



INTEGRATED®

OEM IE™ RAM BOP CATALOG

INTEGRATED®

is an established OEM manufacturer of API Monogrammed Pressure Control Equipment and Spare Parts that meets or exceed industry Requirements. All products are designed, engineered, manufactured, and validated as per latest edition of API 6A, 16A, 20E & ASME Standards & Specifications.

INTEGRATED® IE™ Forged Ram BOP (“WSP” Style) is one of the most utilized BOPs globally for well control application.



INTEGRATED® is an API licensed Original Equipment Manufacturer (OEM) of Pressure and Flow Control Equipment for the Global Drilling, Workover, Snubbing, Rental and Production sectors of the Oil and Gas Industry

INTEGRATED® holds the following Manufacturing Licenses & Certifications:

API 6A | API 16A | API 16AR | API 16C | API 20E (BSL 1,2 & 3) | ASME U | CE | CRN | NATIONAL BOARD | API Q1 (10th Edition) | ISO-9001-2015

PRODUCT INDEX

1	GENERAL INFORMATION	Page No.
	➤ INTEGRATED® Manufactured API Monogrammed Pressure and Flow Control Equipment and Products	3
2	DESCRIPTION OF IU™ RAM BOP	
	➤ Product Specifications	4
	➤ Product Features and Benefits	4
3	PRODUCT DIMENSIONS AND WEIGHTS	
	➤ Dimensional Drawing	5
	➤ 7-1/16" – 3/5k: Single (SR), Double (DR) & Triple (TR) Ram BOP Dimensions and Weights	6
	➤ 9" – 3/5k: Single (SR), Double (DR) & Triple (TR) Ram BOP Dimensions and Weights	6
4	IE™ OPERATING DATA AND FLUID REQUIREMENTS	
	➤ IE™ Hydraulic Operating Data – Standard Bonnet	7
5	BOP PART NUMBERS: As per Size, Pressure Rating & Connection Configuration	
	➤ 7-1/16" Single (SR) Ram Forged IE™ BOP Pressure Ratings: 3k / 5k	8
	➤ 9" Single (SR) Ram Forged IE™ BOP Pressure Ratings: 3k / 5k	
	➤ 7-1/16" Double (DR) Ram Forged IE™ BOP Pressure Ratings: 3k / 5k	8
	➤ 9" Double (DR) Ram Forged IE™ BOP Pressure Ratings: 3k / 5k	
	➤ 7-1/16" Triple (TR) Ram Forged IE™ BOP Pressure Ratings: 3k / 5k	8
	➤ 9" Triple (TR) Ram Forged IE™ BOP Pressure Ratings: 3k / 5k	
6	IE™ RAM SEAL KITS:	
	➤ 7-1/16" – 3/5k, Standard Complete Carded Seal Kit	9
	➤ 9" – 3/5k, Standard Complete Carded Seal Kit	9
7	IE™ OPERATIONAL CHARACTERISTICS SUMMARY	
	➤ IE™ Style Ram BOP Validation Results – API 16A 4 th Edition, PR1, Performance Criteria)	9
8	IE™ RAM BONNET ASSEMBLY BREAKDOWN (Includes Seals)	
	➤ 7-1/16" – 3/5k, Standard Complete Bonnet Assembly	10
	➤ 9" – 3/5k, Standard Complete Bonnet Assembly	11
9	IE™ RAM BLOCKS & ASSEMBLIES	
	➤ 7-1/16" – 3/5k, Ram Blocks & Assemblies: CSO, Pipe, IFlex™ & VBR	12
	➤ 9" – 3/5k, Ram Blocks & Assemblies: CSO & Pipe	13
10	INTEGRATED® CONTACT INFORMATION	
	➤ Locations Address	14
	➤ Contact Phone Number	14
	➤ Contact Email Address	14
	➤ Website	14
	➤ INTEGRATED® Licenses & Certifications Certificates	14

**INTEGRATED® ORIGINAL EQUIPMENT MANUFACTURE (OEM)
API Monogrammed Equipment & Product - Licenses and Certifications**

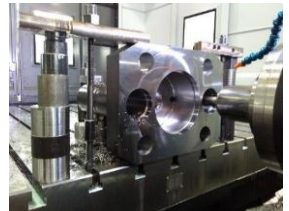
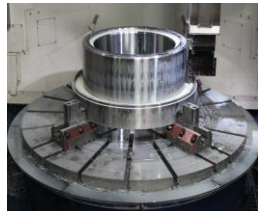
API 6A-0851 | API 16A-0197 | API 16AR-0015 | API 16C-0564 | API 20E-0087 | ASME U-59670 | CE (European) | CRN (Canadian) | API Q1-4952 (10th Edition) | ISO 9001:2015-RQ91/4505

API 6A	API 6A	API 16A	API 16A	API 16C	API 20E	ASME U	API 16AR	API Q1 / ISO
PRESSURE CONTROL VALVES	PRESSURE MANIFOLDS WELLHEAD COMPONENTS	BLOWOUT PREVENTERS (RAM BOPS)	BLOWOUT PREVENTERS (ANNULAR BOPS)	WELL CONTROL CHOKES & BUFFER TANKS	EQUIPMENT BOLTING (BSL)	PULSATION DAMPENERS (PD)	REMANUFACTURING (Recertification)	EQUIPMENT & ELASTOMERS
IFC™ (Slab Gate Valve) 2-1/16" to 4-1/16"	Choke & Kill Manifolds	IUT™ Ram Forged BOP Single Double Shear & Non-Shear 7-1/16" to 21-1/4"	ISA™ Spherical Annular Forged BOP Studded Top x Flanged Bottom 7-1/16" to 21-1/4"	Well Control Chokes Positive Choke Adjustable Choke	Ram & Annular BOP Bolting (BSL-1, 2 & 3)	IDPD™ Drilling Pulsation Damperer 1/2 & 20 GALLON Up to 7,500 psi	Ram & Annular BOP Repair and/or Remanufacture All Major Brands	Certified Quality Management System (QMS)
IFLS™ (Slab Gate Valve) 2-1/16" to 7-1/16"	Standpipe & Managed Pressure Drilling Manifolds	IWS™ Ram Forged BOP Single Double 7-1/16" to 13-5/8"	IK™ Annular Forged BOP Studded Top x Flanged Bottom 7-1/16" to 13-5/8" & 29" - MSP	Well Control Choke Actuators	Valve Bolting	IPPD™ Production Pulsation Damperer 1 to 20 GALLON 285 to 6,180 psi	Choke & Kill Manifolds	Corporate ERP Manufacturing System (JDE)
AceFlow™ (Expanding Gate Valve) 2-1/16" to 4-1/16"	Cement Manifolds	IE™ Ram Forged BOP Single Double Triple 7-1/16" to 9"	ISA™ & IK™ Annular Spare Parts	Choke & Kill Manifold Buffer Cambers (tanks)	Pulsation Damperer Bolting	Pulsation Damperer Diaphragm & Kits	API Valves FC & FLS Styles	Global System to connect all Manufacturing, Distribution & Services
Surface Safety Valves (SSV) (PSL 2 & 3)	Kill Wing Valve Manifold	IWP™ Ram Forged BOP Single Double 9"	ISA™ & IK™ Packing Elements Natural (NR) Nitrile (NBR)		Customized Bolting	IDPD™ Drilling NBR HNBR FKM IPPD™ Production NBR HNBR FKM Emasco Style PDs PDs5 PDs5A NBR HNBR FKM PD Parts Stabilizers, Gaskets & Kits	Pulsation Damperers Drilling & Production Only Major Brands	QMS for Pressure Control Elastomer Manufacturing as per API 16A
Ball Valves	Hydraulic Fail-Safe Surface Safety Valve Skid Manifold	IUT™ Ram Blocks & Assemblies CSO, Pipe, VBR, IFlex™ & SBR	ISA™ & IK™ Seal Kits					
Plug Valves	Chokes	I70™ (IWS™) Ram Blocks Full Assemblies CSO, Pipe & Multi Ram						
Minor & Major Repair Kits	Tubing & Casing Spools	IE™ Ram Blocks Full Assemblies CSO, Pipe & IFlex™						
Ball Valves	Tubing & Casing Hangers	IWP™ Ram Blocks Full Assemblies CSO & Pipe						
	Adapter Spools	IUT™, IWS™, IE™ & IWP™ Ram Spare Parts						
	Spacer Spools	Ram Elastomers						
	Cross-Over Connectors	Front Packers, Top Seals, VBR, IFlex™, SBR, Door Seal & Seal Kits						
	Tree Caps							
	Flanges							
	Blind, Companion & Test PE Seals							

INTEGRATED's API Certified – Licensed OEM plants provide state-of-the-art manufacturing of our Engineered-Designed Pressure Control Equipment and Elastomeric Products.



