

VCE^{Intelli} Joint V1.0 Software

The Complete PVP Bolted Joint Expert Solution Software

Stream-line your equipment assembly and eliminate joint leakage!

Every joint can be sealed permanently with the technology available today, and this smart software makes it easy to establish a pro-active, cost-saving "Leak-Free Program" in your plant.

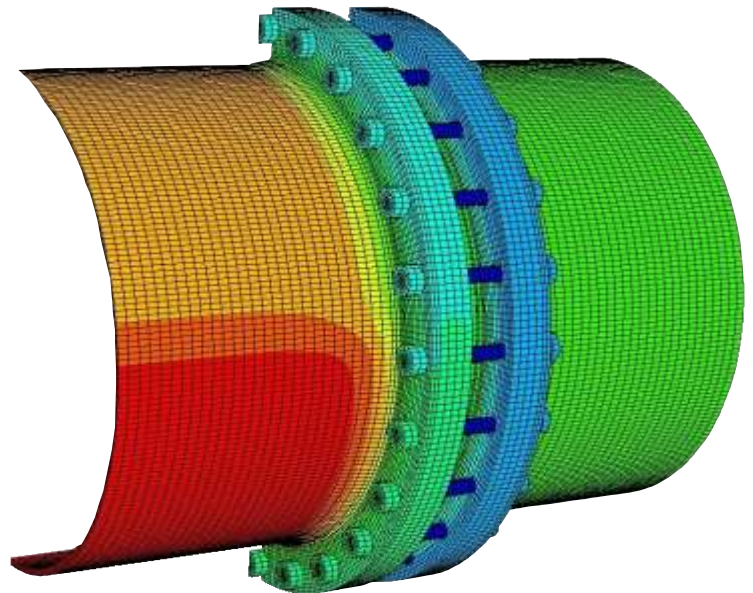
Designed specifically for operational plants, VCE^{Intelli} Joint™ software offers a total solution to bolted joint leakage that pays for itself with immediate reductions in maintenance expenditure. VCE^{Intelli} Joint is loaded with the latest advanced bolted joint technology, including assembly procedures and gasket test results. The program also gives access to industry best practice gasket specifications, and incorporates knowledge in all areas required to effectively identify the root cause of a leakage problem:

- Actual gasket behavior and modes of failure
- Effects of temperature on gasket, bolts and operational loads
- Real-world tested assembly procedures, methods and parameters

The Technical Edge: Software Analysis Capabilities

The VCE^{Intelli} Joint advantage pulls all activities into one central location, including:

- Joint Assembly Best Practices (time & effort reduction, improved performance)
- On-line Leak Repair
- Engineering (gasket selection, bolt load selection, troubleshooting)
- Joint Assembly QA
- Joint Assembly and Operation History Records
- Equipment calibration and certification tracking
- Personnel training and certification tracking



The software is designed to enable a seamless interface between engineering, maintenance and joint assembly and encapsulates years of experience from the leading edge of joint sealing technology.

High Level Technical Support

VCE^{Intelli} Joint was created and is maintained by Dr. Warren Brown, a renowned authority on practical solutions to joint leakage problems. Dr. Brown is actively involved in industry research on bolted joint leakage solutions, ensuring that all industry best-practices are included in the software. The Equity Engineering Group, Inc. (E²G) is an internationally recognized leader on aging infrastructure service and support and provides the most practical, cost-effective solutions for your plant. VCE^{Intelli} Joint continues that tradition.

Don't Wait for It to Happen - Call Today for Your Pro-Active Solution!

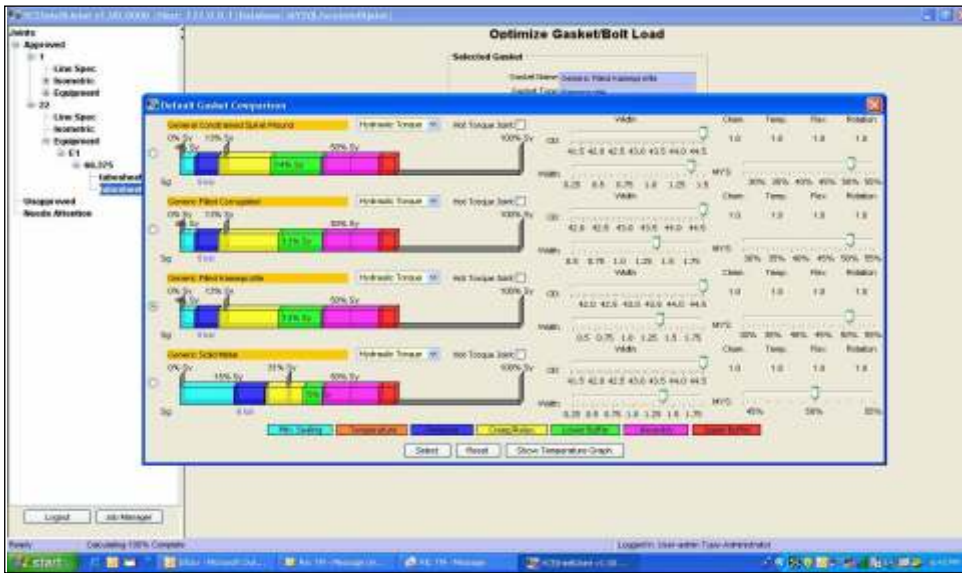
Call for information on technical support and consulting, including the Platinum Level Software/Consulting Package.
Dr. Warren Brown 216-658-4757 or iwbrown@equityeng.com

