INTEGRITY-PRO

Flange Management Joint Integrity Software

INTEGRITY-PRO Joint Monitoring software is a bespoke database system specifically developed to plan, monitor, control and provide traceability of flanged joints and connections. The database calculation engine uses the Baseline Standard ASME PCC-1 2013 Appendix O Section O-4.1 and Appendix H Table H-1 to define the residual bolt load/stress, and is compared with tabled values in the SHELL ES/090 Rev 2 Specification. INTEGRITY-PRO runs on the standard Windows operating system and can be used as stand alone or networked. It has been adopted by major plant operators as an essential management system due to it's simplicity and comprehensive covering of the plant and related maintenance.

Offering data gathered from years of industry experience, Integrity-Pro can provide bolt tightening data including bolting patterns, torque and tensioning figures, procedures, techniques and recommended controlled bolting equipment. Based on the information entered, the Integrity-Pro software will analyze all of the data and produce a complete calculation sheet along with the required torque or tension figures to ensure an accurate and correctly bolted joint is achieved.

Integrity-Pro can also create a specific tightening procedure for each bolted joint, which can include specific information such as any special remarks all of which can be easily entered into the software by the user. It also includes basic information for standard flanges, wafer check valves, spade and spacers, and swivel flange assemblies.

Integrity-Projoint integrity database management system is used to support bolted joint inspection and maintenance and/or leak testing activities raising safety levels across the industry in which it applies.



MADE IN THE UK

INTEGRITY-PRO

Flange Management Joint Integrity Software

FUNCTIONALITY

Full traceability and control of all activities associated with the joint/connection including:

- · Joint disassembly/breakout
- · Machining/re-facing
- · Joint assembly
- Bolt tightening
- Testing
 (Hydrostatic, Pneumatic, Nitrogen or Helium)
- Leak history and incidents

Integrity-Pro Flange Management Joint Integrity Controlled Bolting software provides bolting calculations and data for :

- BS1560/ANSI B16.5 standard flanges
- MSS SP44 standard flanges
- API 6A and 17D standard flanges
- Clamp type connectors(Techlok, Grayloc, Galperti and Destec)
- Non-standard joints, i.e. pressure vessels, heat exchangers, compact flanges, etc..

- Project control and review by visual status display of each joint.
- Performs as a central source for documentation and records associated with each activity or task.
- Provides joint tightening procedures and methods.
- Generates tooling lists.
- Provides and maintains historical data for each joint.
- Search engine to find and display specific flanges/records.
- Embedded equipment database providing access to service records, tool calibration, etc.
- Embedded personnel database providing access to individual training, competence, qualifications, etc..
- Completed joint databases can be viewed and interrogated by a freeware viewer which can be freely distributed throughout the organization.

			Integrity-Pro		Integrity-Pro		
			Edit Flange				Edit Flange
Use Metric Size A/F Qty Bolt Material*	No V 2 1/4 V 3 1/2 28 A193-B7 V		Stoner	Use Metric Size A/F Qty Bolt Material*	No V 2 1/4 V 3 1/2 28 A193-B7 V		Swg Stainless QUE WRENCH
Advanced 🛛		🖌 🖊 an	y Brand	Advanced 🗧			any Brand
Calculation Opt		Additional Infor	mation	Calculation Op	tions	Ad ⊿tional Info	
Tightening Method	Aquajack Tensioner BS3 Tensioner BT Standard 1500 bar BT Subsea	Client Project Ref		Tightening Method	 Tension Torque 	Client Project Ref	
Advanced 🕱	BT TSR Tensioner BT Xtra	SAP Order Order		Advanced 🛠		SAP Order Order	
Use User Stress	HF SBT Tensioner HF Sub Sea Tensioner HF Topside Tensioner	Custom 3 Custom 4		Use User Stress		Custom 3	
	HL Tensioner HLF Tensioner LEVERLOK Tensioner	Custom 5			Atlas Copco ATW EnerPac	Custom 4 Custom 5	
	MRT Tensioner PS Tensioner SRT Tensioner	Work Instructions Comments			HiForce Hydratight Hytorc	Work Instructions	
Tension Details	SSI Tensioner SSIII Tensioner SST Tensioner	Tension Output	is	Torque Details	Norwolf RAD SPX	Comments Torque Output	s
Procedure*	SVR Tensioner		45000 lbf/in² (310 N/mm²)	Lubricant*	Torc-Tech TorcTool	Residual Stres	45000 lbf/in² (310 N/mm²)
Supplier*	SRT Tensioner 🔹	Residual Load	155250 lbf (691 kN)	COF*	TorcUP Wren	Torque	4133 lbf.ft (5604 Nm)
Model*	SRT5 •	% of Yield (Residual)	42.9	Supplier*	ATW T	Bolt Load	155250 lbf (691 kN)
Max WP	21750 psi •	Pressure A	15447 psi (1065.1 bar)	Model*	8ATWH V		5451 psi (375.9 bar)
HPA Orin Lonath	15.5 in ² •	Pressure B	12358 psi (852 bar)	Drive Type	Hex Drive 🔻	Min To Seal Yield Stress	35475 lbf/in² (245 N/mm²)
Grip Length Min Bolt	12.630 in V	Min To Seal	35475 lbf/in² (245 N/mm²)		e 5451 psi (375.9 bar)	Allowable	105000 lbf/in² (724 N/mm²)
Length	19.880 in •	Pass 1N	1: 15447 psi (1065.1 bar) 2: 14417 psi (994 bar)	Min Bolt Length	17.630 in 🔻	Stress	89250 lbf/in² (616 N/mm²)
Add Torque			3: 13388 nsi (923 har)				

