



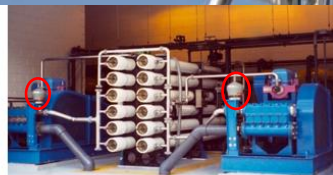
INTEGRATED®

PULSATION DAMPENER 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, CRN & ASME Standards & Specifications.

INTEGRATED manufactures Pulsation Dampeners for use in Oil & Gas Production and Drilling applications. Additionally, our Pulsation Dampeners are used in the Pipeline sector as well as Petro Chemical, Mining and all associated pumping services (suction & discharge).



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

INTEGRATED OEM ASME U PULSATON DAMPENERS IKD™ (K Style) and IPD™ (IP Style)

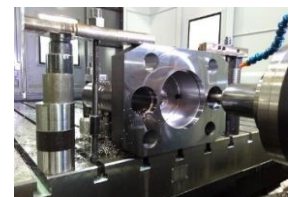
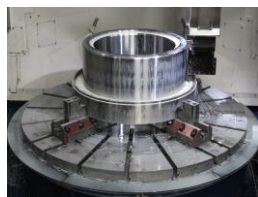
INTEGRATED OEM MANUFACTURED – API MONOGRAMMED EQUIPMENT & PRODUCTS

API 6A	API 6A	API 6A - API 6C	API 16A	API 16A API 16AR	API 20E	ASME U CRN	API 16A - ISO AQ
WELLHEAD COMPONENTS	PRESSURE CONTROL VALVES	CHOKE & KILL MANIFOLDS	BLOWOUT PREVENTERS (BOP) RAM BLOCKS	REMANUFACTURING RECERTIFICATION SERVICE	BSL BOLTING	PULSATION DAMPENERS	ELASTOMERS OEM & SPARES
Tubing & Casing Spools	IFC™ Slab Gate Valves 1-13/16" to 4-1/2"	Drilling Choke Manifolds	7-1/16" IE™ Style: Single, Double & Triple Ram BOPs	BOPs: Annular & Ram All Major OEM Brands	Ram & Annular BOP Bolting	PPD (Production Pulsation Damper) Sizes: 1, 2.5, 5, 10 & 20 gal units Pressure: up to 7,500 psi	BOP Annular Packing Elements (Materials: NR, NBR & HNBR)
Tubing & Casing Hangers	DrillFLO™ Slab Gate Valves (bi-directional & 3G) 2-1/16" to 7-1/16"	Kill Manifolds	9" IWP™ Style: Single & Double Ram BOPs	Choke & Kill Manifolds	Valve Bolting	DPD (Drilling Pulsation Damper) Sizes: 10 & 20 gal units Pressure: up to 7,500 psi	BOP Ram Front Packers, Top Seals & Door Seals
Tree Caps	AceFLO™ Expanding Gate Valves (bi-directional & 3G) 2-1/16" to 7-1/16"	Frac Flow Back Manifolds	11" & 13-5/8" IWS™ Style: Single & Double Ram BOPs	API Valves (FC, FLS, Etc.)			BOP Annular & Ram Repair Carded Seal Kits
Tees & Crosses			7-1/16" through 13-5/8" IU™ Style: Single & Double Ram BOPs (Shear & Non-Shear)	Pulsation Dampeners			Pulsation Damper Diaphragms (Bladders)
Companion Flanges			7-1/16" through 21-1/4" ISA™ Style: Spherical Annular BOPs				Pipe Wipers & Stripper Rubbers
PE Seals			7-1/16" through 13-5/8" IK™ Style: GK Annular BOP				Custom Manufacturing
			7-1/16" through 13-5/8" Ram Blocks (IE™ , IWP™ , I70™ & IU™)				

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 ASME U
PULSATON DAMPENERS IKD™ (K Style) and IPD™ (IP Style)****INDEX**

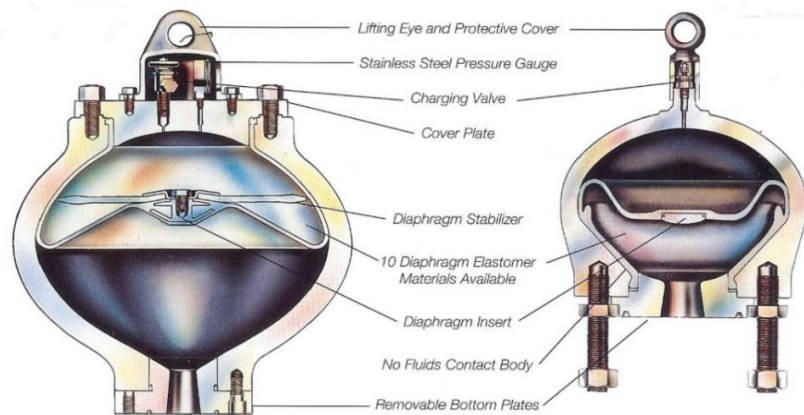
1	GENERAL INFORMATION	Page No.
	➤ Integrated Manufactured API Monogrammed Pressure and Flow Control Equipment and Products	2
2	PULSATION DAMPENER – PRODUCTION: IPD™ AND DRILLING: IKD™	
	➤ General Information	4
	➤ Product Features and Benefits	4
3	PULSATION DAMPENER – SIZES, PRESSURES & PART NUMBERS	
	➤ Sizes: IPD™ - 1, 2.5, 5, 10 and 20 gallons IKD™ – 10 and 20 gallons	5
	➤ Pressure Ratings: 285 psi, 1480 psi, 3705 psi and 6,170	5
	➤ Part Numbers	5
4	PULSATION DAMPENER ENGINEERING DATA	
	➤ Dimensions	6
	➤ Weights	6
5	INTEGRATED MANUFACTURED PULSATION DAMPENER DIAPHRAGMS (Bladders)	
	➤ Production Dampeners (IPD™) Diaphragms	7
	➤ Drilling Dampener (IKD™) Diaphragms	7
	➤ Emsco Diaphragms	7
6	PULSATION DAMPENER MISCELLANOUS PARTS	
	➤ Charging Hoses	8
	➤ Charging Valves	8
	➤ Stabilizers	8
7	DIAPHRAGM MATERIAL OPTIONS	
	➤ Material: NBR (ACRYLONITRILE BUTADIENE POLYMER)	9
	➤ Material: HNBR (HYDROGENATED ACRYLONITRILE BUTADIENE POLYMER)	9
	➤ Material: FKM (FLUOROCARBON POLYMER)	9
	➤ Material: URETHANE	
8	ELASTOMER MATERIAL TECHNICAL DATA	
	➤ Material Compatibility	10
	➤ Material Operating Temperatures	10
	➤ Material Storage Guidelines	11
9	INTEGRATED PULSATION DAMPENERE SIZING PROGRAM	
	➤ Application Questionnaire	12
10	INTEGRATED CONTACT INFORMATION	
	➤ Locations Address Contact Numbers Email Address Website ARLS & SSP	13

