

2025-2026 Field Mitigation Guide

This guide includes some potential issues which can occur with the 2025-2026 *FIRST* Tech Challenge competition field and the recommended mitigation measures field staff can take if they occur. The intent of this guide is to provide guidance to volunteers and events so they can ensure a fair and consistent experience for all competing teams.

TOP TIP: Before performing any mitigation fixes, ensure the FIELD is assembled correctly. Reference: the CAD file and other FIELD resources available at ftc.game/field

1: A FIELD component is visibly damaged or defective.

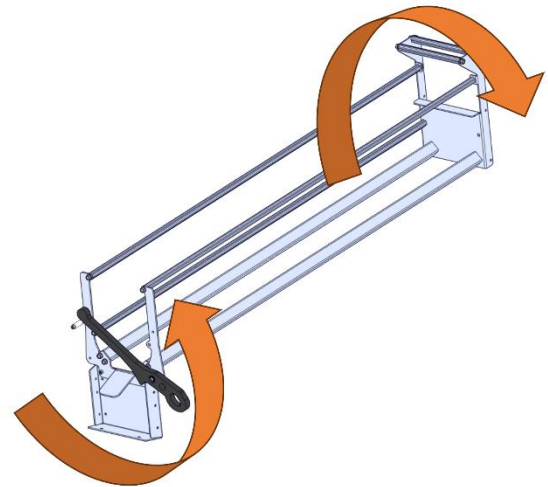
Mitigation 1.1: To troubleshoot any FIELD build issues, to resolve potential defects, or to purchase replacement components, it is recommended to contact [AndyMark Customer Service](#).

2: A RAMP is visibly twisted.

If the RAMP is twisted, it may impede the way ARTIFACTS roll, it may cause issues with the GOAL mounting, and it may affect the function of the GATE.

Mitigation 2.1 – On the FIELD (Not during a MATCH): Two people can quickly correct the RAMP “twist.” One person should grip the top part of the lower RAMP (by the SQUARE), while the other person grips the bottom part (by the GATE.) The person holding the top of the RAMP should hold it in place while the other person applies torque to the bottom of the RAMP to try to “tweak” the assembly, so it is straight.

Mitigation 2.2 – Off the FIELD: This problem can also be addressed while the GOAL and RAMP have been disassembled into their “transport” configuration (as outlined in Section 12 of the Event FIELD Setup Guide). After placing the RAMP on a level surface (not the FIELD), if the RAMP doesn't sit level: slightly loosen each of the screws that are threaded into the Churro extrusions, re-level the RAMP, and re-tighten all the screws to prevent any twist (or torque) in the RAMP.

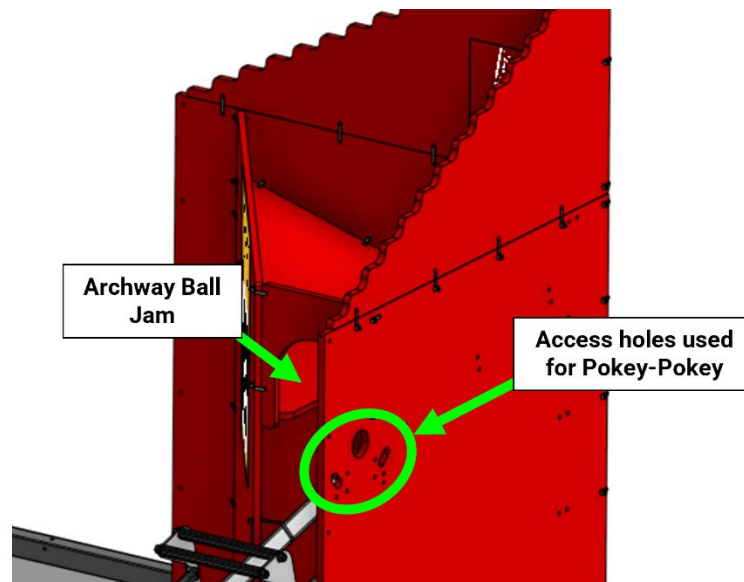


3: ARTIFACTS catch on the archway causing a bottleneck which plugs the GOAL.