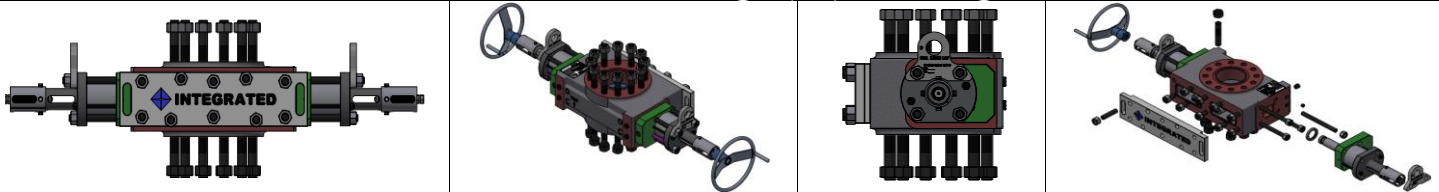
INTEGRATED's Oracle - JD Edwards Enterprise Resource Planning (ERP) system integrates our global manufacturing, distribution facilities and service centers



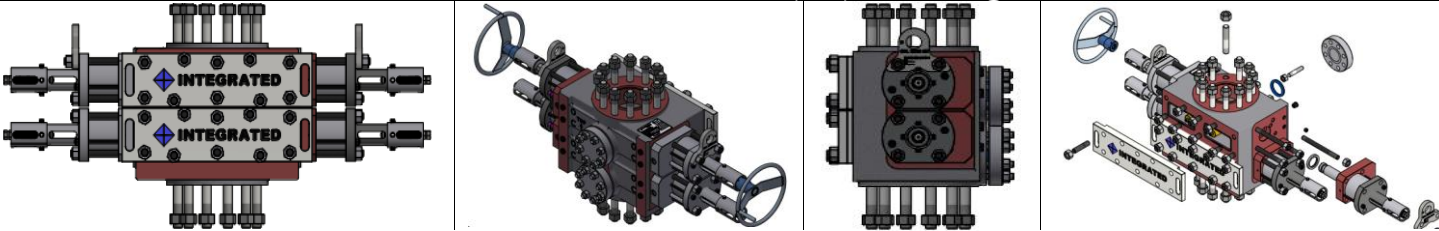
**INTEGRATED® OEM API 16A MONOGRAMMED
TYPE IE™ RAM BLOWOUT PREVENTER**

The INTEGRATED® Model IE™ Ram Type Hydraulic Forged Blowout Preventer (BOP) is used to contain wellbore pressure for onshore and inland water drilling and workover service. The IE™ Ram BOP provides a rugged, reliable operations that is proven to be easy to maintain with a long history of field proven reliability. INTEGRATED® BOPs are manufactured in accordance with API 16A, 6A & 20E specifications and standards.

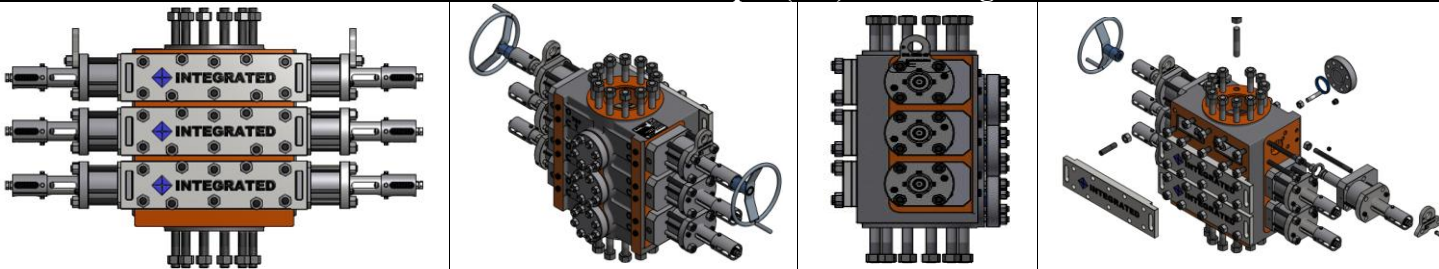
INTEGRATED® 7-1/16" & 9" Single (SR) Ram Forged IE™ BOP



INTEGRATED® 7-1/16" & 9" Double (DR) Ram Forged IE™ BOP



INTEGRATED® 7-1/16" & 9" Triple (TR) Ram Forged IE™ BOP



PRODUCT SPECIFICATIONS

- Designed and manufactured ISO 13533 (API 16A) for Drill-through equipment
- API 16A 4th Edition Monogrammed
- Designed as standard to ISO 15156-1 (NACE MR-0175) for use in hydrogen sulfide environments (H2S)
- Material: Fully Forged AISI 4130, 75k
- Temperature Class: T-20/250 | Non-Metallic Seal Temperature Rating: BGB
- Quality Level: PR1
- Xylan coated internals for operational performance and corrosion control
- Manual Ram locking device
- Interchangeable parts between 3,000 and 5,000 psi IE™ models
- The hydraulic fluid wetted dynamic sealing surfaces are QPQ coated to assuring maximum performance
- Ring Grooves are standard carbon steel. Stainless Steel 316 and Inconel 625 inlays are available.
- All combinations of industry standard end connections (Std x Std - Standard | Std x Flg | Flg x Std | Flg x Flg are available for easy integration into a blowout preventer stack.

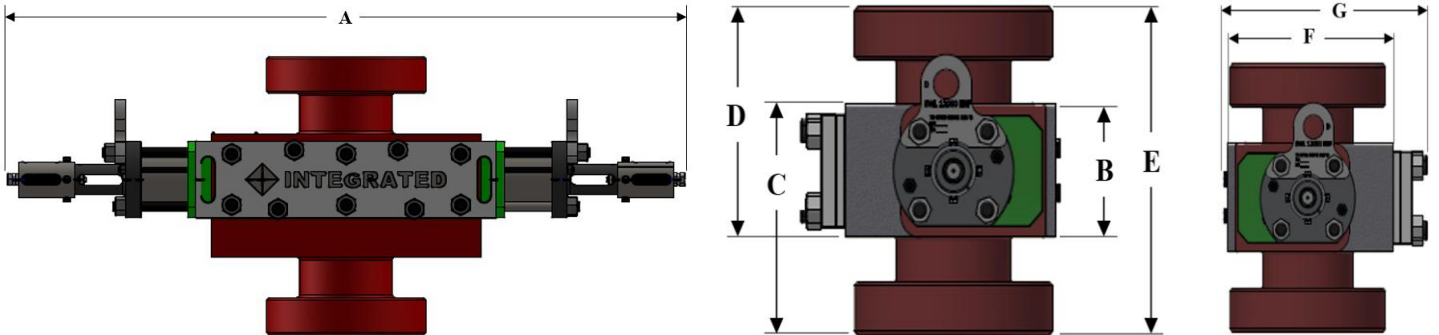
PRODUCT FEATURES AND BENEFITS

- Easy field maintenance. All components with dynamic sealing surfaces in the bonnet assembly can be replaced in the field.
- Large assortment of ram sizes available (CSO, Pipe – 1.66" through 5-1/2")
- INTEGRATED IE™ Ram Carded Seal Kit (per cavity) Part Number: 70-102-041k
- INTEGRATED IE™ Ram Door Seal (Molded) Part Number: 17-110-102
- The component parts of a Model IE™ BOP are suitable for use as replacement parts for most WSI style (such as T81) ram type BOPs