1. Key Feature – Rapid Flange Data Entry

- Import data from Excel (Data Migration) or Copy existing Flanges.
- Allows for Pre-Engineering project work to commence, saved as a .sdf file.

C C C C Flange Register × Verter Verter Joint ID* Flange Register × Verter Joint ID* Flange 01-D System 01 - Produced Gas Joint ID* Flange 01-D System 01 - Produced Gas Verter Verter Verter Advanced X Ustomer ID 007 O01 Default Project Workpack O05 Default Project Workpack O06 Default Project Workpack O07 ECITE MIJ 10, 18 & 10 - Course Rayong O06 Default Project Workpack O07 Oddeler O08 Default Project Workpack Prange 01-D Status* New Criticality Medium Verticality Model Status* New Criticality Medium Project Workpack Pipe Spect Advanced X Workpack Status* New Criticality Model Status* O05 Default Project Workpack Vertical Register Verticality Medium Project Workpack Pipe Spect AsME O06 Default Project Workpack Vertical Register Verticality Vertical Register Verticality Vertical Register Status* Vertical Register Status* Vertical Register Vertical Register Vertical Register Vertical Register Vertical Register <th>Edit View</th> <th>Database</th> <th></th> <th></th> <th>Inte</th> <th>egrity-Pro Edit Flange</th> <th></th> <th>- 0 ×</th>	Edit View	Database			Inte	egrity-Pro Edit Flange		- 0 ×
Flange Register Ventor Identification Function / Location Flange Dimensions Flange Tor Joint ID* Flange 01-D System 01-Produced Gas Image Tor G01 Default Point Customer ID 007 Operating Tor Workpack Image Tor						Luit Hange		-
Flange 01-D John L D Flange 01-D System 0.1 - Produce 0.28 John L D Produce 0.28 Ine No Ine No Ine 1 Ine No 001 Default?or Customer ID 007 Module Module 1 Ine No 003 Default?or Customer ID 007 Module 1 Ine No Ine No Ine No Ine No 004 Default?or Default?or Default?or Installation Kaambo FSPO Avarced 3 005 Default?or Default?or Extra SN (Nepack* Pipe Specification Installation* Avarced 3 006 Default?or New Or Pipe Specification Pipe Specification Installation* Avarced 3 006 Default?or Notel* Stand* Pipe Specification Pipe Specification Pipe Specification Pipe Specification Piange 01-B Default?or Notel* Stand* Pipe Specification Pipe Specification Pipe Specification Piange 01-B Default?or Notel* Stand* The produce 0.25 Pipe Specification Pipe Specification Pipe Specificat					Function / Loo	cation	Flange Dimensions	
Joint D V3 Workpage Advanced > 001 DefaultPro Customer ID 007 002 DefaultPro Emporary Tage Flange 01-A 003 DefaultPro Workpack* DefaultPro 004 DefaultPro ECITB MII 10, 18 & 19 Course Rayong 005 DefaultPro Status* New 006 DefaultPro Status* New 007 DefaultPro Status* New 008 DefaultPro Status* New 009 DefaultPro Status* New 1008 DefaultPro Status* New 007 DefaultPro Status* New Pipe Specification 008 DefaultPro Status* New Pipe Specification Plange01-0 DefaultPro Kaondad Model* Standard Operating Plange01-0 OHHISO1 Geos Goo (PN 100) Pressure 1480.00 psi< v Plange01-0 OHHISO1 Avanced * Movanced * Movanced * Presoprating deg F • N	ا 🗳 🌮 🌾 🕅		Joint ID*	Flange 01-D	System	01 - Produced Gas 🔻	Imperial (inch) Bolts: 28 Clearance: 4.25	
Olt DefaultPro Customer ID 007 Line No Line 1 • ODE DefaultPro Fampe01-A Area Area A • ODE DefaultPro DefaultProject Workpack • Sub-Area Ico 1 • ODE DefaultPro Installation* Kaembo FSPO • Advanced A ODE DefaultPro DefaultProject Workpack • Advanced A ODE DefaultPro Description ECTB MII 0, 18 & 19 Course Rayong Advanced A ODE DefaultPro DefaultPro Sub-Area Advanced A ODE DefaultPro Doint Specification Pipe Specification • ODE DefaultPro Type* ANSI 16.5/16.47 Series A • Pipe Specification Pipe Specification ODE DefaultPro Type* Assandard • Advanced A • • Fiange01-D DefaultPro Type* Assandard • • • • • • • • • • • • • • • <t< th=""><th></th><th></th><th>Advanced 🖈</th><th></th><th>Sub-System</th><th>01-01</th><th>0.25</th><th></th></t<>			Advanced 🖈		Sub-System	01-01	0.25	