This issue has not been able to be consistently reproduced during testing and seems to occur “randomly” at a low rate. If this issue repeatedly occurs on a specific FIELD, it is likely there is something wrong with the FIELD assembly.



Mitigation 3.1 – During the MATCH: If this jam is identified shortly after it occurs, FIELD staff may clear the jam by physically “poking” the ARTIFACTS. They should use every effort to minimize impact to gameplay while clearing the jam. If necessary, a pen or short stick can be inserted through the access holes on the side of the GOAL closest to the archway (see diagram below). This is sometimes referred to as the “pokey-pokey” method.



Mitigation 3.2: Do NOT trim the plastic on the archway. After confirming that the GOAL is correctly assembled, confirm the position of the archway has not shifted due to ROBOT impacts.

Mitigation 3.3: It is possible that when the cable tie shown below is over-tightened it can cause the archway to shift into an incorrect position or deform. If needed, replace/loosen the cable tie highlighted below.



Mitigation 3.4: It is also possible that this cable tie could be installed such that the cable tie head interferes with the ARTIFACT flow. If the cable tie head is in a position such that it can touch ARTIFACTS it should be replaced or repositioned.

4: GATE does not close on its own and/or sticks in the upright “open” position.

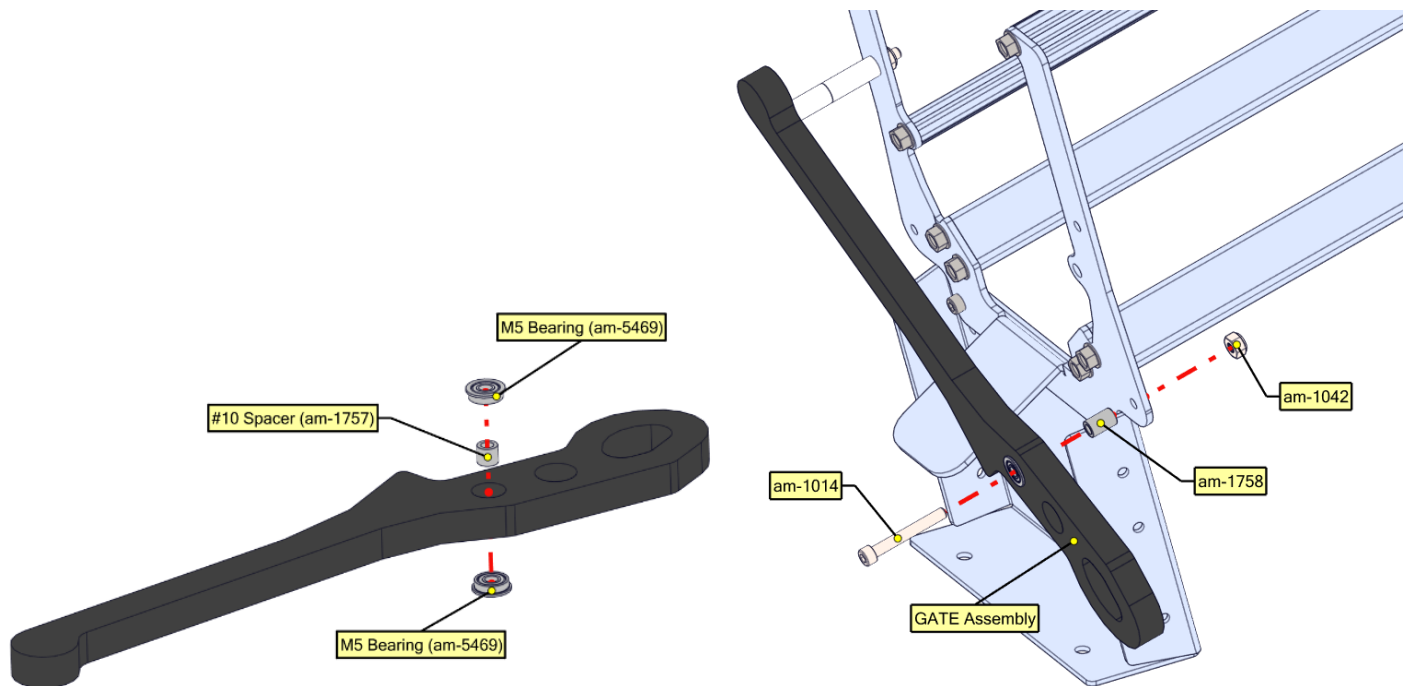
Mitigation 4.1 – After the MATCH: First, check whether the GATE is visually parallel to the end of the RAMP. If not, it is likely that the GATE being out of plane is what is causing the issue. In this situation, sometimes the GATE will catch on the metal RAMP structure and get stuck.