**INTEGRATED OEM ASME U
PULSATON DAMPENERS IKD™ (K Style) and IPD™ (IP Style)****PULSATION DAMPENER GENERAL INFORMATION**

- **IPD™ – Product Pulsation Dampeners (IP Style)**
- **IKD™ – Drilling Pulsation Dampeners (K Style)**

A Pulsation Dampener is an accumulator designed to absorb pressure pulsations created by reciprocating pumps. Pulsation Dampeners are used to reduce wear and tear on all system components including the pump.

INTEGRATED® (OEM) manufactures Pulsation Dampeners for use with all makes and types of reciprocating pumps in the upstream sector - Oilfield Service sector (Workover, Drilling, Production – Suction & Discharge, Fluid End Pumping and Pipeline), Mining, Petro Chemical and Reverse Osmosis markets as well as Mid-Stream Pipeline.

**DRILLING PULSATION DAMPENER (DPD - IKD™)****PRODUCTION PULSATION DAMPENER (DPD - IPD™)****PRODUCT FEATURES AND BENEFITS**

- **PRODUCTION PULSATION DAMPENER - IPD™ STYLE:** ASME Code Stamping, ABS, CRN (Canadian) & DNV
 - Short, compact design requires no external bracing or other support structure
 - Isolated body cavity keeps the fluid in the diaphragm
 - Replaceable CS, SS or Duplex style bottom plates
 - Fully enclosed and protected charging valve assembly
 - Oil & Gas Production, Saltwater Injection & Disposal, Reverse Osmosis, Petro-Chemical & Mining
 - High pre-charge capability delivers excellent dampening performance. A minimum of 85% reduction in peak-to-peak pressure performance is achieved
- **DRILLING PULSATION DAMPENER - IKD™ STYLE:** ASME Code Stamping, ABS, CRN (Canadian) & DNV
 - Forged body construction designed in accordance with ASME codes
 - Inside surface machined for smooth diaphragm movement
 - Field replaceable top and bottom plates reducing downtime
 - Diaphragm equipped with stabilizer to eliminate possible folding and entrapment of fluids
 - Field replaceable diaphragms reduce maintenance time
 - Diaphragms can be replaced without removing the unit from line
 - All PD Elastomer components (original or spare parts) are under the direct INTEGRATED engineering design and quality control (standard OEM warranty).

INTEGRATED OEM ASME U PULSATON DAMPENERS IKD™ (K Style) and IPD™ (IP Style)

PULSATION DAMPENER STYLE, SIZES, PRESSURE RATING AND PART NUMBERS

PRODUCTION PULSATION DAMPENER (PPD)