OO2 DefaultPro OO2 DefaultPro OO3 DefaultPro OO4 DefaultPro OO5 DefaultPro OO6 DefaultPro OO6 DefaultPro OO7 DefaultPro OO6 DefaultPro OO7 DefaultPro OO6 DefaultPro OO6 DefaultPro OO6 DefaultPro OO7 DefaultPro OO8 DefaultPro OO8 DefaultPro OO8 DefaultPro OO8 DefaultPro OO8 DefaultPro Nodel* Standard Ype* Ring Of-D PiangeO1-A CHRISOLF Advanced X Pressure Operating Carbon Steel Bot Specific			Customer ID	007	Line No	Line 1 🔹		
003 DefaultPro Workpack* DefaultProject Workpack Area Area A Image A 004 DefaultPro Installation* Kaombo FSPO Sub-Area Loc 1 Image A 005 DefaultPro Description ECITE MUI 10, 18 & 19 Course Rayong Advanced A 006 DefaultPro Status* New Pipe Specification Image A 007 DefaultPro Status for Ansate A Pipe Specification Pipe Specification 009 DefaultPro Type* ANSI 16.5/16.47 Series A Pipe Spec file AME Flange 01-D DefaultPro Model* Standard Advanced A Working Frange 01-C CHRIS 01-7 Carbon Steel The pressure 1480.00 pisi<* Flange 01-B OHRID 01-7 Size* 28 (DN 700) Test Pressure 220.00 pisi<* Material Carbon Steel Carbon Steel Type* Ring Type Joint Messages Use Metric No Type* Ring Type Joint Piese contact Technical Support, You are reaching for this tool. Please conside rating for this tool. Please conside rating for this tool. Please conside rating for this to					Module	Module 1		
004 DefaultPro Dosciption Installation* Kaombo FSPO Sub-Area Loc 1 V 005 DefaultPro Dosciption ECITB MUI 10, 18 & 19 Course Rayong Advanced 2 006 DefaultPro Dosciption Dint Specification Pipe Specification 007 DefaultPro Dosciption Dint Specification Pipe Speci ASME 008 DefaultPro Dosciption Model* Standard Advanced 2 009 DefaultPro Dosciption Model* Standard Advanced 2 Flange01-C CHRISO14 Cass* 600 (PN 100) Pressure 1480.00 psi Pier Flange01-C CHRISO14 Stard Test Pressure 2220.00 psi Metrid Metrid msc Flange01-B CHRISO14 Carbon Steel Type* Ring Type Joint Metrid Metrid* Metrid* Stainless Steels and Nickel-base Alloys * Plaes contact Technical Support. You are reaching for this tool. Please conside traing for this tool. Please consi	03 C	Default Proj			Area	Area A 🔹	A 38.00	
006 DefaultPro 006 DefaultPro 006 DefaultPro 007 DefaultPro 008 DefaultPro 007 DefaultPro 008 DefaultPro 009 DefaultPro 1199 Status 1199 DefaultPro 1199	04 C	Default Proj			Sub-Area	Loc 1 🔹		
005 DefaultProj Status* New Criticality Medium V 006 DefaultProj Joht Specification Pipe Specification V	05 C	Default Proj					<u>Δ</u>	
007 DefaultProj 007 DefaultProj 008 DefaultProj 009 DefaultProj 009 DefaultProj Nodel* Standard V Model* Standard V Advanced & Working Pressure Plange 01-D OHRISO14 Christo14 Christo14 Size* 28 (DN 700) Size* 28 (DN 700) Material Carbon Steel Material Carbon Steel Bolt Specification Gasket Specification Use Metric No A/F 3 1/8 O(Y 28 Bolt Material* A193-B7 Advanced X					Criticality	Modium	4	
008 Default Pro 009 Default Pro 17/Pe* ANSI 16.5/16.47 Series A Flange 01-D Default Pro 1 Model* Standard Y Pipe Specification Pipe Specification Pipe Specification Operating Pressure 1480.00 Pine Specification Pipe Specification Vorking Pressure Pressure 1480.00 Pine Specification Operating Material Carbon Steel Bolt Specification Gasket Specification Use Metric No< N/F 3 1/8 Oth Material* A193-B77 Bolt Material* A193-B77 Oth Material* A193-B77							A 29.00	
009 DefaultPro Type* ANSI 16.5/16.47 Series A Pipe Spec ASME Flange 01-D DefaultPro Model* Standard Advanced A Flange 01-C CHRIS-01- Class* 600 (PN 100) V Flange 01-A CHRIS-01- Size* 28 (DN 700) V Flange 01-B CHRIS-01- Advanced A Working Pressure 1480.00 psi V Flange 01-B CHRIS-01- Advanced A Operating Operating Operating Operating Metric Metric Importance Importance Bolt Specification Use Metric No Type* Ring Type Joint Y Please contact Technical Support. You are reaching bigger model. Please contact Technical Support. You are reaching bigger model. Please contact Technical Support. You are reaching bigger model. Please contact Technical Support. You are reaching bigger model. Please contact Technical Support. You are reaching bigger model. Please contact Technical Support. You are reaching bigger model. Please contact Technical Support. You are reaching bigger model. Please contact Technical Support. You are reaching bigger model. Vivy 28 Dottored X Stainless SINNER RING,316 SS OUTER RING Please			Joint Specificat	tion	Pipe Specificat	tion	Α	