To fix this: first, ensure the bolt which serves as the GATE pivot is tightened correctly (a loose bolt could cause the GATE to wobble “out of plane.”) If the pivot is correctly tightened, inspect the GATE to see if any other damage is obvious. If nothing appears incorrect, bend the GATE back into position. One person can do this by grabbing the GATE arm with two hands -- gripping it nearby the pivot -- and applying torque to bend the GATE and surrounding structure until the GATE is in the correct position.

Mitigation 4.2 – After the MATCH: Check whether the GATE freely rotates by hand. The GATE should move with very little friction. If there is too much friction, confirm the GATE is not rubbing anything during its movement (the only contact points should be the ball bearings pressed into the GATE arm which rotate around the pivot bolt).

If there is no noticeable interference but still has too much friction, next it is important to check that the components are assembled correctly. Also confirm the pivot screw is tightened correctly – if this is over-tight it can cause increased drag.

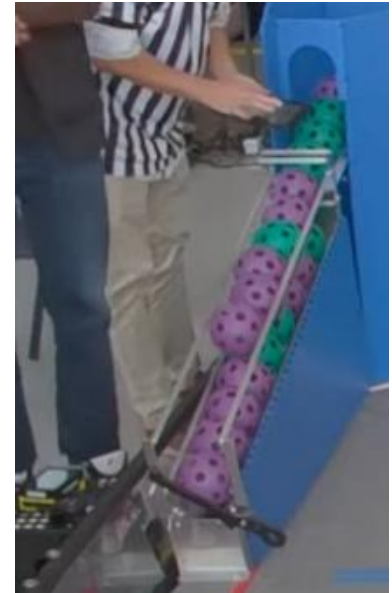
Next, check the bearings themselves to see if they spin freely or if they are damaged (make sure to check the full bearing rotation, since damage can occur in only one portion of the bearing.)



Mitigation 4.3: The GATE will not close if the center-of-gravity of the GATE arm is too close to the pivot. (The gate “balances” vertically). When this happens, it is often because the RAMP assembly is twisted (see Section 2, above) or because the FIELD is not level.

5: “OVERFLOW” ARTIFACTS stop rolling before they exit the RAMP causing a jam.

Mitigation 5.1 – During a MATCH: Do not immediately stop the MATCH. Most of the time when this happens, it can be fixed simply by a ROBOT opening the GATE. From the side of the FIELD, visually inspect the jam and try to determine if opening the GATE will fix the problem. If opening the GATE removes the jam, take no action except to inform the Head REFEREE that you believe this can be fixed by ROBOTS. If you do not believe ROBOTS can fix the jam by opening the GATE, inform the Head REFEREE accordingly so they may determine after the MATCH if the situation constitutes an ARENA FAULT.