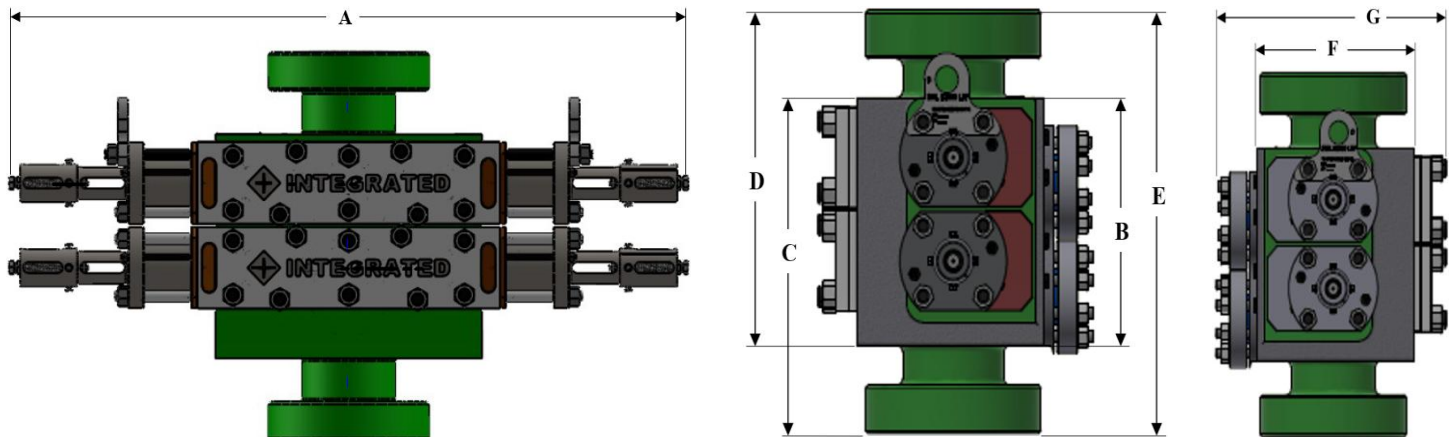
INTEGRATED® OEM API 16A MONOGRAMMED
TYPE IE™ RAM BLOWOUT PREVENTER

PRODUCT DIMENSIONS AND WEIGHTS

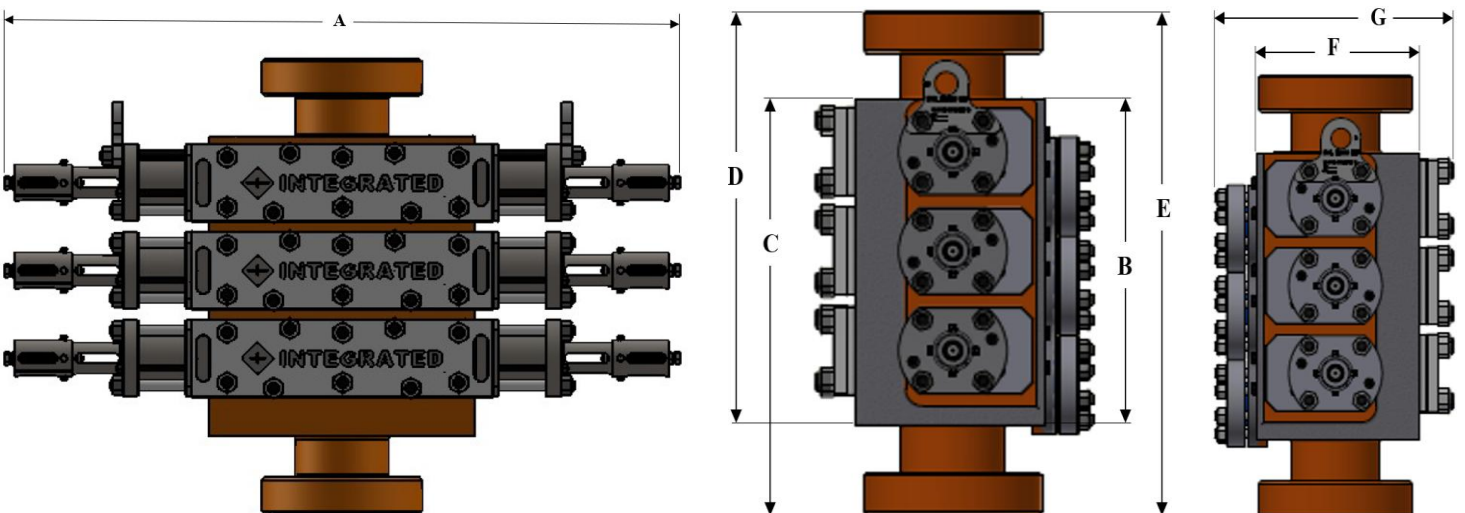
7-1/16" & 9" Single (SR) Ram IE™ BOP



7-1/16" & 9" Double (DR) Ram IE™ BOP



7-1/16" & 9" Triple (TR) Ram IE™ BOP



**INTEGRATED® OEM API 16A MONOGRAMMED
TYPE IE™ RAM BLOWOUT PREVENTER**

PRODUCT DIMENSIONS AND WEIGHTS

SINGLE, DOUBLE & TRIPLE RAM IE™ BLOWOUT PREVENTER DIMENSIONS

Bore Size		Pressure Rating		Number of Cavities	A Length Operators		B Height Std x Std		C Height Std x Flg		D Height Flg x Std		E Height Flg x Flg		F Width Body		G Width Door to Outlet	
in.	mm	psi	bar		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
7-1/16	179	3k/5k	207/345	Single	65.30	1659	9.00	229	15.62	397	15.62	397	22.20	564	16.50	419	20.30	516
7-1/16	179	3k/5k	207/345	Double	65.30	1659	18.70	475	25.31	643	25.31	643	31.93	811	16.50	419	24.10	612
7-1/16	179	3k/5k	207/345	Triple	65.30	1659	28.25	718	35.87	911	35.87	911	43.50	1105	16.50	419	24.10	612
9	229	3k/5k	207/345	Single	72.18	1833	13.00	330	20.01	508	20.01	508	27.14	689	19.93	506	26.40	671
9	229	3k/5k	207/345	Double	72.18	1833	21.27	540	28.34	720	28.51	720	35.40	899	19.93	506	26.40	671
9	229	3k/5k	207/345	Triple	72.18	1833	30.85	784	37.92	963	37.92	963	44.98	1142	19.93	506	26.40	671