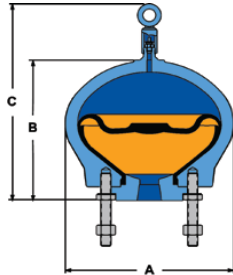
Part Description	Part Number	PPD Component Description				
		Size (gals)	Pressure Rating	Bottom Plate	Diaphragm Material	ASME U Stamped
PPD-1-285-HNBR-SS-3"-ANSI 150 RF-ASME	73-010285-211-1-U1	1	285	SS-3"-ANSI 1500-RF	HNBR	Yes
PPD-1-285-HNBR-DUPLEX-3"-ANSI 150 RF-ASME	73-010285-211-3-U1	1	285	DUPLEX-3"-ANSI 150-RF	HNBR	Yes
PPD-1-1480-HNBR-SS-3"-ANSI 600 RF-ASME	73-011480-211-1-U1	1	1480	SS-3"-ANSI 600-RF	HNBR	Yes
PPD-1-1480-HNBR-DUPLEX-3"-ANSI 600 RF-ASME	73-011480-211-1-U1	1	1480	DUPLEX-3"-ANSI 600-RF	HNBR	Yes
PPD-1-3705-HNBR-SS-3"-ANSI 1500 RF-ASME	73-013705-211-1-U1	1	3705	SS-3"-ANSI 1500-RF	HNBR	Yes
PPD-1-3705-HNBR-DUPLEX-3"-ANSI 1500 RF-ASME	73-013705-211-1-U1	1	3705	DUPLEX-3"-ANSI 1500-RF	HNBR	Yes
PPD-1-6170-HNBR-SS-3"-ANSI 1500 RF-ASME	73-016170-211-1-U1	1	6170	SS-3"-ANSI 1500-RF	HNBR	Yes
PPD-1-6170-HNBR-DUPLEX-3"-ANSI 1500 RF-ASME	73-016170-211-1-U1	1	6170	DUPLEX-3"-ANSI 1500-RF	HNBR	Yes
PPD-2.5-285-HNBR-SS-3"-ANSI 150 RF-ASME	73-250285-211-1-U1	2.5	285	SS-3"-ANSI 1500-RF	HNBR	Yes
PPD-2.5-285-HNBR-DUPLEX-3"-ANSI 150 RF-ASME	73-250285-211-3-U1	2.5	285	DUPLEX-3"-ANSI 150-RF	HNBR	Yes
PPD-2.5-1480-HNBR-SS-3"-ANSI 600 RF-ASME	73-251480-211-1-U1	2.5	1480	SS-3"-ANSI 600-RF	HNBR	Yes
PPD-2.5-1480-HNBR-DUPLEX-3"-ANSI 600 RF-ASME	73-251480-211-1-U1	2.5	1480	DUPLEX-3"-ANSI 600-RF	HNBR	Yes
PPD-2.5-3705-HNBR-SS-3"-ANSI 1500 RF-ASME	73-253705-211-1-U1	2.5	3705	SS-3"-ANSI 1500-RF	HNBR	Yes
PPD-2.5-3705-HNBR-DUPLEX-3"-ANSI 1500 RF-ASME	73-253705-211-1-U1	2.5	3705	DUPLEX-3"-ANSI 1500-RF	HNBR	Yes
PPD-2.5-6170-HNBR-SS-3"-ANSI 1500 RF-ASME	73-256170-211-1-U1	2.5	6170	SS-3"-ANSI 1500-RF	HNBR	Yes
PPD-2.5-6170-HNBR-DUPLEX-3"-ANSI 1500 RF-ASME	73-256170-211-1-U1	2.5	6170	DUPLEX-3"-ANSI 1500-RF	HNBR	Yes
PPD-5-285-HNBR-SS-3"-ANSI 150 RF-ASME	73-050285-211-1-U1	5	285	SS-3"-ANSI 1500-RF	HNBR	Yes
PPD-5-285-HNBR-DUPLEX-3"-ANSI 150 RF-ASME	73-050285-211-3-U1	5	285	DUPLEX-3"-ANSI 150-RF	HNBR	Yes
PPD-5-1480-HNBR-SS-3"-ANSI 600 RF-ASME	73-051480-211-1-U1	5	1480	SS-3"-ANSI 600-RF	HNBR	Yes
PPD-5-1480-HNBR-DUPLEX-3"-ANSI 600 RF-ASME	73-051480-211-1-U1	5	1480	DUPLEX-3"-ANSI 600-RF	HNBR	Yes
PPD-5-3705-HNBR-SS-3"-ANSI 1500 RF-ASME	73-053705-211-1-U1	5	3705	SS-3"-ANSI 1500-RF	HNBR	Yes
PPD-5-3705-HNBR-DUPLEX-3"-ANSI 1500 RF-ASME	73-053705-211-1-U1	5	3705	DUPLEX-3"-ANSI 1500-RF	HNBR	Yes
PPD-5-6170-HNBR-SS-3"-ANSI 1500 RF-ASME	73-056170-211-1-U1	5	6170	SS-3"-ANSI 1500-RF	HNBR	Yes
PPD-5-6170-HNBR-DUPLEX-3"-ANSI 1500 RF-ASME	73-056170-211-1-U1	5	6170	DUPLEX-3"-ANSI 1500-RF	HNBR	Yes
PPD-10-285-HNBR-SS-3"-ANSI 150 RF-ASME	73-100285-211-1-U1	10	285	SS-3"-ANSI 1500-RF	HNBR	Yes
PPD-10-285-HNBR-DUPLEX-3"-ANSI 150 RF-ASME	73-100285-211-3-U1	10	285	DUPLEX-3"-ANSI 150-RF	HNBR	Yes
PPD-10-1480-HNBR-SS-3"-ANSI 600 RF-ASME	73-101480-211-1-U1	10	1480	SS-3"-ANSI 600-RF	HNBR	Yes
PPD-10-1480-HNBR-DUPLEX-3"-ANSI 600 RF-ASME	73-101480-211-1-U1	10	1480	DUPLEX-3"-ANSI 600-RF	HNBR	Yes
PPD-10-3705-HNBR-SS-3"-ANSI 1500 RF-ASME	73-103705-211-1-U1	10	3705	SS-3"-ANSI 1500-RF	HNBR	Yes
PPD-10-3705-HNBR-DUPLEX-3"-ANSI 1500 RF-ASME	73-103705-211-1-U1	10	3705	DUPLEX-3"-ANSI 1500-RF	HNBR	Yes
PPD-10-6170-HNBR-SS-3"-ANSI 1500 RF-ASME	73-106170-211-1-U1	10	6170	SS-3"-ANSI 1500-RF	HNBR	Yes
PPD-10-6170-HNBR-DUPLEX-3"-ANSI 1500 RF-ASME	73-106170-211-1-U1	10	6170	DUPLEX-3"-ANSI 1500-RF	HNBR	Yes
PPD-20-285-HNBR-SS-3"-ANSI 150 RF-ASME	73-100285-211-1-U1	20	285	SS-3"-ANSI 1500-RF	HNBR	Yes
PPD-20-285-HNBR-CS-3"-ANSI 150 RF-ASME	73-100285-211-3-U1	20	285	CS-3"-ANSI 150-RF	HNBR	Yes
PPD-20-285-HNBR-CS-3"-ANSI 1500 RF-NON ASME	73-101480-211-1-U1	20	285	CS-3"-ANSI 600-RF	HNBR	No
PPD-20-2250-HNBR-DUPLEX-3"-ANSI 600 RF-ASME	73-101480-211-1-U1	20	2250	DUPLEX-3"-ANSI 600-RF	HNBR	Yes
PPD-20-2250-HNBR-SS-3"-ANSI 1500 RF-ASME	73-202250-211-1-U1	20	2250	SS-3"-ANSI 1500-RF	HNBR	Yes
PPD-20-2250-HNBR=SS-3"-ANSI 1500 RF-NON ASME	73-202250-211-1	20	2250	SS-3"-ANSI 1500-RF	HNBR	No
PPD-20-2250-HNBR-CS-3"-ANSI 1500 RF-ASME	73-202250-212-1-U1	20	2250	CS-3"-ANSI 1500-RF	HNBR	Yes
PPD-20-2250-HNBR-CS-3"-ANSI 1500 RF-NON ASME	73-202250-212-1	20	2250	CS-3"-ANSI 1500-RF	HNBR	No

