**NFPA FLUID POWER ACTION CHALLENGE – FLORIDA STATE TSA PILOT EVENT – 2021 (VIRTUAL)**

OVERVIEW:

The 2021 FL TSA Virtual Challenge will require teams of four students to work in school and submit their work electronically to be judged by the “host” – the NFPA Education and Technology Foundation.

The team of four (4) students will manufacture a working device powered by hydraulics (water) in a short period of time in a challenge environment at school on Saturday, February 27th.

Successful teams will have designed and tested a prototype device in the weeks beforehand, recording their progress and processes in a Portfolio-Notebook. They will know how they, as a team, will construct, engineer, and test their device on the day of the event. This year we are suggesting that each team member focus on a role in case of extreme circumstances.

There are many resources available including the specifications of the layout, a template for the Portfolio-Notebook, Rules, Rubrics and other documentation, and a students’ “Hints & Tips” guide to the materials - [Technology Student Association - Fluid Power Challenge (nfpahub.com)](https://nfpahub.com/fpc/action-challenge/getting-started/technology-student-association/)

It is strongly recommended that you review *the 20-21 In-School FPAC Procedures, Notes-for-Teacher-Advisors - virtual-TSA -2021 and 20-21 In-School Score Sheet.*

In addition to the virtual in-school resources (as in FL TSA 2021) the NFPA has another set of virtual resources for students working from home, should the need arise in 2021.

*Use the same link to apply for a $200 grant to cover the cost of kits and shipping.*

KITS: The link to *purchase* the kit for this virtual in-school challenge is

 [TSA FL VIRTUAL Challenge – 1 Team Kit | Mechanical Kits Ltd. - Fluid Power Kits](https://www.fluidpowerkits.com/product/tsa-fl-challenge-1-team-kit/)

TOOLS:

Permitted Tools:

Four safety glasses – one for each team member

Small hand saw for cutting wooden strips ⅜’ wide (small razor saw or small back saw)

Miter Box to hold wood in place while cutting and drilling

‘C’-clamp to hold miter box onto working surface

2 X Ruler; 2 X Scissors

*Note: the “virtual” kit has holes pre-drilled in base, platforms, and piston-syringes to reduce drilling needs*

Hand drill for drilling (Pistol Grip or vertical drill)

Recommended drill bits: 13/64” & 7/32”

Round File for cleaning holes

TIMELINE:

Recommended timeline:

Week 6 Lifter & Rotating Base introductory activities; exploration of materials

Week 5 Introduction the Challenge Initial ideas and team building including production timeline

Week 4 Building prototype, work on Portfolio-Notebook

Week 3 Building prototype, work on Portfolio-Notebook, double-check progress

Week 2 Building prototype, work on Portfolio-Notebook

Week 1 Final testing, finishing Portfolio-Notebook, organizing team members for the event