SINGLE, DOUBLE & TRIPLE RAM IE™ BLOWOUT WEIGHTS

Bore Size		Pressure Rating		Number of Cavities	Connects		Outlet		Weight	
in.	mm	psi	bar		Top	Bottom	Size	Connection	lbs	kgs
7-1/16	179	3k/5k	207/345	Single	Studded	Studded	2-1/16" (1)	Studded	1699	771
7-1/16	179	3k/5k	207/345	Single	Studded	Flange	2-1/16" (1)	Studded	1831	831
7-1/16	179	3k/5k	207/345	Single	Flanged	Studded	2-1/16" (1)	Studded	1831	831
7-1/16	179	3k/5k	207/345	Single	Flanged	Flanged	2-1/16" (1)	Studded	1963	891
7-1/16	179	3k/5k	207/345	Double	Studded	Studded	2-1/16" (2)	Studded	2547	1155
7-1/16	179	3k/5k	207/345	Double	Studded	Flange	2-1/16" (2)	Studded	2662	1207
7-1/16	179	3k/5k	207/345	Double	Flanged	Studded	2-1/16" (2)	Studded	2662	1207
7-1/16	179	3k/5k	207/345	Double	Flanged	Flanged	2-1/16" (2)	Studded	2938	1334
7-1/16	179	3k/5k	207/345	Triple	Studded	Studded	2-1/16" (3)	Studded	3791	1720
7-1/16	179	3k/5k	207/345	Triple	Studded	Flange	2-1/16" (3)	Studded	3855	1749
7-1/16	179	3k/5k	207/345	Triple	Flanged	Studded	2-1/16" (3)	Studded	3855	1749
7-1/16	179	3k/5k	207/345	Triple	Flanged	Flanged	2-1/16" (3)	Studded	4026	1828
9	229	3k/5k	207/345	Single	Studded	Studded	2-1/16" (1)	Studded	2001	908
9	229	3k/5k	207/345	Single	Studded	Flange	2-1/16" (1)	Studded	2130	966
9	229	3k/5k	207/345	Single	Flanged	Studded	2-1/16" (1)	Studded	2130	966
9	229	3k/5k	207/345	Single	Flanged	Flanged	2-1/16" (1)	Studded	2260	1025
9	229	3k/5k	207/345	Double	Studded	Studded	2-1/16" (2)	Studded	3337	1514
9	229	3k/5k	207/345	Double	Studded	Flange	2-1/16" (2)	Studded	3482	1579
9	229	3k/5k	207/345	Double	Flanged	Studded	2-1/16" (2)	Studded	3482	1579
9	229	3k/5k	207/345	Double	Flanged	Flanged	2-1/16" (2)	Studded	3584	1626
9	229	3k/5k	207/345	Triple	Studded	Studded	2-1/16" (3)	Studded	4622	2097
9	229	3k/5k	207/345	Triple	Studded	Flange	2-1/16" (3)	Studded	4782	2169
9	229	3k/5k	207/345	Triple	Flanged	Studded	2-1/16" (3)	Studded	4782	2169
9	229	3k/5k	207/345	Triple	Flanged	Flanged	2-1/16" (3)	Studded	4910	2227

**INTEGRATED® OEM API 16A MONOGRAMMED
TYPE IE™ RAM BLOWOUT PREVENTER**

PRODUCT OPERATING DATA AND FLUID REQUIREMENT

All INTEGRATED® Model **IE™** ram type blowout preventers are supplied with labeled “OPEN” and “CLOSED” ports located on the body of the blowout preventers. The connections to the hydraulic operating system of the blowout preventer are 1/2” NPT.

**IE™ STANDARD OPERATOR BONNET
HYDRAULIC OPERATING DATA**

Specification	Bore Size & Pressure Rating	BOP Size & Pressure Rating	BOP Size & Pressure Rating	BOP Size & Pressure Rating
	7-1/16”	7-1/16”	9”	9”
Working Pressure	3000 psi	5000 psi	3000 psi	5000 psi
Minimum Operating Pressure to Open & Close (psi)	1500	1500	1500	1500
Hydraulic Operating Pressure to Open & Close (psi)	1500	1500	1500	1500
Ratio to Close	4.8:1	4.8:1	7.3:1	7.3:1
Volume of Fluid to Open (US gal)	.31	.31	.66	.66
Volume of Fluid to Close (US gal)	.33	.33	.70	.70

RING GROOVE SIZES

7-1/16” x 3k R45	7-1/16” x 5k R46	9” x 3k R49	9” x 5k R50	2-1/16” x 5k R24
---------------------	---------------------	----------------	----------------	---------------------

**INTEGRATED® OEM API 16A MONOGRAMMED
TYPE IE™ RAM BLOWOUT PREVENTER**

IE™ BOP COMPLETE PART NUMBERS:

SINGLE (SR) RAM FORGED IE™ BOP PART NUMBERS

Bore Size		Pressure		Connections		Outlets (1) (2-1/16" – 5k)	BOP Part Number
(in.)	(mm)	(psi)	(kPa)	Top	Bottom		
7-1/16	179	3000	20,684	Studded	Studded	Studded	70-0703-00236
7-1/16	179	3000	20,684	Studded	Flanged	Studded	70-0703-00234
7-1/16	179	3000	20,684	Flanged	Studded	Studded	70-0703-00235
7-1/16	179	3000	20,684	Flanged	Flanged	Studded	70-0703-00236
7-1/16	179	5000	34,474	Studded	Studded	Studded	70-0705-00520
7-1/16	179	5000	34,474	Studded	Flanged	Studded	70-0705-00518
7-1/16	179	5000	34,474	Flanged	Studded	Studded	70-0705-00519
7-1/16	179	5000	34,474	Flanged	Flanged	Studded	70-0705-00517
9	229	3000	20,684	Studded	Studded	Studded	70-0903-00102
9	229	3000	20,684	Studded	Flanged	Studded	70-0903-00103
9	229	3000	20,684	Flanged	Studded	Studded	70-0903-00104
9	229	3000	20,684	Flanged	Flanged	Studded	70-0903-00105
9	229	5000	34,474	Studded	Studded	Studded	70-0905-00020
9	229	5000	34,474	Studded	Flanged	Studded	70-0905-00021
9	229	5000	34,474	Flanged	Studded	Studded	70-0905-00022
9	229	5000	34,474	Flanged	Flanged	Studded	70-0905-00023

DOUBLE (DR) RAM FORGED IE™ BOP PART NUMBERS

Bore Size		Pressure		Connections		Outlets (2) (2-1/16" – 5k)	BOP Part Number
(in.)	(mm)	(psi)	(kPa)	Top	Bottom		
7-1/16	179	3000	20,684	Studded	Studded	Studded	70-0703-00067
7-1/16	179	3000	20,684	Studded	Flanged	Studded	70-0703-00068
7-1/16	179	3000	20,684	Flanged	Studded	Studded	70-0703-00069
7-1/16	179	3000	20,684	Flanged	Flanged	Studded	70-0703-00070
7-1/16	179	5000	34,474	Studded	Studded	Studded	70-0705-00468
7-1/16	179	5000	34,474	Studded	Flanged	Studded	70-0705-00469
7-1/16	179	5000	34,474	Flanged	Studded	Studded	70-0705-00470
7-1/16	179	5000	34,474	Flanged	Flanged	Studded	70-0705-00471
9	229	3000	20,684	Studded	Studded	Studded	70-0903-00106
9	229	3000	20,684	Studded	Flanged	Studded	70-0903-00107
9	229	3000	20,684	Flanged	Studded	Studded	70-0903-00108
9	229	3000	20,684	Flanged	Flanged	Studded	70-0903-00109
9	229	5000	34,474	Studded	Studded	Studded	70-0905-00024
9	229	5000	34,474	Studded	Flanged	Studded	70-0905-00025
9	229	5000	34,474	Flanged	Studded	Studded	70-0905-00026
9	229	5000	34,474	Flanged	Flanged	Studded	70-0905-00027

