

ACCU-PULSE Pulsation Dampener Sizing Guide

The following formula sizes pulsation dampeners for use on diaphragm, piston and plunger type metering pumps.

Information Required for Sizing:

V = volume per pump stroke in cubic inches

K = type of pump (K factor)

P = mean operating pressure

D = allowable pressure fluctuation as a percentage (+/- from mean)
Typical is 5% (in decimal form 0.05)

n = exponent for type of gas used (Nitrogen = 0.714; Air = 1.0)

Formula #1: Calculated V (Volume per stroke calculations:)

$$\frac{\text{gallons per hour}}{60 \text{ minutes}} = \text{gallons per minute}$$

$$\frac{\text{gallons per minute}}{\text{strokes per minute}} = \text{gallons per stroke}$$

$$V = \text{cubic inch per stroke} = \text{Gallons per stroke} \times 231$$

Formula #2: Optional calculation for Piston metering pump

$$\text{cubic inch per stroke} = .7854 \times (\text{inch bore diameter})^2 \times \text{inch stroke length}$$

Formula #3: Calculated P (mean operating pressure)

Desired pressure fluctuations

$$\text{Minimum Pressure } P_{\min} = P - (P \times D)$$

$$\text{Maximum Pressure } P_{\max} = P + (P \times D)$$

Chart #4: K Type of Pump

	Single Acting	Double Acting
Simplex	.60 (most common)	.25
Duplex	.25	.15
Triplex	.13	.06
Quadruplex	.10	.06

Formula #5:

Cubic inch size required

$$\text{Cubic inch req'd} = \frac{V \times K (P/P_{\min})^n}{1 - (P/P_{\max})^n}$$

Example:

Application flow rate:

90 gallons per hour @ 144 strokes per minute

K = 0.60 K factor of pump use **Chart 4**

P = 100 PSI Operating pressure

D = 5% = 0.05 Pressure fluctuation

Step 1:

Calculate V = cubic inches per stroke using

$$\text{Formula \#1:} = \frac{90 \text{ gallons per hour}}{60 \text{ minutes}}$$

$$= 1.5 \text{ GPM}$$

$$= \frac{1.5 \text{ GPM}}{144 \text{ SPM}}$$

$$= 0.01042 \text{ gallons per stroke}$$

$$V = 0.01042 \times 231 = 2.41 \text{ cubic inch per stroke}$$

Step 2:

Calculate P = pressure fluctuations using

Formula #3:

$$\text{Minimum pressure } P_{\min} = P - (P \times D)$$

$$= 100 - (100 \times 0.05)$$

$$= 100 - 5$$

$$P_{\min} = 95$$

$$\text{Maximum pressure } P_{\max} = P + (P \times D)$$

$$= 100 + (100 \times 0.05)$$

$$= 100 + 5$$

$$P_{\max} = 105$$

Step 3:

Calculate Cubic Inch required using

Formula #5:

$$= \frac{2.41 \times 0.6 (100/95)^1}{1 - (100/105)^1}$$

$$= \frac{2.41 \times 0.6 \times 1.0526}{1 - 0.9524}$$

$$= \frac{1.522}{0.0476}$$

Final Size = 32 cubic inches required

ACCU-PULSE I

Pulsation Dampeners

Suggested 2021 Canadian List Prices

(See page 12 for Terms)

ACCU-PULSE Series I (Chargeable-Adjustable)

150 PSI rated (metal chargeable 300 PSI rated)
 10 cu. in capacity
 ½" NPT bottom connection (STD on Plastic Units)
 ⅜" NPT bottom connection (STD on Metallic units)

Body Material

Polypropylene Model API-PP- * -1 150 PSI rated	Polyvinylchloride Model API-PVC- * -1 150 PSI rated	Polyvinylidene Fluoride Model API-PVDF- * -1 150 PSI rated	Chlorinated Polyvinyl Chloride Model API-CPVC- * -1 150 PSI rated (not Corzan)
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CODE A