Flange 01-D Default Pro Model* Standard Advanced Flange 01-D Christona Class* 600 (PN 100) Vorking Pressure 1480.00 psi Vorking Flange 01-A CHRIS 01-3 Size* 28 (DN 700) V Pressure 1220.00 psi Vorking Flange 01-B CHRIS 01-3 Advanced 3 Material Carbon Steel Test Pressure 2220.00 psi Vorking Material Carbon Steel Operating Operating Metric Metric Impediate Use Metric No Type* Ring Type Joint Please contact Technical Support. You are reaching Please contact Technical Support. You are reaching Size 2 V Stainless Steels and Nickel-base Alloys Please contact Technical Support. You are reaching Qty 28 Bolt Material* Alya9-87 Type* Stainless Steels and Nickel-base Alloys Please contact Technical Support. You are reaching Bolt Material* Alya9-87 Type* Stainless Steels and Nickel-base Alloys Please contact Technical Support. You are reaching Bolt Material* Alya9-87 Type			Type*	ANSI 16.5/16.47 Series A	Pipe Spec	ASME	< <u>9.25</u> 28. ¹	00
Flange 01-C CHRIS-01- Class* 600 (PN 100) V Flange 01-A CHRIS-01- Size* 28 (DN 700) V Flange 01-B CHRIS-01- Advanced & Test Pressure 1480.00 psi V Flange 01-B CHRIS-01- Advanced & Operating Operating V V Material Carbon Steel Bolt Specification Gasket Specification Metria Metria Metria Metria Pressure Type* Ring Type Joint Metria Metria Stainless Steels and Nickel-base Alloys Please contact Technical Support. You are reaching bigger model. Qiv 28 Bolt Metrial* A193-B7 T 316 SS INNER RING,316 SS OUTER RING Please contact Technical Support. You are reaching bigger model. Qiv 28 Bolt Metrial* A193-B7 T Stainless Steels and Nickel-base Alloys Find Stainles Steels Support. You are reaching bigger model.					1		↓	
Flange 01-A CHRIS 01-J Size* 28 (DN 700) Pressure 1480.00 psi Image: psi = 1 Flange 01-B CHRIS 01-J Advanced \$ Test Pressure 2220.00 psi = 1 Image: psi = 1		CHRIS 01 F	Class*	600 (PN 100)				
Flange 01-B CHRIS 01-A Advanced 2 Test Pressure 2220.00 psi Material Carbon Steel Bolt Specification Gasket Specification Messages Use Metric No Size Q A/F 31/8 Qty 28 Bolt Material* A193-B7 Type* Ring Type Joint Please contact Technical Support. You are reaching to this tool. Please consider Boscription Stainless Steels and Nickel-base Alloys Description Stainless Stoels and Nickel-base Alloys A/F Aldvanced X 	-		Size*	28 (DN 700)		1480.00 psi 🔻	4	
Advanced × Operating Temperature Operature Ope	-				Test Pressure			
Bolt Specification Gasket Specification Messages Use Metric No Type* Ring Type Joint Stainless Steels and Nickel-base Alloys A/F 3 1/8 Qty 28 Bolt Material* A193-B77 Advanced X Advanced X 					Operating		Ê Ê Ê	
Bolt Specification Messages Use Metric No Type* Ring Type Joint Please contact Technical Support. You are reaching to the commended rating for this tool. Please considered to the commended rating for this tool. Please consider			Material	Carbon Steel	Temperature	deg F 🔹		
Size 2 AF 3 1/8 Aterial Stainless Steels and Nickel-base Alloys AF 3 1/8 Aterial Alignment Ali			Bolt Specification	on	Gasket Specifi	ication		1
Size 2 Material* Stainless Steels and Nickel-base Alloys recommended rating for this tool. Please considered and the place consis of the place considere			Use Metric	No	Type*	Ring Type Joint 🔹	Please contact Technical Support, You are reaching t	the upper
A/F 3 1/8 Description 316 SS INNER RING,316 SS OUTER RING B Qty 28 Bolt Material* A193-B7			Size	2	Material*	Stainless Steels and Nickel-base Alloys	recommended rating for this tool. Please consider us	ing a
Bolt Material* A193-B7 Advanced X			A/F	3 1/8	Description	316 SS INNER RING,316 SS OUTER RING B	bigger model.	
			Qty	28	1			
			Bolt Material*	A193-B7	ī			
In Flance 14 Mar Ethand 14 Parallele			Advanced ¥					
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2. Key Feature - Completion & Work Instruction Certificate