Smart Technology for Aging Infrastructure

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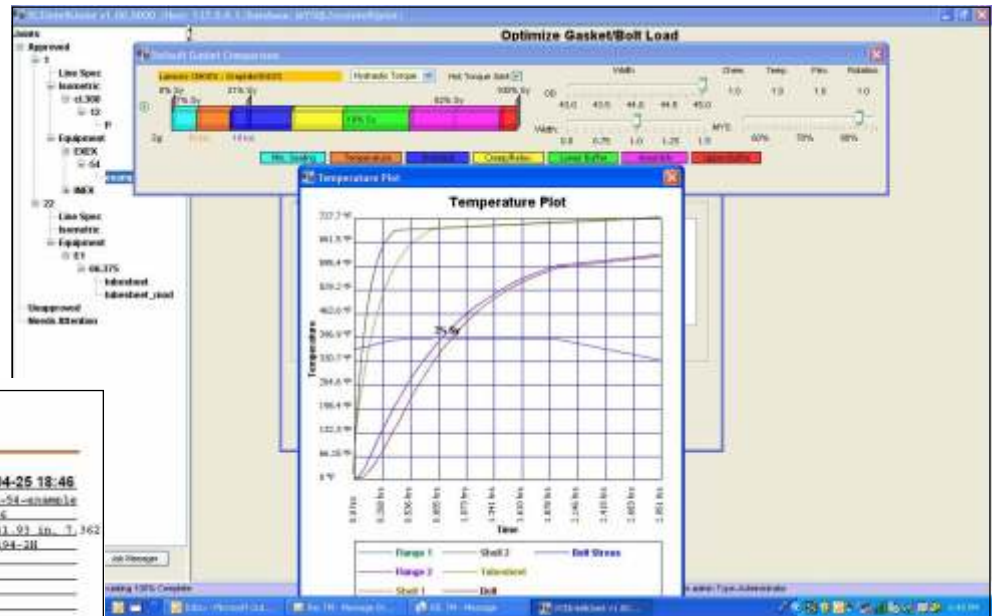


Gasket Optimization:

- Compare the performance of various gasket styles or manufacturers from actual third party test data
- Select the best gasket for the specific application
- Determine the optimal assembly bolt load based on all joint operational loads
- Visually see the effect of each operational load
- Optimize the gasket dimensions
- Automatically eliminate unsuitable gasket types

Determine the Effects of Temperature:

- Calculate the level of gasket stress change due to thermal transients
- Troubleshoot existing gasket configurations
- Determine the effectiveness of proposed leak fixes



VCE IntelliJoint

Joint Assembly

Work Pack: shutdown 2007 Date: 2007-04-26 18:46

STANDARD JOINT DETAILS Joint Code: J-E-8088-54-assembly

Joint Description: s235 Materials: s235

Flange Specs(OD, ID, THK): 1: (53.837 in, 41.93 in, 3.262 in) 2: (53.837 in, 41.93 in, 3.262 in)

Bolt Description: s 1/4 X Size 1 1/4 X Length 25.000 in - SA193-B7 Nuc A194-2H

Gasket Description: Lamco CR62X - Graphite 30420

Gasket Specs(Shape, OD, ID): 1: (108.42 in, 42 in) 2: (108.42 in, 42 in)

Washer Description: None

Belleville Dimension Limits: B/A

Operating Pres. / Temp.: 252 psia / 783 °F

Bolt Stress: s1.2 max. Specified Load(90%, 90%, 100%): s231.03, 10482.67, 17426.78, 42.10

Joint Disassembly / Keep Gasket: No / No Hot Torque: 225

Bolting Equipment: Genesis Hydraulic Torque Wrench - 1/2 1/4 A/P

Leak Test: Hydrostatic: 280 psia

BOLTING NOTES:

BOLTING PATTERN: Circular Pass

Snug Passes

See Notes for Bolt Numbering Sequence

Final Pass

Pattern passes: 1" 4 bolts at 30% of load same 4 bolts at 60% of load same 4 bolts at 90% of load

Complete circular passes until nuts do not turn

JOINT QA SECTION LIST (If Required)

Material Verification:	JAT L1 JAT L2/L3
Bolting & Gasket:	
Tool Calibration:	
Lubricant & Washers:	
Belleville Height:	
Joint Preparation OK:	
Flange Facing:	
Max. Runout:	
Gasket/Washer Install OK:	
Joint Alignment OK:	
Snug Tightening Performed:	
Final Tightening Performed:	
Hot Torque Performed:	
Leak Test Performed:	

COMMENTS:

Assembly Procedures:

- Select the best assembly pattern for the specified gasket
- Automatically calculate required torque or pump pressure
- Automatically eliminate unsuitable patterns
- Flag additional assembly requirements and joint component details
- Track joint assembly and leakage history
- Automatically print joint individual assembly sheets, material take-off sheets and assembly equipment sheets for each job
- Includes all required assembly equipment details to eliminate in-field mistakes