DRILLING PULSATION DAMPENER (DPD)

Part Description	Part Number	DPD Component Description				
		Size (gals)	Pressure Rating	Bottom Plate	Diaphragm Material	ASME U Stamped
DPD-10-5000-NBR-4-1/16"-API RTJ-ASME	70-105000121-U1	10	5000	SS-4-1/16"-API RTJ	NBR	Yes
DPD-10-5000-HNBR-4-1/16"-API RTJ-ASME	70-105000221-U1	10	5000	SS-4-1/16"-API RTJ	HNBR	Yes
DPD-20-5000-NBR-SS-4-1/16"-API RTJ-ASME	71-205000121-U1	20	5000	SS-4-1/16"-API RTJ	NBR	Yes
DPD-20-5000-HNBR-SS-4-1/16"-API RTJ-ASME	71-205000221-U1	20	5000	SS-4-1/16"-API RTJ	HNBR	Yes
DPD-20-7500-NBR-SS-4-1/16"-API RTJ-ASME	71-207500121-U1	20	7500	SS-4-1/16"-API RTJ	NBR	Yes
DPD-20-7500-HNBR-SS-4-1/16"-API RTJ-ASME	71-207500221-U1	20	7500	SS-4-1/16"-API RTJ	HNBR	Yes
DPD-20-7500-NBR-CS-4-1/16"-API RTJ-ASME	71-207500-005-U1	20	7500	CS-4-1/16"-API RTJ	HNBR	Yes
DPD-20-7500-HNBR-CS-4-1/16"-API RTJ-ASME	71-207500-005	20	7500	CS-4-1/16"-API RTJ	HNBR	No

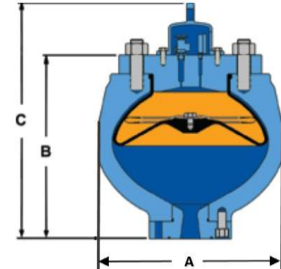
INTEGRATED OEM ASME U PULSATON DAMPENERS IKD™ (K Style) and IPD™ (IP Style)

PULSATION DAMPENER DIMENSIONS AND WEIGHTS -ENGINEERING DATA



Integrated Manufactured
Production Pulsation Dampener
IPD™

Integrated Manufactured
Drilling Pulsation Dampener
IKD™



1 GALLON CAPACITY - PRODUCTION PULSATION DAMPENER (PPD)

Model Number	Size gals	Pressure			Product Dimensions						Weight	
					Width (A)		Shell Height (B)		Overall Height (C)			
		psi	mPa	bar	in.	mm	in.	mm	in.	mm	lbs	kg
PPD-1-285	1	285	1.965	19.65	10.50	287	9.50	241	16.50	419	65	29.5
PPD-1-1480	1	1480	10.204	102.04	10.50	267	9.75	248	16.75	425	70	31.8
PPD-1-3705	1	3705	25.545	255.45	11.50	292	10.00	254	17.00	432	160	72.6
PPD-1-6705	1	6705	46.223	462.29	12.90	328	11.24	286	19.58	497	248	112.5

2.5 GALLON CAPACITY - PRODUCTION PULSATION DAMPENER (PPD)

Model Number	Size gals	Pressure			Product Dimensions						Weight (lbs)	
					Width (A)		Shell Height (B)		Overall Height (C)		lbs	kg
		psi	mPa	bar	in.	mm	in.	mm	in.	mm	lbs	kg
PPD-2.5-285	2.5	285	1.965	19.65	12.75	324	9.50	241	17.25	438	80	36.3
PPD-2.5-1480	2.5	1480	10.204	102.04	14.25	362	12.50	318	19.25	489	210	95.3
PPD-2.5-3705	2.5	3705	25.545	255.45	14.25	362	12.50	318	19.25	489	210	95.3
PPD-2.5-6705	2.5	6705	46.223	462.29	15.69	399	14.47	368	22.49	571	445	201.8

5 GALLON CAPACITY - PRODUCTION PULSATION DAMPENER (PPD)

Model Number	Size gals	Pressure			Product Dimensions						Weight (lbs)	
					Width (A)		Shell Height (B)		Overall Height (C)		lbs	kg
		psi	mPa	bar	in.	mm	in.	mm	in.	mm	lbs	kg
PPD-5-285	5	285	1.965	19.65	16.00	406	13.75	349	20.75	527	120	54.4
PPD-5-1480	5	1480	10.204	102.04	18.00	457	15.50	394	22.50	572	300	136.1
PPD-5-3705	5	3705	25.545	255.45	18.00	457	15.50	394	22.50	572	300	136.1
PPD-5-6705	5	6705	46.223	462.29	20.10	511	17.67	449	25.67	652	700	317.5

10 GALLON CAPACITY - PRODUCTION PULSATION DAMPENER (PPD)

Model Number	Size gals	Pressure			Product Dimensions						Weight (lbs)	
					Width (A)		Shell Height (B)		Overall Height (C)		lbs	kg
		psi	mPa	bar	in.	mm	in.	mm	in.	mm	lbs	kg
PPD-10-285	10	285	1.965	19.65	521	19.25	489	26.00	660	521	400	181.4
PPD-10-1480	10	1480	10.204	102.04	521	19.25	489	26.00	660	521	400	181.4
PPD-10-3705	10	3705	25.545	255.45	546	21.25	540	28.00	711	546	700	317.5