- Once all drawings are in the system and all specifications are added, Work Instructions can be generated to support the field work.
- Completion certificates can be created as part of any documentation handover.

Clie	nt			We	orkpa	ack I	Number				Tag	g No
PRO FAB					WP	-012	345				TG	007
Project Number JN 1176				Project Name				Location			Client	Tag No
				Ichthys		Batam, Indones			ia	TG_007_ab		
				v	Vorkp	pack	Details					
Line No		L-80	-790_FV	V347-JF-002				oane Tank	C2SA-790	_FW34	7-1GA	\3-K-N
					Joir		etails					
Joint Type			Standard	ł		-	Gasket Type		SWG			
Joint Size		20				-	Gasket Mate	rial	Stainless			
Joint Class/Rat		300					Bolt Qty			24		
Flange Materia		ANSI					Nut A/F		2			
Bolt Material		A320				_	Grip Length		5.13 in			
Bolt Size/Lengt			"/ 8.46			_	Bolt Coating		Black Oxide			
Lubricant Nam			DLYKOTE 1000			_		Of Friction (µ)	0.11			
Residual Bolt S	tress	4000	0 lbf/in^:				Bolt Load Equipme		37760 lbf			
			Tension	Recor	nme	nueu	i Equipine	enu	Torque			
Tool Recomme			rension			-	real Damas		3ATWS			
Tool Cover	lucu	10096	% / 50% / 25%			_	Tool Recommended Torque (Stages/Pass)		30%	60% 100%		
1st Pass Press	ra	100%	76 / 3076 / 2376				Forque Valu		177 lbf.ft			
2nd Pass Press						_	Pump Press		547 psi		153 lbf.ft 589 lbf.ft 1094 psi 1824 psi	
Check Pass	are				-1	Pump Pressure		547 p5	1054	251	1024 por	
					Cu	iston	ner Speci	fied Values?				
				Equipment Info						No		
Tool Used		3	3ATWS			5	Serial No		W6005 Record serial equipment u			
Pump Type		R	RWP55-BS			5	Serial No		G234577	final/check pass only		
		Fla	nge Che	cks					Comment	s		
Flange Face	Clean		X	Aligned		X,		Opsi integrity te				
Bolts	Correc	t Lengt	h X	Correct Material		X	rassed 5,00	opsi integrity te	sung			
Gasket	Correc	t Size	X	Correct Material		Х						
Assembled By		Johnny	y Prastoyo	ie		Com	pany	PT Advent Pra	karsa	Date	06/0	02/2016
Tightened By		John S	Smith			Com	pany	PT Advent Pra	karsa	Date		02/2016
				PT ADVENT				PROFAB			K	HI
Print Name			JOHN SMITH – ECITB TECHNICIAN CERT NO. 1988325			N	Firman Wahyu Jatmiko		Mr Yama Kitahara			
Signature			J. Smith				F.Jatmiko			Y. Kitahara		
Date			9th FEBRUAURY 2016				10th FEBRUAURY 2016			12 th ci	BRUA	URY 2016

