# FLANGE ASSEMBLY DEMONSTRATION UNIT (FADU) v2019 User Interface Software

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Printed Student Record

Practical Skill Assessment
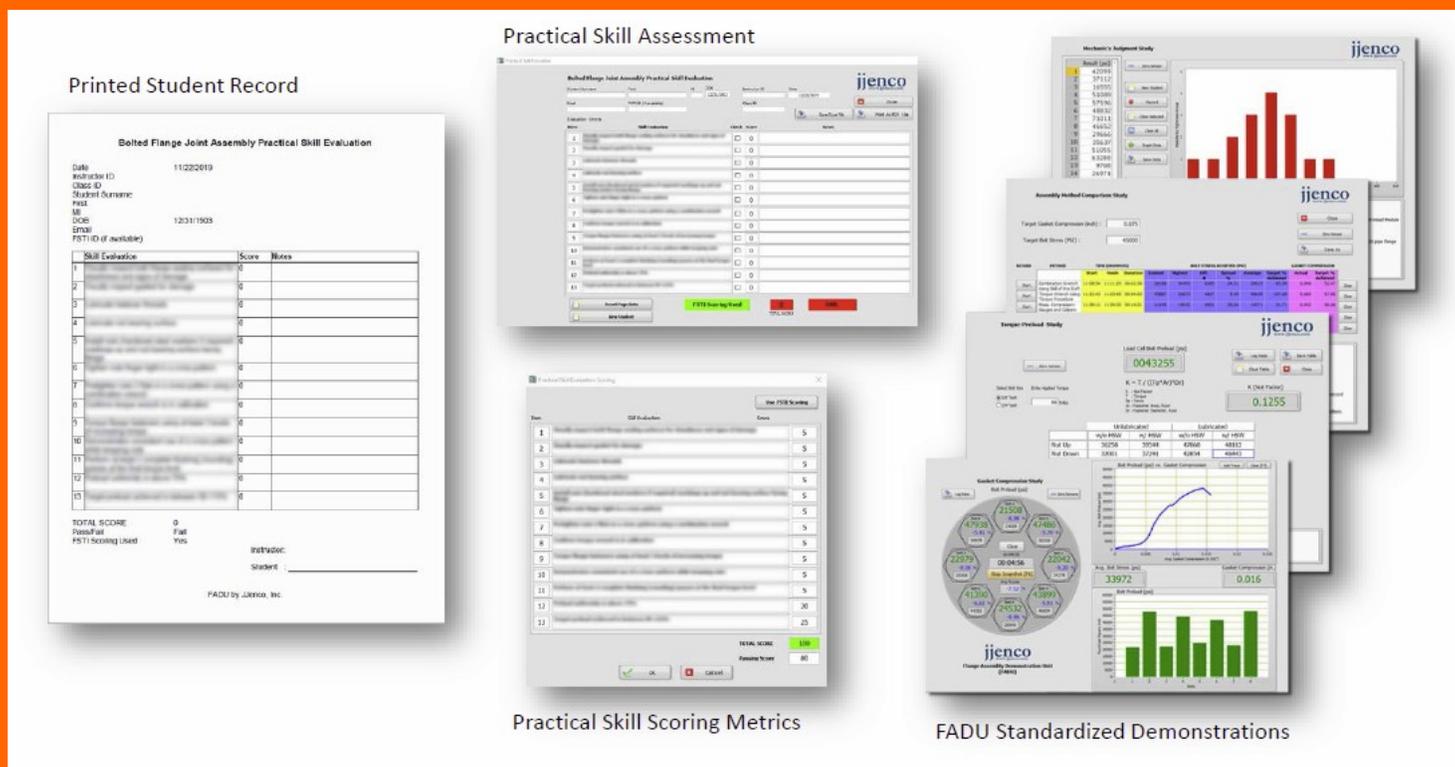
Practical Skill Scoring Metrics

FADU Standardized Demonstrations

Our v2019 software release continues to raise the bar for application and effectiveness of bolted flange joint assembly training software. The v2019 software continues to include our four core demonstration screens. The **Gasket Compression Study (GCS)** still appears as the default screen when launching the application, and is used primarily to illustrate the result of different assembly practices, as well as the performance of different gaskets. The GCS also enables instructors to show students the effects of gasket creep relaxation in real time. The **Torque-Preload Study (TPS)** is used primarily to illustrate factors that determine the resulting bolt preload achieved for an applied amount of torque., and is valuable for teaching about fastener lubrication and other assembly factors affected by friction. The **Assembly Method Comparison Study (AMCS)** is used to definitively illustrate the value of torque as the best manual assembly technique, as compared to mechanic's judgment using a standard combination wrench or measured compression of the gasket. The **Mechanic's Judgment Study (MJS)** is used primarily to illustrate differences between individuals of different skill levels and reinforce the need to follow procedures.

As before, the standard demonstration studies still perform automated calculations of important concepts, relieving the instructor of the need to do so, and display all data in real time. Sensors include individual bolt preload and gasket compression measurement. Data from any of the studies can be saved to a tab-delimited file as a test record or for later analysis in Excel or other software. Actual nut factors (K) are calculated automatically.

A major new feature in v2019 is the **Multi-Language Capability**. Now, in addition to already choosing to display data in either Metric or English units, and by bolt or gasket stress, international users can switch from the default English language selection to **German, Spanish, or Chinese** by simply selecting their preferred display language from the Options Menu**.** After selecting the preferred language, all menu items, software text, and labels are displayed in the new language. A 'Return To English' menu item always remains displayed in English. New languages can be easily added upon request.

Perhaps the most important new feature for v2019 is the included **Practical Skill Assessment** student testing functionality. Instructors use weighted scoring metrics of the Fluid Sealing Technology Institute, or change to their own, to establish the student Pass/Fail criteria. Through student observation, the instructor checks off each student skill step necessary to achieve a leak-tight joint. The FADU also sends total preload achieved and preload uniformity data to the scorecard, making a completely objective test result. PSA test results can be saved for each student. When combined with the results of a written knowledge test, Instructors now have a complete and objectively proven training record for each student.