20 GALLON CAPACITY - PRODUCTION PULSATION DAMPENER (PPD)

Model Number	Size gals	Pressure			Product Dimension						Weight (lbs)	
					Width (A)		Shell Height (B)		Overall Height (C)		lbs	kg
		psi	mPa	bar	in.	mm	in.	mm	in.	mm	lbs	kg
PPD-20-285	20	285	1.965	19.65	24.00	610	21.00	533	27.50	699	835	378.7
PPD-20-2250	20	2250	15.513	155.13	25.50	648	24.00	610	30.75	781	981	445.0

10 GALLON CAPACITY - DRILLING PULSATION DAMPENER (DPD)

Model Number	Size gals	Pressure			Product Dimensions						Weight (lbs)	
					Width		Shell Height		Overall Height		lbs	kg
		psi	mPa	bar	in.	mm	in.	mm	in.	mm	lbs	kg
PPD-10-5000	10	5000	34.473	344.74	23.75	603.25	22.68	576.07	29.44	747.78	940	426.38

20 GALLON CAPACITY - DRILLING PULSATION DAMPENER (DPD)

Model Number	Size gals	Pressure			Product Dimensions						Weight (lbs)	
					Width (A)		Shell Height (B)		Overall Height (C)		lbs	kg
		psi	mPa	bar	in.	mm	in.	mm	in.	mm	lbs	kg
PPD-20-5000	20	5000	34.473	344.74	28.25	717.55	29.62	752.35	41.38	1051.05	2120	961.62
PPD-20-7500	20	7500	51.710	517.11	28.75	730.25	31.27	794.26	43.32	1100.33	3100	1406.14

INTEGRATED OEM ASME U PULSATON DAMPENERS IKD™ (K Style) and IPD™ (IP Style)

INTEGRATED OEM MANUFACTURED PULSATION DAMPENER DIAPHRAGMS

INTEGRATED K STYLE (IKD™)



INTEGRATED IP STYLE (IPD™)



INTEGRATED EMSCO STYLE



➤ IPD™ - PPD (Production Pulsation Dampener Diaphragms)

Description	Size	Material	Product Code	Weight Per Unit
1 Gallon PPD Diaphragm	1 gal	NBR	73-011004	4.00 lbs 1.80 kg
1 Gallon PPD Diaphragm	1 gal	HNBR	73-012004	4.00 lbs 1.80 kg
1 Gallon PPD Diaphragm	1 gal	Urethane	73-015004	4.00 lbs 1.80 kg
1 Gallon PPD Diaphragm	1 gal	FKM	73-013004	4.00 lbs 1.80 kg
2.5 Gallon PPD Diaphragm	2.5 gal	NBR	73-251004	7.00 lbs 3.20 kg
2.5 Gallon PPD Diaphragm	2.5 gal	HNBR	73-252004	7.00 lbs 3.20 kg
2.5 Gallon PPD Diaphragm	2.5 gal	Urethane	73-255004	7.00 lbs 3.20 kg
2.5 Gallon PPD Diaphragm	2.5 gal	FKM	73-253004	7.00 lbs 3.20 kg
5 Gallon PPD Diaphragm	5 gal	NBR	73-051004	10.00 lbs 4.50 kg
5 Gallon PPD Diaphragm	5 gal	HNBR	73-052004	10.00 lbs 4.50 kg
5 Gallon PPD Diaphragm	5 gal	Urethane	73-055004	10.00 lbs 4.50 kg
5 Gallon PPD Diaphragm	5 gal	FKM	73-053004	10.00 lbs 4.50 kg

➤ IPD™ - PPD (Production Pulsation Dampener Diaphragms) | IKD™ - DPD (Drilling Pulsation Dampener Diaphragms)

Description	Size	Material	Product Code	Weight Per Unit
10 Gallon PPD Diaphragm	10 gal	NBR	73-101004	17.00 lbs 7.70 kg
10 Gallon PPD Diaphragm	10 gal	HNBR	73-102004	17.00 lbs 7.70 kg
10 Gallon PPD Diaphragm	10 gal	Urethane	73-105004	17.00 lbs 7.70 kg
10 Gallon PPD Diaphragm	10 gal	FKM	73-103004	17.00 lbs 7.70 kg
20 Gallon PPD Diaphragm	20 gal	NBR	73-201004	28.00 lbs 12.70 kg
20 Gallon PPD Diaphragm	20 gal	HNBR	73-202004	28.00 lbs 12.70 kg
20 Gallon PPD Diaphragm	20 gal	Urethane	73-205004	28.00 lbs 12.70 kg
20 Gallon PPD Diaphragm	20 gal	FKM	73-203004	28.00 lbs 12.70 kg

➤ EMSCO (PD Diaphragms)

Description	Size	Material	Product Code	Weight Per Unit
PD 45 Diaphragm	10 gal	NBR	71-6922-4503	16.00 lbs 7.26 kg
PD 45 Diaphragm	10 gal	HNBR	71-6922-4507	16.00 lbs 7.26 kg
PD 45 Diaphragm	10 gal	Urethane	71-6922-4505	16.00 lbs 7.26 kg
PD 45 Diaphragm	10 gal	FKM	71-6922-4509	16.00 lbs 7.26 kg
PD 55 Diaphragm	20 gal	NBR	71-6922-5503	26.00 lbs 11.80 kg
PD 55 Diaphragm	20 gal	HNBR	71-6922-5507	26.00 lbs 11.80 kg
PD 55 Diaphragm	20 gal	Urethane	71-6922-5505	26.00 lbs 11.80 kg
PD 55 Diaphragm	20 gal	FKM	71-6922-5509	26.00 lbs 11.80 kg
PD 55A Diaphragm (w/insert)	20 gal	NBR	71-6922-5503A	28.00 lbs 12.70 kg
PD 55A Diaphragm (w/insert)	20 gal	HNBR	71-6922-5507A	28.00 lbs 12.70 kg
PD 55A Diaphragm (w/insert)	20 gal	Urethane	71-6922-5505A	28.00 lbs 12.70 kg
PD 55A Diaphragm (w/insert)	20 gal	FKM	71-6922-5509A	28.00 lbs 12.70 kg