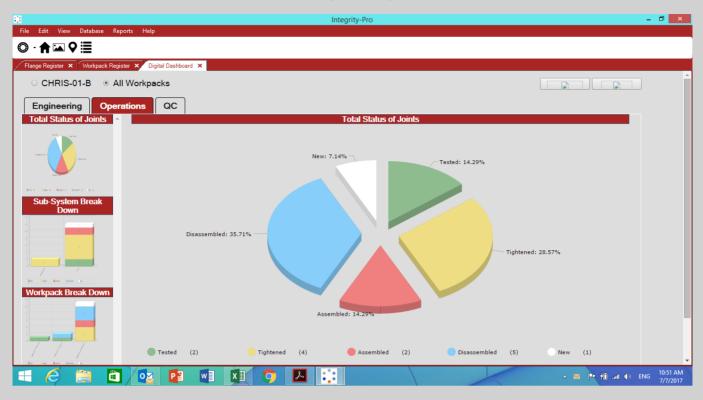
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	BP		WP-0		TG_007			
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IL	U		uth Korea					
	11/0			k Details		0_007_00		
System	C2SA-790	FW347-1GA3-K-N	•	Sub-System	N/A			
Line No		FW347-JF-002						
	-		Instr	uction				
For all line class	es 1500# & ab	should be applied. ove, manual torque be applied. For over	2" bolt	shall be used for bolts o dia., bolt tensioning sho	up to 1" bolt d build be applie	ia. For over d.	1" to 2" b	
			Joint	Details				
Joint Type	ANSI Stand	ard		Gasket Type	SWG			
Joint Size	20		Gasket Material	Stainless				
	300			Bolt Qty	24			
Flange Material	ANSI B16.5			Bolt Qty Nut A/F	2			
Flange Material Bolt Material	ANSI B16.5 A320-L7			Bolt Qty Nut A/F Grip Length	2 5.13 in			
Flange Material Bolt Material Bolt Size/Length	ANSI B16.5 A320-L7 1 1/4" / 8.			Bolt Qty Nut A/F Grip Length Bolt Coating	2 5.13 in Black Oxide			
Flange Material Bolt Material Bolt Size/Length Lubricant Name	ANSI B16.5 A320-L7 1 1/4" / 8. MOLYKOTE	1000		Bolt Qty Nut A/F Grip Length Bolt Coating Co-efficient Of Friction (µ)	2 5.13 in Black Oxide 0.11			
Flange Material Bolt Material Bolt Size/Length Lubricant Name	ANSI B16.5 A320-L7 1 1/4" / 8.	1000 n^2		Bolt Qty Nut A/F Grip Length Bolt Coating Co-efficient Of Friction (μ) Bolt Load	2 5.13 in Black Oxide			
Flange Material Bolt Material Bolt Size/Length Lubricant Name	ANSI B16.5 A320-L7 1 1/4" / 8. MOLYKOTE 40000 lbf/i	1000 n^2 Reco	mmend	Bolt Qty Nut A/F Grip Length Bolt Coating Co-efficient Of Friction (µ)	2 5.13 in Black Oxide 0.11 37760 lbf			
Flange Material Bolt Material Bolt Size/Length Lubricant Name Residual Bolt Stress	ANSI B16.5 A320-L7 1 1/4" / 8. MOLYKOTE	1000 n^2 Reco	ommend	Bolt Qty Nut A/F Grip Length Bolt Coating Co-efficient Of Friction (µ) Bolt Load ded Equipment	2 5.13 in Black Oxide 0.11 37760 lbf Torque			
Flange Material Bolt Material Bolt Size/Length Lubricant Name Residual Bolt Stress Tool Recommended	ANSI B16.5 A320-L7 1 1/4" / 8. MOLYKOTE 40000 lbf/i Tensi	: 1000 n^2 Reco on	mmend	Bolt Qty Nut A/F Grip Length Bolt Coating Co-efficient Of Friction (µ) Bolt Load de Lequipment Tool Recommended	2 5.13 in Black Oxide 0.11 37760 lbf Torque HTL-DS3		1	
Flange Material Bolt Material Bolt Size/Length Lubricant Name Residual Bolt Stress Tool Recommended Tool Cover	ANSI B16.5 A320-L7 1 1/4" / 8. MOLYKOTE 40000 lbf/i	: 1000 n^2 Reco on	mmend	Bolt Qty Nut A/F Grip Length Bolt Coating Co-efficient Of Friction (µ) Bolt Load ed Equipment Tool Recommended Torque (Stages/Pass)	2 5.13 in Black Oxide 0.11 37760 lbf Torque HTL-DS3 30%	60%		