Bellows Material*	Price	Bellows Material*	Price	Bellows Material*	Price	Bellows Material*	Price
		N	\$433.00			N	\$433.00
		B	\$444.00			B	\$461.00
		H	\$483.00			H	\$498.00
E	\$582.00	E	\$451.00	E	\$780.00	E	\$466.00
V	\$686.00	V	\$553.00	V	\$883.00	V	\$569.00
		T	\$1,009.00			T	\$1,007.00

Flanged Options

½" 150# Raised Face Flange inlet for PVC	Add suffix -F	List adder \$ 137.00
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Body Material

316 Stainless Steel Model API-S/S- * -0 150/300 PSI rated	Alloy 20 Model API-ALL20- * -0 150/300 PSI rated	Hastelloy C Model API-HAST- * -0 150/300 PSI rated	316 Stainless Steel APHI-S/S - * -0 1000 PSI rated
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CODE A

Bellows Material*	Price	Bellows Material*	Price	Bellows Material*	Price	Bellows Material*	Price
N	Call Factory	N	Call Factory	N	Call Factory	N	Call Factory
B	Call Factory	B	Call Factory	B	Call Factory	B	Call Factory
H	Call Factory	H	Call Factory	H	Call Factory	H	Call Factory
E	Call Factory	E	Call Factory	E	Call Factory	E	Call Factory
V	Call Factory	V	Call Factory	V	Call Factory	V	Call Factory
»T	Call Factory	»T	Call Factory	»T	Call Factory	»T	N/A
»150 PSI max							

Flanged Options

½" 150# Raised Face Flange inlet for stainless	Add suffix -F	List adder Call Factory
½" 150# Raised Face Flange inlet for Alloy 20	Add suffix -F	Call Factory
½" 150# Raised Face Flange inlet for Hastelloy C	Add suffix -F	Call Factory
For ½" npt connection (Metallic units only)	Add suffix -1	Call Factory

Replace * with Bellows Material "letter" to complete model code for correct material of construction.

ACCU-PULSE IF

Pulsation Dampeners

Suggested 2021 Canadian List Prices

(See page 12 for Terms)

ACCU-PULSE Series IF (Chargeable-Adjustable)

- 150 PSI rated (metal chargeable 300 PSI rated)
- 4 cu. in capacity
- ½" NPT bottom connection (STD on Plastic Units)
- ¾" NPT bottom connection (STD on Metallic units)

Body Material

Polypropylene Model APIF-PP- * -1 150 PSI rated	Polyvinylchloride Model APIF-PVC- * -1 150 PSI rated	Polyvinylidene Fluoride Model APIF-PVDF- * -1 150 PSI rated	Chlorinated Polyvinyl Chloride Model APIF-CPVC- * -1 150 PSI rated (not Corzan)
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CODE A

<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>
		N	\$347.00			N	\$374.00
		B	\$380.00			B	\$406.00
		H	\$414.00			H	\$440.00
E	\$578.00	E	\$386.00	E	\$654.00	E	\$409.00
V	\$683.00	V	\$487.00	V	\$759.00	V	\$512.00
		T	\$945.00			T	\$969.00

Flanged Options

½" 150# Raised Face Flange inlet for PVC	Add suffix -F	List adder \$ 133.00
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Body Material

316 Stainless Steel Model APIF-S/S- * -0 150/300 PSI rated	Alloy 20 Model APIF-ALL20- * -0 150/300 PSI rated	Hastelloy C Model APIF-HAST- * -0 150/300 PSI rated	316 Stainless Steel APHIF-S/S - * -0 1000 PSI rated
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CODE A

<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>
N	Call Factory	N	Call Factory	N	Call Factory	N	Call Factory
B	Call Factory	B	Call Factory	B	Call Factory	B	Call Factory
H	Call Factory	H	Call Factory	H	Call Factory	H	Call Factory
E	Call Factory	E	Call Factory	E	Call Factory	E	Call Factory
V	Call Factory	V	Call Factory	V	Call Factory	V	Call Factory
T	Call Factory	T	Call Factory	T	Call Factory	»T	Call Factory
»600 PSI max							