➤ K10 HNBR DIAPHRAGM KIT (Components)

73-1020041

Part Number	Description
73-102004*	10 Gallon HNBR Diaphragm
73-101005	10 Gallon NBR Stabilizer Rubber
73-100005	10/20 Gallon Stabilizer Plate
26-017-001	10 Gallon Lock Washer
26-016-000	10 Gallon Bolt

➤ K20 HNBR DIAPHRAGM KIT (Components)

73-2020041

Part Number	Description
73-202004*	20 Gallon HNBR Diaphragm
73-201005	20 Gallon NBR Stabilizer Rubber
73-100005	10/20 Gallon Stabilizer Plate
26-017-000	20 Gallon Lock Washer
26-012-151	20 Gallon Bolt

INTEGRATED OEM ASME U PULSATON DAMPENERS IKD™ (K Style) and IPD™ (IP Style)

PULSATION DAMPENER MISCELLANEOUS ITEMS

INTEGRATED PPD | DPD STABILIZER PLATE

INTEGRATED PPD | DPD CHARGING HOSE ASSEMBLY

 ➤ **PPD (Production Pulsation Dampener): 1 Gallon**

Description	Size	Product Code	Weight Per Unit
1 Gallon PPD Charging Valve	1 gal	71-210-014	0.25 lbs 0.11 kg
1 Gallon PPD Charging Hose Assembly	1 gal	71-200-021	6.00 lbs 2.72 kg

 ➤ **PPD (Production Pulsation Dampener): 2.5 Gallon**

Description	Size	Product Code	Weight Per Unit
2.5 Gallon PPD Charging Valve	2.5 gal	71-210-014	0.25 lbs 0.11 kg
2.5 Gallon PPD Charging Hose Assembly	2.5 gal	71-200-021	6.00 lbs 2.72 kg

 ➤ **PPD (Production Pulsation Dampener): 5 Gallon**

Description	Size	Product Code	Weight Per Unit
5 Gallon PPD Charging Valve	5 gal	71-210-014	0.25 lbs 0.11 kg
5 Gallon PPD Charging Hose Assembly	5 gal	71-200-021	6.00 lbs 2.72 kg

 ➤ **PPD | DPD (Production Pulsation Dampener | Drilling Pulsation Dampener): 10 Gallon**

Description	Size	Product Code	Weight Per Unit
10 Gallon DPD Stabilizer Plate	10 gal	73-201005	2.00 lbs 0.91 kg
10 Gallon Bottom Gasket, HSN	10 gal	71-100-002	0.50 lbs 0.23 kg
10 Gallon PPD Charging Valve	10 gal	71-210-014	2.00 lbs 0.91 kg
10 Gallon PPD Charging Hose Assembly	10 gal	71-200-021	6.00 lbs 2.72 kg
10 Gallon DPD Charging Hose Assembly	10 gal	71-200-020	6.00 lbs 2.72 kg

 ➤ **PPD | DPD (Production Pulsation Dampener | Drilling Pulsation Dampener): 20 Gallon**

Description	Size	Product Code	Weight Per Unit
20 Gallon DPD Stabilizer Plate	20 gal	73-201005	2.00 lbs 0.91 kg
20 Gallon Bottom Gasket, HSN	20 gal	71-100-004	0.50 lbs 0.23 kg
20 Gallon PPD Charging Valve	20 gal	71-210-014	2.00 lbs 0.91 kg
20 Gallon PPD Charging Hose Assembly	20 gal	71-200-021	6.00 lbs 2.72 kg
20 Gallon DPD Charging Hose Assembly	20 gal	71-200-020	6.00 lbs 2.72 kg

 ➤ **PD-45**

Description	Size	Product Code	Weight Per Unit
PD-45 Charging Valve	PD-45	71-6922-402FMAC	3.00 lbs 1.36 kg
PD-45 Charging Hose Assembly	PD-45	71-6922-040	6.00 lbs 2.72 kg

 ➤ **PD-55**

Description	Size	Product Code	Weight Per Unit
PD-55 Charging Valve	PD-55	71-6922-402FMAC	3.00 lbs 1.36 kg
PD-55 Charging Hose Assembly	PD-55	71-6922-040	6.00 lbs 2.72 kg

 ➤ **PD-55A**

Description	Size	Product Code	Weight Per Unit
PD-55A Stabilizer	PD-55A	71-6922-0109	5.00 lbs 2.27 kg

**INTEGRATED OEM ASME U
PULSATON DAMPENERS IKD™ (K Style) and IPD™ (IP Style)****DIAPHRAGM MATERIAL OPTIONS****POLYISOPRENE (ASTM D1418 Designation - NR):**

- Natural Rubber features high tensile strength, high resilience, high abrasion and high tear resistance properties, with a good friction surface and excellent adhesion to metals. Until the invention of synthetic elastomers in the 1930's, Natural Rubber was the only polymer available for O-ring manufacture. Natural Rubber features good resistance to organic acids and alcohols, with moderate resistance to aldehydes.