Hange Material Bolt Material Bolt Size/Length Lubricant Name Residual Bolt Stress Tool Recommended Tool Cover 1st Pass Pressure	ANSI B16.5 A320-L7 1 1/4" / 8. MOLYKOTE 40000 lbf/i Tensi	: 1000 n^2 Reco on	mmend	Bolt Qty Nut A/F Grip Length Bolt Coating Co-efficient Of Friction (µ) Bolt Load de Equipment Tool Recommended Toorue (Stages/Pass) Torque Value	2 5.13 in Black Oxide 0.11 37760 lbf Torque HTL-DS3 30% 177 lbf.ft	353 lbf.ft	100% 589 lbf.1	
Flange Material Bolt Material Bolt Size/Length Lubricant Name Residual Bolt Stress Tool Recommended Tool Cover 1st Pass Pressure 2nd Pass Pressure	ANSI B16.5 A320-L7 1 1/4" / 8. MOLYKOTE 40000 lbf/i Tensi	: 1000 n^2 Reco on	mmend	Bolt Qty Nut A/F Grip Length Bolt Coating Co-efficient Of Friction (µ) Bolt Load ed Equipment Tool Recommended Torque (Stages/Pass)	2 5.13 in Black Oxide 0.11 37760 lbf Torque HTL-DS3 30%		589 lbf.	
Flange Material Bolt Material Bolt Size/Length Lubricant Name Residual Bolt Stress Tool Recommended Tool Cover 1st Pass Pressure 2nd Pass Pressure	ANSI B16.5 A320-L7 1 1/4" / 8. MOLYKOTE 40000 lbf/i Tensi	: 1000 n^2 Reco on 5 / 25%		Bolt Qty Nut A/F Grip Length Bolt Coating Co-efficient Of Friction (µ) Bolt Load Get Equipment Tool Recommended Torque (Stages/Pass) Torque Value Pump Pressure	2 5.13 in Black Oxide 0.11 37760 lbf Torque HTL-DS3 30% 177 lbf.ft	353 lbf.ft 1094 psi Note:	589 lbf. 1824 ps	
Flange Material Bolt Material Bolt Size/Length Lubricant Name Residual Bolt Stress Tool Recommended Tool Cover 1st Pass Pressure 2nd Pass Pressure Check Pass	ANSI B16.5 A320-L7 1 1/4" / 8. MOLYKOTE 40000 lbf/i Tensi	: 1000 n^2 Reco on		Bolt Qty Nut A/F Grip Length Bolt Coating Co-efficient Of Friction (µ) Bolt Load Get Equipment Tool Recommended Torque (Stages/Pass) Torque Value Pump Pressure	2 5.13 in Black Oxide 0.11 37760 lbf Torque HTL-DS3 30% 177 lbf.ft	353 lbf.ft 1094 psi Note: Record set	589 lbf.t 1824 ps	
Flange Material Bolt Material Bolt Star(Jength Lubricant Name Residual Bolt Stress Tool Recommended Tool Cover 1st Pass Pressure 2nd Pass Pressure Check Pass Tool Used	ANSI B16.5 A320-L7 1 1/4" / 8. MOLYKOTE 40000 lbf/j Tensi 100% / 50%	: 1000 n^2 Reco on 5 / 25%		Bok Qty Nut A/F Grip Length Bok Coating Co-efficient Of Friction (µ) Bok Load ed Equipment Tool Recommended Torque (Staged/Pass) Torque Value Pump Pressure	2 2 5.13 in Black Oxide 0.11 37760 lbf Torque HTL-DS3 30% 177 lbf.ft 547 psi	353 lbf.ft 1094 psi Note: Record set for equipm	589 lbf. 1824 ps	