TRIPLE (TR) RAM FORGED IE™ BOP PART NUMBERS

Bore Size		Pressure		Connections		Outlets (3) (2-1/16" – 5k)	BOP Part Number
(in.)	(mm)	(psi)	(kPa)	Top	Bottom		
7-1/16	179	3000	20,684	Studded	Studded	Studded	70-0703-00071
7-1/16	179	3000	20,684	Studded	Flanged	Studded	70-0703-00072
7-1/16	179	3000	20,684	Flanged	Studded	Studded	70-0703-00073
7-1/16	179	3000	20,684	Flanged	Flanged	Studded	70-0703-00074
7-1/16	179	5000	34,474	Studded	Studded	Studded	70-0705-00472
7-1/16	179	5000	34,474	Studded	Flanged	Studded	70-0705-00473
7-1/16	179	5000	34,474	Flanged	Studded	Studded	70-0705-00474
7-1/16	179	5000	34,474	Flanged	Flanged	Studded	70-0705-00475
9	229	3000	20,684	Studded	Studded	Studded	70-0903-00110
9	229	3000	20,684	Studded	Flanged	Studded	70-0903-00111
9	229	3000	20,684	Flanged	Studded	Studded	70-0903-00112
9	229	3000	20,684	Flanged	Flanged	Studded	70-0903-00113
9	229	5000	34,474	Studded	Studded	Studded	70-0905-00028
9	229	5000	34,474	Studded	Flanged	Studded	70-0905-00029
9	229	5000	34,474	Flanged	Studded	Studded	70-0905-00030
9	229	5000	34,474	Flanged	Flanged	Studded	70-0905-00031

**INTEGRATED® OEM API 16A MONOGRAMMED
TYPE IE™ RAM BLOWOUT PREVENTER**

IE™ RAM CARDED SEAL KITS & DOOR SEALS

Seal Kit Description	Size (in.)	Pressure (psi)	Part Number	Weight Per Kit	
				lbs	kgs
7-1/16" - 3/5k, IE™ Ram Hydraulic Standard Complete Seal Kit	7-1/16"	3/5k	70-IE81-5k	3.00	1.36
7-1/16" - 3/5k, IE™ Molded Door Seal	7-1/16"	3/5k	17-110-102	0.08	0.04
9" - 3/5k, IE™ Ram Hydraulic Standard Complete Seal Kit	9"	3/5k	70-1H9100	3.40	1.54
9" - 3/5k, IE™ Molded Door Seal	9"	3/5k	70-0451-9001	0.09	0.05



All Elastomers are manufactured by INTEGRATED ELASTOMERS® USA for use in qualified pressure control equipment (as per API 16A)



IE™ OPERATIONAL CHARACTERISTICS SUMMARY

IE™ STYLE RAM BOP VALIDATION RESULTS -API 16A 4 TH EDITION, PR1 PERFORMANCE CRITERIA)		
Item	Test	Results
1	SEALING TEST: (3-1/2" Pipe & Blind Rams)	<ol style="list-style-type: none"> BOP required 200 PSI Minimum Operating Pressure for Low Pressure Sealing (MOPFLPS) against zero wellbore pressure and 1900 PSI MOPFLPS against Elevated Wellbore pressure. No leakage observed when wellbore pressure reduces to 0 by maintaining operator pressure to 0 PSI. Ram blocks, packers and top seals qualified to PR2 performance criteria.
2	FATIGUE TEST: (3-1/2" Pipe & Blind Rams)	<ol style="list-style-type: none"> BOP meets and exceeds the requirement of 52 pressure cycles. BOP, Ram blocks, packers and top seals qualified to PR2 performance criteria.
3	STRIPPING TEST: (3-1/2" Pipe & Blind Rams)	<ol style="list-style-type: none"> Minimum 10,000 ft of pipe stripped through 3 1/2" Pipe Ram Block with maintaining leakage rate below 1 Gal./min. 3 1/2" Pipe Ram Block, packers and top seals qualified to PR2 performance criteria.
4	HANG-OFF TEST:	NA for 7-1/16" BOP Size
5	SHEAR TEST:	NA
6	RAM LOCKING DEVEICE TEST: (Blind Rams)	<ol style="list-style-type: none"> Ram locking device test was performed as a part of fatigue test with blind rams. BOP, Ram blocks, packers and top seals qualified to PR2 performant criteria.
7	RAM ACCESS: (Blind Rams)	<ol style="list-style-type: none"> Total 10 pressure cycles were carried out with 200 times accessing the rams. BOP qualified for PR2 performance criteria.
8	LOCKING MECHANISM TEST:	N/A
9	BOP TEMPERATURE RATING	Low Temperature 1. Total three pressure cycles were carried out with total 21 times closing and openings at -11°F. 2. BOP qualified for PR2 performance criteria.
		Continuous High Temperature Not performed (NA for PR1)
		Extreme High Temperature 1. Low- and High-pressure tests are carried out at 261°F with 60 minutes of holding time during high pressure. 2. BOP qualified to PR2 performance criteria.
10	RAM ASSEMBLY TEMPERATURE RATING (3-1/2" Pipe & Blind Rams)	Low Temperature 1. Total three pressure cycles were carried out with total 21 times closing and openings at -11°F. 2. Rams, packers, and top seals qualified to PR2 performance criteria.
		Continuous High Temperature Not performed (NA for PR1)
		Extreme High Temperature 1. Low- and High-pressure tests are carried out at 261°F with 60 minutes of holding time during high pressure. 2. Rams, packers, and top seals qualified to PR2performance criteria.
11	EXTERNAL PRSSURE DIFFERENTIAL CAPACITY OF ALL PROPRIETARY WELLBORE WETTED SEALS UTILIZED IN THE EQUIPMENT	N/A (This applies to BOPs and hydraulic connectors utilized in subsea applications)