Flanged Options

½" 150# Raised Face Flange inlet for stainless	Add suffix -F	List adder Call Factory
½" 150# Raised Face Flange inlet for Alloy 20	Add suffix -F	Call Factory
½" 150# Raised Face Flange inlet for Hastelloy C	Add suffix -F	Call Factory
For ½" npt connection (Metallic units only)	Add suffix -1	Call Factory

Replace * with Bellows Material "letter" to complete model code for correct material of construction.

ACCU-PULSE II

Pulsation Dampeners

Suggested 2021 Canadian List Prices

(See page 12 for Terms)

ACCU-PULSE Series II (Chargeable-Adjustable)

150 PSI rated (metal chargeable 300 PSI rated except where noted)
 85 cu. in capacity
 ¾" npt bottom connection (optional 1" npt see bottom page)

Body Material

Polypropylene Model APII-PP- * -2 150 PSI rated	Polyvinylchloride Model APII-PVC- * -2 150 PSI rated	Polyvinylidene Fluoride Model APII-PVDF- * -2 150 PSI rated	Chlorinated Polyvinyl Chloride Model APII-CPVC- * -2 150 PSI rated (not Corzan)
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CODE A

<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>
N	\$1,016.00	N	\$ 931.00	N	\$1,614.00	N	\$1,225.00
B	\$ 980.00	B	\$ 982.00	B	\$1,654.00	B	\$1,274.00
H	\$1,191.00	H	\$1,107.00	H	\$1,793.00	H	\$1,401.00
E	\$1,048.00	E	\$1,045.00	E	\$1,605.00	E	\$1,340.00
V	\$1,258.00	V	\$1,249.00	V	\$2,049.00	V	\$1,630.00
T	\$1,990.00	T	\$2,116.00	T	\$2,597.00	T	\$2,599.00

Flanged Options

1" 150# Raised Face Flange inlet for Poly & PVC	Add suffix -F	List adder \$ 163.00
1" 150# Raised Face Flange inlet for PVDF	Add suffix -F	\$ 497.00

Body Material

316 Stainless Steel Model APII-S/S- * -2 150/300 PSI rated	Alloy 20 Model APII-ALL20- * -2 150/300 PSI rated	Hastelloy C Model APII-HAST- * -2 150/300 PSI rated	316 Stainless Steel APHII-S/S - * -2 1000 PSI rated
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CODE A

<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>
N	Call Factory	N	Call Factory	N	Call Factory	N	Call Factory
B	Call Factory	B	Call Factory	B	Call Factory	B	Call Factory
H	Call Factory	H	Call Factory	H	Call Factory	H	Call Factory
E	Call Factory	E	Call Factory	E	Call Factory	E	Call Factory
V	Call Factory	V	Call Factory	V	Call Factory	V	Call Factory
»T*	Call Factory	»T*	Call Factory	»T*	Call Factory	»T	Call Factory
»150 PSI max		* Optional 300# available, Call Factory				»600 PSI max	

Flanged Options

1" 150# Raised Face Flange inlet for stainless	Add suffix -F	List adder Call Factory
1" 150# Raised Face Flange inlet for Alloy 20	Add suffix -F	Call Factory
1" 150# Raised Face Flange inlet for Hastelloy C	Add suffix -F	Call Factory

For 1" npt connection change last digit in code from a -2 to a -3.

N/C for plastic; for metal Call Factory

Replace * with Bellows Material "letter" to complete model code for correct material of construction.

