW 3MMX.5 X 5MM LG SST
33	3	TACSM050080008	SET.A.CU.SST.MET M5X0.8X8MM LG

LAST REVISION: 10/27/16		GPD Global
TOLERANCES UNLESS OTHERWISE SPECIFIED		
FRACTIONS ± .125 DECIMALS ± .015 ANGULAR ± .005 FINISH ± .0003 T.R.		DESCRIPTION FIXTURE STAMP WELL SMALL FOOTPRINT ASSEMBLY STAMP WELL STATION ASSY. MATERIAL NOTED DWG NO 22295750
NONE		
HEAT TREATMENT N/A	DWG SIZE C	DRAWN BY IHD 8/3/2016 SHEET 1 OF 1

22295750 Electrical Schematic



Drawn by:	Date:	Drawing Name:	Part Number:	REV:
EH	5-10-2021	Stampwell Daubing Station	22295750	A