- Continuous Temperature Range: -40°F to 158°F (-40°C to 70°C) | Intermittent Maximum Temperature: 250°F (121°C)

ACRYLONITRILE BUTADIENE POLYMER (ASTM D1418 Designation - NBR):

- Nitrile rubber (NBR) is the general term for acrylonitrile butadiene copolymer. The acrylonitrile content of nitrile sealing compounds varies considerably (18% to 50%) and influences the physical properties of the finished material. The higher the acrylonitrile content, the better the resistance to oil and fuel. At the same time, elasticity and resistance to compression set is adversely affected. In view of these opposing realities, a compromise is often drawn, and a medium acrylonitrile content selected. NBR has good mechanical properties when compared with other elastomers and high wear resistance. NBR is not resistant to weathering and ozone.

- Continuous Temperature Range: 0°F to 212°F (-18°C to 100°C) | Intermittent Maximum Temperature: 250°F (121°C)

HYDROGENATED ACRYLONITRILE BUTADIENE POLYMER (ASTM D1418 Designation - HNBR):

- HNBR is widely used in oil industry and maintains excellent resistance to motor oils, sour gas, amine/oil mixtures, oxidized fuels, and lubricating oils. HNBR is resistant to mineral oil-based hydraulic fluids, animal and vegetable fats, diesel fuel, ozone, sour gas, dilute acids and bases. It also resists new bio-oils (biological oils). It is suitable for high dynamic loads and has a good abrasion resistance.

- Continuous Temperature Range: 0°F to 250°F (-18°C to 121°C) | Intermittent Maximum Temperature: 300°F (149°C)

POLYURETHANE (URETHANE):

- Polyurethane elastomers, as a class, have excellent wear resistance, high tensile strength and high elasticity in comparison with any other elastomers. Permeability is good and comparable with butyl.

- Continuous Temperature Range: 0°F to 250°F (-18°C to 121°C) | Intermittent Maximum Temperature: 300°F (149°C)

FLUOROCARBON POLYMER (ASTM D1418 Designation - FKM):

- FKM has excellent resistance to high temperatures, ozone, oxygen, mineral oil, synthetic hydraulic fluids, fuels, aromatics and many organic solvents and chemicals. Low temperature resistance is normally not favorable and for static applications is limited. Gas permeability is very low and similar to that of butyl rubber. Special FKM compounds exhibit an improved resistance to acids and fuels.

- Continuous Temperature Range: 20°F to 375°F (-7°C to 191°C) | Intermittent Maximum Temperature: 400°F (204°C)

INTEGRATED OEM ASME U PULSATON DAMPENERS IKD™ (K Style) and IPD™ (IP Style)

ELASTOMER COMPATIBILITY GUIDE

Application	Natural Rubber (NR)	Nitrile (NBR)	Carboxylated Nitrile (XNBR)	Hydrogenated Nitrile (HNBR)	Viton (FKM)
Tensile Strength (Psi)	Over 3000	Over 2000	Over 3000	Over 3000	Over 1000
Hardness (Shore A)	30 - 90	40 - 90	40 - 90	40 - 90	40 - 90
Adhesion to metals	Excellent	Excellent	Good	Excellent	Fair to Good
Adhesion to fabrics	Excellent	Good	Good	Good	Good
Tear Resistance	Good	Fair	Excellent	Good	Fair to Good
Abrasion Resistance	Excellent	Good	Excellent	Excellent	Good
Compression Set	Excellent	Good	Excellent	Good	Good
Resilience - Hot	Excellent	Fair	Good	Good	Good
Resilience - Cold	Excellent	Fair	Good	Good	Fair
Dielectric Strength	Excellent	Poor	Good	Good	Good
Electrical Insulation	Good to Excellent	Poor	Good	Good	Good
Impermeability to Gases	Good	Excellent	Excellent	Excellent	Excellent
Acid Resistance - Dilute	Fair to Good	Good	Good	Good	Good - Excellent
Acid Resistance - Concentrated	Fair to Good	Good	Good	Good	Excellent
Solvent Resistance - Aliphatic Hydrocarbons	Poor	Excellent	Excellent	Excellent	Excellent
Solvent Resistance - Aromatic Hydrocarbons	Poor	Good	Good	Excellent	Excellent
Solvent Resistance - Oxygenated	Poor	Poor	Good	Excellent	Poor
Solvent Resistance - Lacquer	Poor	Fair	Good	Good	Poor
Solvent Resistance - Lubricating Oils	Poor	Good	Good	Excellent	Excellent
Resistance - Oil & Gas	Poor	Excellent	Excellent	Excellent	Excellent
Resistance - Water Absorption	Good	Good	Good	Good	Excellent
Resistance - Oxidation	Good	Good	Good	Excellent	Excellent
Resistance - Ozone	Poor	Poor	Poor	Excellent	Excellent
Resistance - H2S	Poor	Poor	Fair	Fair	Good
Resistance - CO2	Poor	Poor	Fair	Fair	Good
Resistance - Sunlight Aging	Poor	Poor	Good	Excellent	Excellent
Resistance - Heat Aging	Fair	Good	Excellent	Excellent	Excellent
Resistance - Low Temperature	Good	Fair	Good	Good	Fair
Resistance - Flame	Poor	Poor	Good	Good	Excellent
Resistance - Chlorinated Hydrocarbons	Poor	Fair	Poor	Good	Good - Excellent

ELASTOMER RECOMMENDED OPERATING TEMPERATURE

Elastomer Material	Recommended Operating Range			
	Low Temperature		High Temperature	
	°C	°F	°C	°F
Natural (NR)	4	40	82	180
Carboxylated Nitrile Rubber (XNBR)	4	40	82	180
Nitrile Rubber (NBR)	4	40	82	180
Hydrogenated Nitrile Butadiene Rubber (HNBR)	4	40	107	225

**INTEGRATED OEM ASME U
PULSATON DAMPENERS IKD™ (K Style) and IPD™ (IP Style)****ELASTOMER STORAGE AND AGE CONTROL GUIDELINES**

The following outlines the proper storage of elastomeric products to achieve maximum acceptable condition and their storage shelf life as defined in Table A & B. ISO 2230:2002 provides guidelines for the storage and for determining the shelf life of vulcanized rubber products.