**INTEGRATED® OEM API 16A MONOGRAMMED
TYPE IE™ RAM BLOWOUT PREVENTER**

IE™ RAM BONNET ASSEMBLY BREAKDOWN

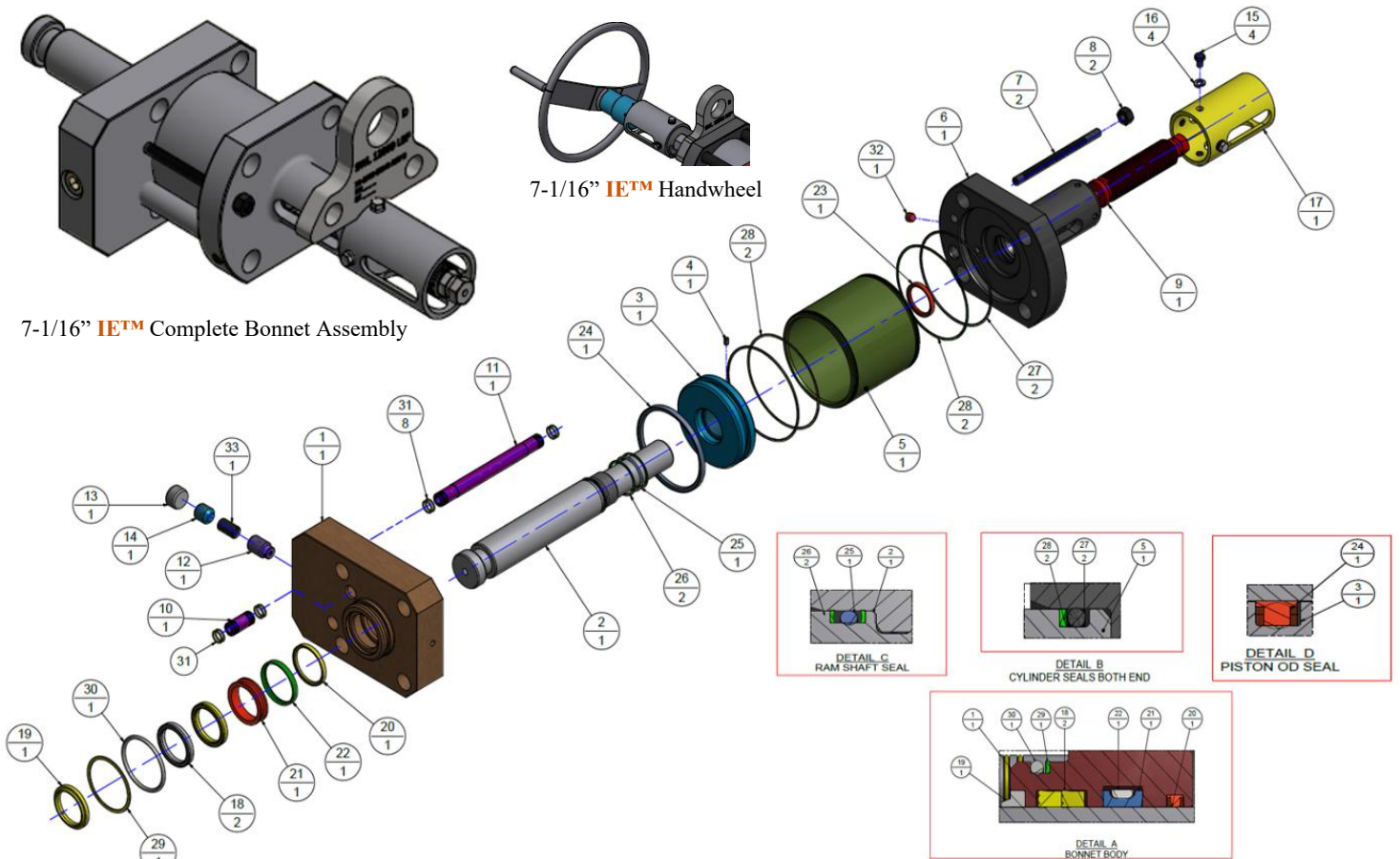
7-1/16" – 3/5k IE™ Complete Bonnet Assembly Part Number

Right Hand (RH) Bonnet Assembly: 70-201-001 | Left Hand (LH) Bonnet Assembly: 70-201-002

Part Description	Drawing Item No.	Qty	Individual Component Part No.
Bonnet Body, RH RBOP 9" IE	1	1	70-200-010
Bonnet Body, LH RBOP 9" IE	1	1	70-200-009
Piston Rod (AISI 4130)	2	1	70-200-015
Bonnet Piston	3	1	70-200-008
Set Screw, Cone Point	4	1	26-014-050
Bonnet Cylinder	5	1	70-200-002
End Cover, RH	6	1	70-200-004
End Cover, LH	6	1	70-200-005
Pad Stud	7	2	25-100-020
Heavy Hex Nut	8	2	25-100-007
Locking Screw	9	1	70-200-014
Seal Sleeve, Short	10	1	70-200-011
Seal Sleeve, Long	11	1	70-200-012
Check Valve	12	1	26-016-001
Pipe Plug, Socket Heat	13	1	15-010-150
Set Screw, Flat Point	14	1	26-014-350
Screw Hex Head	15	4	26-012-080
Lock Washer	16	4	26-017-003
Protector Sleeve	17	1	70-200-007

Part Description	Drawing Item No.	Qty	Individual Component Part No.
Polypak Seal	18	2	17-091-001
Wipper Ring	19	1	17-085-001
T-Seal, Rod, TR029	20	1	17-081-129
Packing Ring	21	1	17-080-001
Energizing Ring	22	1	17-080-002
T-Seal, Rod TP051	23	1	17-081-125
T-Seal, Piston, TP051	24	1	17-081-051
O-Ring, Dash 226	25	1	17-090-106
Parbak Ring, Dash 226	26	2	17-091-106
O-Ring, Dash 257	27	2	17-090-105
Parbak Ring, Dash 257	28	2	17-091-105
Parbak Ring, Dash 339	29	1	17-101-110
O-Ring, (2-339) (HNBR)	30	1	17-100-110
O-Ring, Dash 017	31	8	17-070-100
Pipe Plug, Socket 1/4 NPT	32	1	15-010-100
Plastic Packing Tube	33	1	17-080-000
Handwheel Assembly	-	2	31-002225
*Lifting Plate RBOP (7"/9")	-	2	70-0705-00043

*Lifting Plates are made from AISI 4130 steel. There load capacity is 20,000 lbs per plate (if spreader bar is used)



**INTEGRATED® OEM API 16A MONOGRAMMED
TYPE IE™ RAM BLOWOUT PREVENTER**

IE™ RAM BONNET ASSEMBLY BREAKDOWN

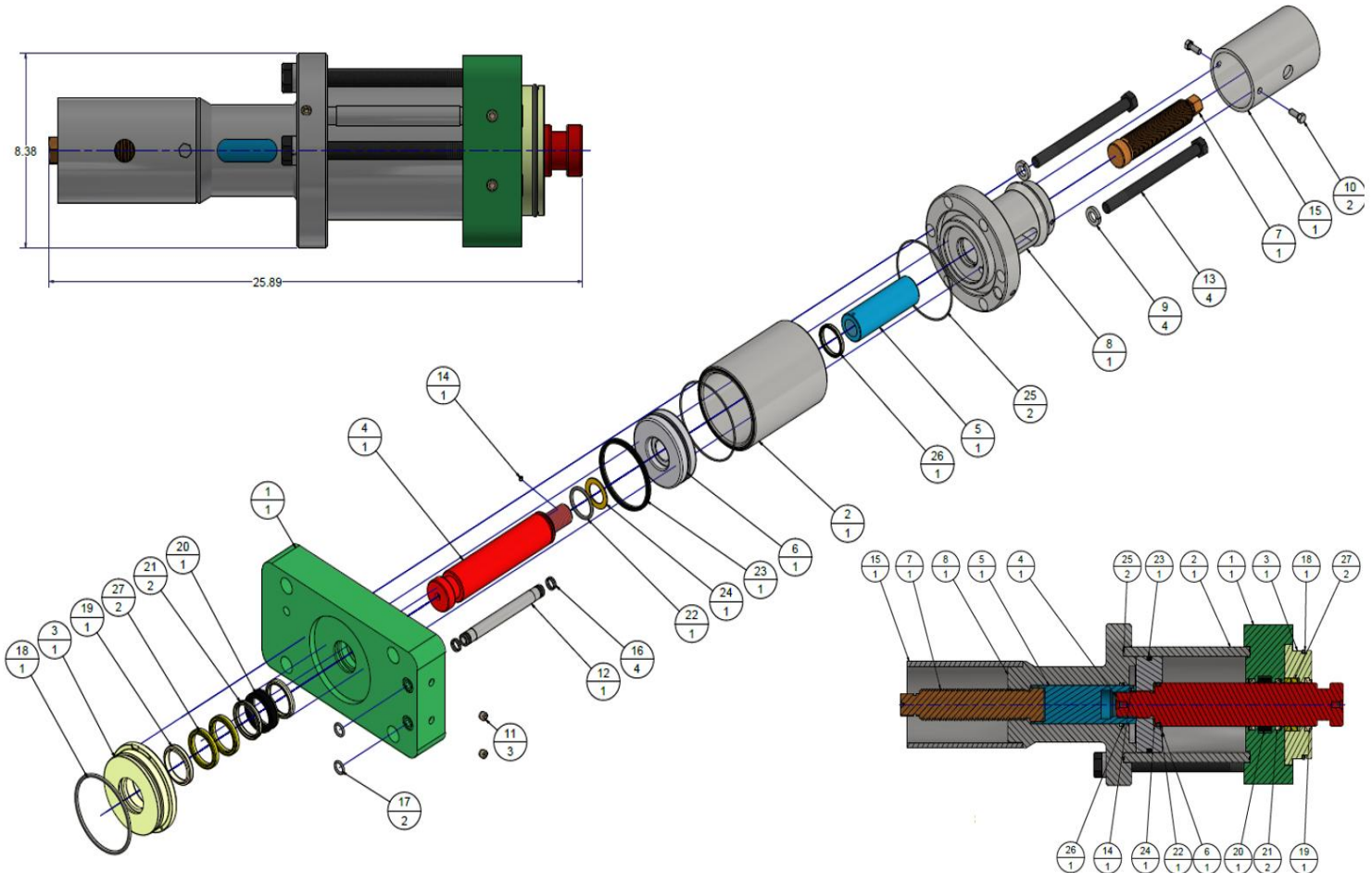
9" – 3/5k IE™ Complete Bonnet Assembly Part Number