Flange Material Bolt Material Bolt Star(Jength Lubricant Name Residual Bolt Stress Tool Recommended Tool Cover 1st Pass Pressure 2nd Pass Pressure Check Pass Tool Used	ANSI B16.5 A320-L7 1 1/4" / 8. MOLYKOTE 40000 lbf/i Tensi 100% / 50%	: 1000 n^2 Reco on s/ 25% Equipment Info		Beit (ty) Not A/F Grip Length Grip Length Beit Casting Co-efficient Of Introdo (iu) Beit Land Co-efficient Of Introdo (iu) Beit Land Co-efficient Of Introdo (iu) Beit Land Co-efficient Of Introdo (iu) Beit Land Tarque (Stape/Pane) Tarque Value Pane Pressure Sertal No	2 2 5.13 in Black Oxide 0.11 37760 lbf Torque HTL-DS3 30% 177 lbf.ft 547 psi W6005	353 lbf.ft 1094 psi Note: Record set for equipm final/check	589 lbf.t 1824 ps rial numbers	
Flange Material Bolt Material Bolt Size/Length Lubricant Name Residual Bolt Stress Tool Recommended Tool Recommended Tool Cover 1st Pass Pressure 2nd Pass Pressure Check Pass Tool Used Pump Type	ANSI B16.5 A320-L7 1 1/4" / 8. MOLYKOTE 40000 lbf/i Tensi 100% / 50%	: 1000 n^2 Reco on s/ 25% Equipment Info		Bok Qby Nat A/F Grip Length Bok Coating Co-efficient OF Friction (µ) Bok Load de Equipment Tool Recommended Torope (Stope/Pass) Torope Value Pump Pressure Serial No Serial No	2 2 5.13 in Black Oxide 0.11 37760 lbf Torque HTL-DS3 30% 1777 lbf.ft 547 psi W6005 123456 Comments	353 lbf.ft 1094 psi Note: Record set for equipm final/check	589 lbf.t 1824 ps rial numbers	
Bolt Material Bolt Szey(Length Lubricant Name Residual Bolt Stress Tool Recommended Tool Cover 13 ft Pass Pressure Check Pass Tool Used Pump Type Flange Face Cle	ANSI B16.5 A320-L7 1 1/4" / 8. MOLYKOTE 40000 lbf/i Tensi 100% / 50%	: 1000 n^2 Reco on 5 / 25% Equipment Info	ormatio	Beit (ty) Not A/F Grip Length Grip Length Beit Casting Co-efficient Of Introdo (iu) Beit Land Co-efficient Of Introdo (iu) Beit Land Co-efficient Of Introdo (iu) Beit Land Co-efficient Of Introdo (iu) Beit Land Tarque (Stape/Pane) Tarque Value Pane Pressure Sertal No	2 2 5.13 in Black Oxide 0.11 37760 lbf Torque HTL-DS3 30% 1777 lbf.ft 547 psi W6005 123456 Comments	353 lbf.ft 1094 psi Note: Record set for equipm final/check	589 lbf.t 1824 ps rial numbers	

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3. Key Feature - Digital Dashboard

• Dashboard for Engineering, QC and Operations.



4. Key Feature - Drawing Overlay & Mark-up

- Drawing overlay feature allows Flange Management tags and visual status to be layered on top of leak test mark-up route.
- Mark-up drawings allow detailing information on valves within the test envelope.

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5. Key Feature – AEGEX tablet

- Intrinsically safe Zone 1/21 & DIV. 1 AEGEX tablet running INTEGRITY-PRO (Flange Management) FM JIT software, and Windows 10 as standard.
- The AEGEX tablet can directly scan the Flange Tag Bar Code, thereby locating the Flange Joint ID immediately in the Flange Register where the Flange status can be updated in real time.



Data upload to local server/cloud hosted DB

ADD WORK INSTRUCTION

MADE IN THE UK