TEMPERATURE:

- The optimum temperature for the storage of rubber products is between 50°F (10°C) and 80°F (27°C). Higher temperatures cause a gradual hardening of the rubber and accelerate the deterioration of rubber products, so sources of heat in storage rooms should be arranged such that the temperature of stored items never exceeds 100°F (38°C).
- Elastomers parts undergo several kinds of change when they are exposed to low temperatures. In temperatures of -20°F (-20°C), the rubber becomes brittle and will shatter when dropped or handled roughly. Some changes occur immediately, others after prolonged exposure. All are reversible; the rubber regains its original properties when it is returned to 65°F (18°C) or room temperature.

HUMIDITY:

- All elastomer products shall be stored in moisture proof bags, if not the relative humidity level shall be less than 65%. Condensation should not be allowed to occur.

LIGHT:

- All elastomeric products must be protected from Ultraviolet radiation (either indoor lighting and/or sunlight). Polyethylene (PE) bags stored in large cardboard containers and polyethylene lined craft bags offer good protection against light. Integrated elastomer recommends 4 mil minimum thickness, opaque, polyethylene plastic wrap and/or sealed as far as practical.

OZONE (O3) AND OXYGEN (O2):

- Integrated parts must be stored in airtight containers to protect them from circulating air. Or else this will cause cracks, which can be formed in many different elastomers (Natural rubber, polybutadiene, Styrene-butadiene rubber and NBR) by ozone attack and causes a breaking of the carbon backbone polymer chain into smaller chains. This weakens the rubber by lowering its molecular weight, and cracks start to grow in the regions affected.

DEFORMATION:

- All elastomeric products should be stored in a relaxed state, free from tension, compression, or other deformation since these may lead to cracking or change of shape. Packing element should not be stored on pegs as this may cause severe deterioration.

EXPOSURE TO CHEMICALS:

- Chemical degradation can change polymers properties due to a chemical reaction such as breaking its double bonds (rubber more brittle followed by crack) or swelling of rubber. This can reduce product's overall functional life. So, all elastomer products shall not come in contact with any chemicals unless these materials are by design an integral part of the component or Integrated Elastomer's packaging.

STRUCTURAL DAMAGE TO PRODUCT:

- Permanent deformations (folds, wrinkles or flattening areas)
- Mechanical damage (cuts, cracks, worn or dissolved areas)
- Changes to the surface (stiffening, softness, stickiness, discoloration or dirtiness)

The variations in size, composition and function of the rubber parts prevent defining a precise shelf life. Large rubber parts might suffer the same amount of deterioration as small parts and still be usable, whereas small parts become useless and should be thrown away. Both Natural and Synthetic rubber parts are susceptible to deterioration from various solvents such as oilfield liquid hydrocarbons, which causes swelling or shrinkage. In the final analysis, ownership judgement determines whether a rubber part should be used. If there is doubt, replace the part.

**INTEGRATED OEM ASME U
PULSATON DAMPENERS IKD™ (K Style) and IPD™ (IP Style)****RECEIPROCATING PUMP – PULSATION DAMPENER SIZING DATA SHEET**

Pulsation Dampener selection is a critical process which requires a thorough knowledge of a pressure system, the system components and the fluid characteristics. In order to assist in determining the proper PPD or DPD size and pressure rating, please fill out the following questionnaire:

Customer Information:

- Company Name:
- Company Address:
- Company Contact Number:
- Company Website:
- Client Name:
- Client Email Address:
- What is the primary purpose of your company (Agent, distributor, pump manufacturer or end user):
- What time frame are you requiring the PPD or DPD: Immediate | 1 month | 2 months | 3 months | 4 months
- Country / State the PPD / DPD will be sold into:

Pump Data:

- Pump Manufacturer:
- Pump Model and Type:
- Number of Cylinders:
- Bore – inches:
- Stroke – inches:
- Pumped Fluid:
- Discharge Pressure – psig:
- Suction Pressure – psig:
- Pumping Temperature – deg. F:
- Ambient Temperature – deg. F:

Dampener Data:

- Maximum Allowable Working Pressure (MAWP) – psig:
 - Discharge:
 - Suction:
- Allowable Peak to Peak Pulsation:
 - Percent (%):
 - Psi:
- Bottom Connection:
 - Discharge:
 - Suction:
- Applicable Codes and or Specifications:



GLOBAL DISTRIBUTION OF INTEGRATED MANUFACTURED PRESSURE CONTROL EQUIPMENT & ELASTOMERS
USA | Canada | Mexico | Colombia | Dubai | Singapore | Australia | Bahrain

INTEGRATED®

GLOBAL HEADQUARTERS

5701 Brittmoore Road, Houston, Texas 77041 USA

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

INTEGRATED ELASTOMERS® USA

OEM ELASTOMER MANUFACTURING PLANT

31811 Industrial Park Drive, Pinehurst, Texas 77362 USA

INTEGRATED EQUIPMENT® WEST TEXAS USA

DISTRIBUTION FACILITY

13020 Hwy 191 – Suite H, Midland, Texas 79707 USA

INTEGRATED EQUIPMENT® LIMITED

OEM EQUIPMENT MANUFACTURING PLANT

Pune-Nagar Highway, Kondhapuri, Pune 412209

❖ **Australia ARLF** (Authorized Repair License Facility) & Distribution

Well Control Solutions (WCS)

24 Enterprise Street, Richlands, QLD 4077

Contact: +61-7-3375-4388 | Email: sales@well-control.com.au



❖ **Canada ARLF** (Authorized Repair License Facility) & Distribution

Red Deer Well Control (RDWC)

6670 – 53rd Avenue, Unit #B, Edmonton, Alberta T6B 3H8

Contact: +780-466-3149 | Email: aspalding@rdwc.com