Right Hand (RH) Bonnet Assembly: 70-0905-00088 | Left Hand (LH) Bonnet Assembly: 70-0905-00087

Part Description	Drawing Item No.	Qty	Individual Component Part No.
Bonnet Body, RH RBOP 9" IE	1	1	70-0903-00030
Bonnet Body, LH RBOP 9" IE	1	1	70-0903-00031
Bonnet Cylinder, RBOP 9"	2	1	70-0903-00032
Packing Gland IE RBOP 9"	3	1	70-0903-00044
Ram Shaft IE RBOP 9"	4	1	70-0903-00040
Balance Stem I-81 9"	5	1	70-0903-00043
Piston, IE RBOP 9"	6	1	70-0903-00045
Locking Screw, 9"	7	1	70-0903-00041
Bonnet LH, I-81 9"	8	1	70-0903-00051
Bonnet RH, I-81 9"	8	1	70-0903-00052
Lock Washer, Helical Spring .75 Nominal	9	6	30-000118
Hex Bolt 3/8"-16 UNC 1.00" LG	10	2	30-000093
Pipe Plug, Socket Head, 1/4" NPT	11	3	15-010-100
Manifold Tube IE RBOP 9" MWP	12	1	70-0903-00049
Heavy Hex Head Bolt, 3/4-10UNC x 9 LG.	13	6	31-001475
Hex. SH Setscrew 1/4-20 x .31 CP	14	1	30-000092

Part Description	Drawing Item No.	Qty	Individual Component Part No.
Protector M.O.R., I-81 RBOP 9"	15	1	70-0903-00042
IE Manifold Tube O-Ring	16	4	30-000472
IE End Cover Port O-Ring	17	2	30-000500
IE Manifold Packing Glad OD O-Ring	18	1	30-000496
IE Packing Glad I.D. Wiper Seal	19	1	30-000497
IE Ram Shaft Bore Seal	20	1	30-000498
IE End Cover Seal	21	2	30-000499
IE Piston to Ram Shaft O-Ring	22	1	30-000502
IE Piston Crown Seal	23	1	30-000501
Brass Spacer Ring	24	1	30-000503
IE Cylinder O-Ring	25	2	30-000504
IE Inside Bonnet Seal	26	1	30-000505
Polypak Seal	27	2	17-091-001
Handwheel Assembly	-	2	31-002225
*Lifting Plate RBOP (7"/9")	-	2	70-0705-00043

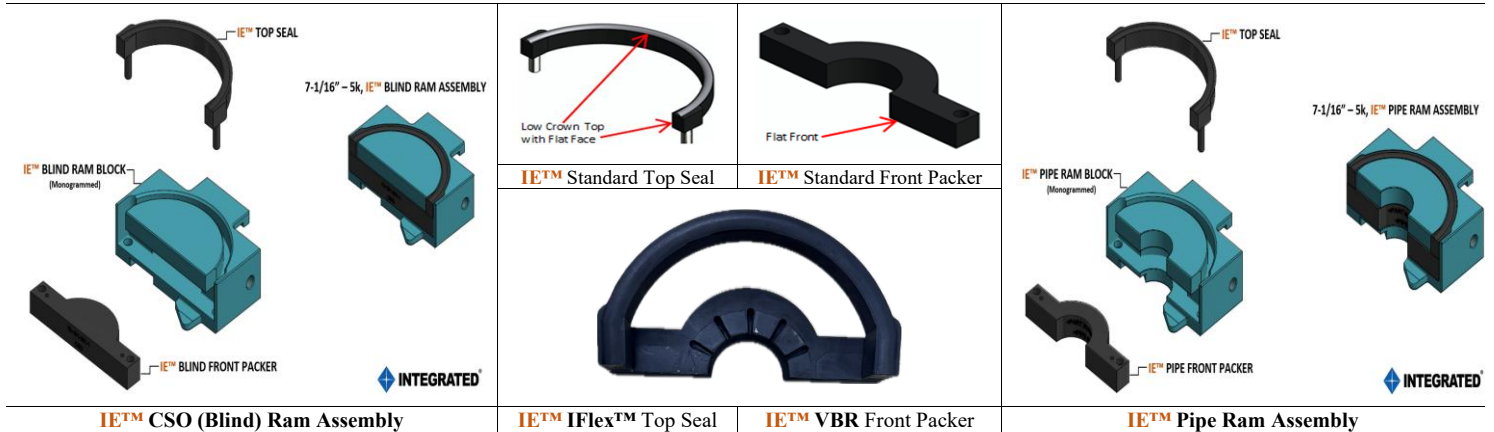
*Lifting Plates are made from AISI 4130 steel. There load capacity is 20,000 lbs per plate (if spreader bar is used)



**INTEGRATED® OEM API 16A MONOGRAMMED
TYPE IE™ RAM BLOWOUT PREVENTER**

IE™ 7-1/16" – 3/5K

RAM ASSEMBLY | RAM BLOCKS | FRONT PACKERS | IFLEX™ | VBR | TOP SEALS



IE™ - CSO AND PIPE RAMS

IE™ Ram Size	IE™ Complete Assembly Part Number	IE™ Assembly Sub-Component Part Number		
		Ram Block API 16A Monogrammed (require 2 pieces)	Front Packer Material - XNBR (require 2 pieces)	Top Seal Material - XNBR (require 2 pieces)
CSO (blind)	70-203-001	70-202-001	70-101-001-1	70-101-000-FL
1.66"	70-203-001-15	70-202-001-0	70-101-002-15	70-101-000-FL
1.90"	70-203-001-1	70-202-001-1	70-101-002-1	70-101-000-FL
2-1/16"	70-203-001-11	70-202-001-11	70-101-002-11	70-101-000-FL
2-3/8"	70-203-001-2	70-202-001-2	70-101-002-2	70-101-000-FL
2-7/8"	70-203-001-3	70-202-001-3	70-101-002-3	70-101-000-FL
3-1/2"	70-203-001-5	70-202-001-5	70-101-002-5	70-101-000-FL
4"	70-203-001-6	70-202-001-6	70-101-002-6	70-101-000-FL
4-1/2"	70-203-001-7	70-202-001-7	70-101-002-7	70-101-000-FL
5"	70-203-001-8	70-202-001-8	70-101-002-8	70-101-000-FL
5-1/2"	70-203-001-13	70-202-001-13	70-101-002-13	70-101-000-FL

IE™ - IFLEX™

IE™ IFLEX™ Sizes	IE™ IFLEX™ Complete Assembly Part Number	IFLEX™ Assembly Sub-Component Part Number		
		Ram Block API 16A Monogrammed (require 2 pieces)	IFlex™ Front Packer Material - XNBR (require 2 pieces)	Top Seal Material - XNBR (require 2 pieces)
2-3/8" to 2-7/8"	70-203-001-25	70-202-001-3	70-0705-00211	70-101-000-FL
2-7/8" to 3-1/2"	70-203-001-26	70-202-001-5	70-0705-00350	70-101-000-FL