NOTE: This situation is typically not considered an ARENA FAULT and would typically not fulfill the requirements for a MATCH replay as defined by T301. In this situation, it is possible that the line of blocked ARTIFACTS could “back up” high enough that new ARTIFACTS no longer pass through the SQUARE and no longer fulfill the requirements for CLASSIFIED or OVERFLOW points (until a ROBOT opens the GATE).

Mitigation 5.2 – After a MATCH: Ask teams, Field Reset volunteers, and other FIELD STAFF not to meddle with the ARTIFACTS, RAMP, or GATE. When appropriate, go onto the FIELD and open the GATE (simulating the way a ROBOT would do it) without obstructing the flow of the ARTIFACTS. Observe whether this cleared the jammed OVERFLOW ARTIFACTS. If so – report to the Head REFEREE that a ROBOT could have fixed the issue. If the jam did not clear – report to the Head REFEREE that a ROBOT could not have fixed the issue. The Head REFEREE will make all determinations regarding replays per T301.

Mitigation 5.3: During breaks between MATCHES, attempt to recreate the problem by checking item 2.4 of the [FIELD Acceptance Checklist](#). If the problem can be recreated, attempt to identify the area causing the problem. This could be due to an assembly issue with the GOAL or RAMP. This could be due to a twisted RAMP (see section 2, above). This could be due to damaged components of the RAMP or GOAL.

6: When a ROBOT rams into the GOAL, it “pops upward” and is not flat on the TILES.

Typically, when a GOAL is lifted in this manner, the front edge still meets the published specifications for FIELD Acceptance. This typically would not constitute an ARENA FAULT based on the criteria listed in T301.

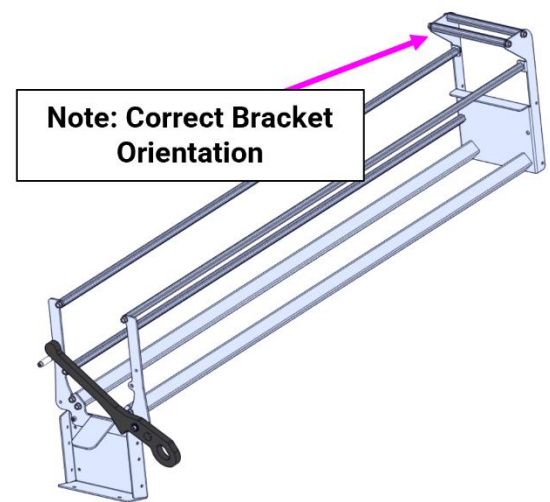
Mitigation 6.1: Usually, the GOAL will settle back down after it has been lifted. If the GOAL “sticks” up, a small amount of downward force should put the GOAL back into the correct location.

In some cases, the metal brackets which connect the GOAL to the FIELD perimeter will end up on top of the perimeter wall. If this happens, FIELD staff should reposition the GOAL such that the brackets correctly interface to the FIELD wall and then push the GOAL down into its correct location flat against the foam TILES.

7: ARTIFACTS get stuck in the SQUARE.

Mitigation 7.1: When this occurs, it is usually because there is some damage to the metal brackets which create a spot for ARTIFACTS to get stuck (usually this damage occurs when transporting the FIELD). Sometimes fixing this issue just requires bending the brackets by hand into the correct configuration.

Mitigation 7.2: If the bracket at the top of the lower RAMP is assembled backwards, it will cause ARTIFACTS to jam more frequently in the SQUARE. (See Section 5 of the [Initial FIELD Element Assembly Guide](#)). Ensure the RAMP is assembled correctly and no parts are defective or damaged (see Section 1, above.)



8: ARTIFACTS sometimes exit the GOAL in a different order than when they entered it.

Mitigation 8.1: None. This is not an issue which requires mitigation. The GOAL is not guaranteed to be first-in, first-out. TEAMS should adjust their scoring rate to ensure ARTIFACTS exit the GOAL in a specific order.

Revision History		
Revision	Date	Description
V25-26.1	11/5/2025	Initial Release