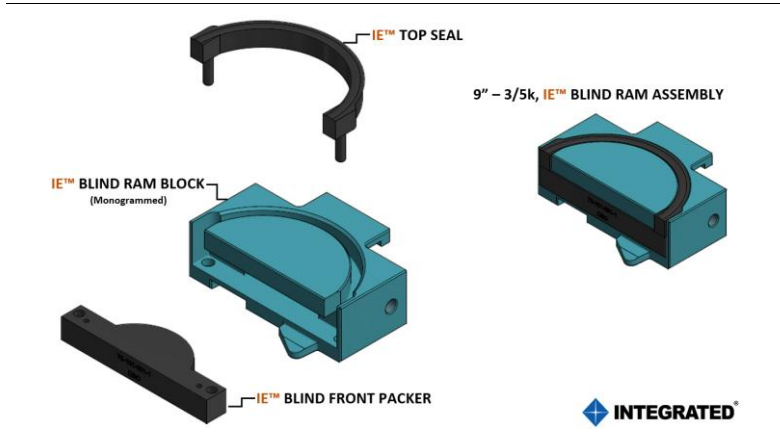
IE™ - Variable Bore Ram (VBR)

IE™ IVBR™ Size	IFLEX™ Complete Assembly Part Number	IVBR™ Assembly Sub-Component Part Number		
		Ram Block API 16A Monogrammed (require 2 pieces)	VBR™ Front Packer Material - NBR (require 2 pieces)	VBR™ Top Seal Material - XNBR (require 2 pieces)
2-3/8" to 2-7/8"	70-203-001-27	70-202-001-3	70-0705-00447	70-101-000-VBR

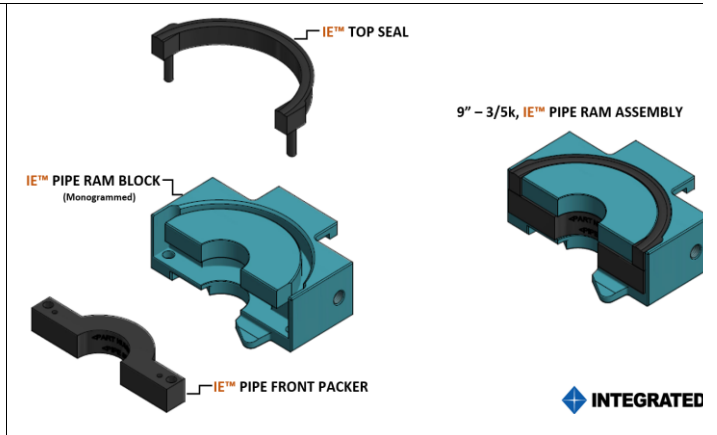
**INTEGRATED® OEM API 16A MONOGRAMMED
TYPE IE™ RAM BLOWOUT PREVENTER**

IE™ 9" – 3/5K

RAM ASSEMBLIES | RAM BLOCKS | FRONT PACKERS | TOP SEALS



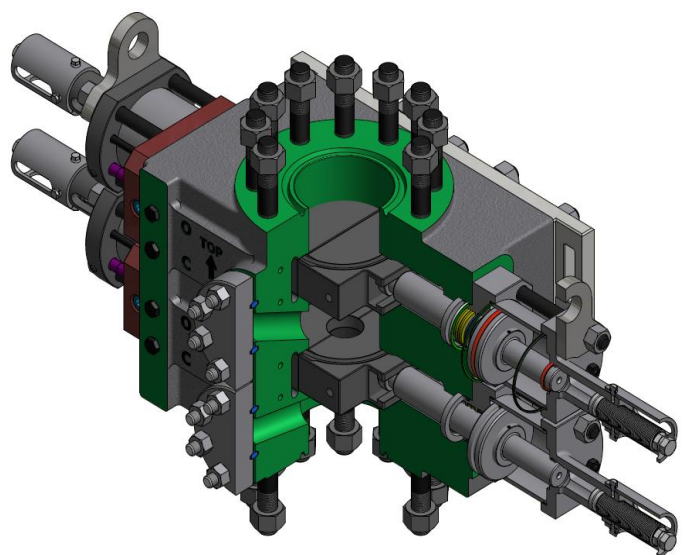
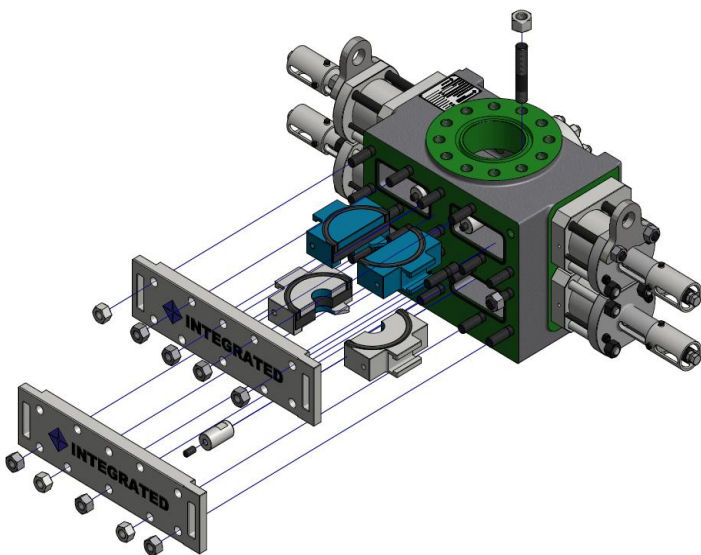
IE™ CSO (Blind) Ram Assembly



IE™ Pipe Ram Assembly

IE™ - CSO AND PIPE RAMS

IE™ Ram Size	IE™ Assembly Part Number	IE™ Assembly Sub-Component Part Number		
		Ram Block API 16A Monogrammed (require 2 pieces)	Front Packer Material - XNBR (require 2 pieces)	Top Seal Material - XNBR (require 2 pieces)
CSO (blind) (Radius)	70-0905-2000	70-0905-1000	70-102-002-2	70-102-000
2-3/8"	70-0905-2238	70-0905-1238	70-102-002-3	70-102-000
2-7/8"	70-0905-2278	70-0905-1278	70-102-002-5	70-102-000
3-1/2"	70-0905-2312	70-0905-1312	70-102-002-6	70-102-000
4"	70-0905-2400	70-0905-1400	70-102-002-7	70-102-000
4-1/2"	70-0905-2412	70-0905-1412	70-102-002-9	70-102-000
5"	70-0905-2500	70-0905-1500	70-102-002-19	70-102-000
5-1/2"	70-0905-2512	70-0905-1512	70-102-002-15	70-102-000






GLOBAL HEADQUARTERS

5701 Brittmoores Road, Houston, Texas USA 77041

Contact: 713-785-7075 | Fax: 713-785-7099 | Email: sales@integratedwww.com | Website: www.integratedwww.com



West Texas, USA Operations
13020 Hwy 191, Suite H
Midland, Texas USA 79707



Canada Operations
Edmonton, Canada
Alberta Corporate ULC



Dubai, UAE Operations



OEM Elastomer Manufacturing
31811 Industrial Park Drive
Pinehurst, Texas USA 77362



OEM Equipment Manufacturing
Pune-Nagar Highway, Kondhapuri
Pune 412209



South America Operations
Edificio PH909, Calle 50 y Calle Este
San Francisco, Republica of Panama

IE™ Ram BOP Electronic Catalog



Elastomer Electronic Catalog



INTEGRATED® Website



BH/2026