ACCU-PULSE IIF

Pulsation Dampeners

Suggested 2021 Canadian List Prices

(See page 12 for Terms)

ACCU-PULSE Series IIF (Chargeable-Adjustable)

150 PSI rated (metal chargeable 300 PSI rated)
 36 cu. in capacity
 ¾" npt bottom connection (optional 1" npt see bottom page)

Body Material

Polypropylene Model APIIF-PP- * -2 150 PSI rated	Polyvinylchloride Model APIIF-PVC- * -2 150 PSI rated	Polyvinylidene Fluoride Model APIIF-PVDF- * -2 150 PSI rated	Chlorinated Polyvinyl Chloride Model APIIF-CPVC- * -2 150 PSI rated (not Corzan)
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CODE A

Bellows Material*	Price	Bellows Material*	Price	Bellows Material*	Price	Bellows Material*	Price
N	\$ 974.00	N	\$ 919.00	N	\$1,551.00	N	\$1,167.00
B	\$1,029.00	B	\$ 964.00	B	\$1,490.00	B	\$1,210.00
H	\$1,156.00	H	\$1,089.00	H	\$1,733.00	H	\$1,279.00
E	\$1,024.00	E	\$1,028.00	E	\$1,535.00	E	\$1,274.00
V	\$1,228.00	V	\$1,231.00	V	\$1,815.00	V	\$1,530.00
T	\$2,126.00	T	\$2,132.00	T	\$2,537.00	T	\$2,552.00

Flanged Options

1" 150# Raised Face Flange inlet for poly & PVC	Add suffix -F	List adder \$ 163.00
1" 150# Raised Face Flange inlet for PVDF	Add suffix -F	\$ 496.00

Body Material

316 Stainless Steel Model APIIF-S/S- * -2 150/300 PSI rated	Alloy 20 Model APIIF-ALL20- * -2 150/300 PSI rated	Hastelloy C Model APIIF-HAST- * -2 150/300 PSI rated	316 Stainless Steel APIIF-S/S - * -2 1000 PSI rated
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CODE A

Bellows Material*	Price	Bellows Material*	Price	Bellows Material*	Price	Bellows Material*	Price
N	Call Factory	N	Call Factory	N	Call Factory	N	Call Factory
B	Call Factory	B	Call Factory	B	Call Factory	B	Call Factory
H	Call Factory	H	Call Factory	H	Call Factory	H	Call Factory
E	Call Factory	E	Call Factory	E	Call Factory	E	Call Factory
V	Call Factory	V	Call Factory	V	Call Factory	V	Call Factory
T	Call Factory	T	Call Factory	T	Call Factory	»T	Call Factory
»600 PSI max							

Flanged Options

1" 150# Raised Face Flange inlet for stainless	Add suffix -F	List adder Call Factory
1" 150# Raised Face Flange inlet for Alloy 20	Add suffix -F	Call Factory
1" 150# Raised Face Flange inlet for Hastelloy C	Add suffix -F	Call Factory

For 1" npt connection change last digit in code from a -2 to a -3.

N/C for plastic; for metal Call Factory.

Replace * with Bellows Material "letter" to complete model code for correct material of construction.

ACCU-PULSE III

Pulsation Dampeners

Suggested 2021 Canadian List Prices

(See page 12 for Terms)

ACCU-PULSE Series III (Chargeable-Adjustable)

150 PSI rated (metal chargeable 300 PSI rated)
 370 cu. in capacity
 2" npt bottom connection

Body Material

Polypropylene
 Model APIII-PP- * -4
 150 PSI rated

Polyvinylchloride
 Model APIII-PVC- * -4
 150 PSI rated

Polyvinylidene fluoride
 Model APIII-PVDF- * -4
 150 PSI rated

CODE A

<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>
N	\$1,409.00	N	\$1,403.00	N	\$3,995.00
B	\$1,415.00	B	\$1,432.00	B	\$4,026.00
H	\$1,621.00	H	\$1,561.00	H	\$4,376.00
E	\$1,559.00	E	\$1,492.00	E	\$4,094.00
V	\$1,800.00	V	\$1,727.00	V	\$4,517.00
T	\$3,682.00	T	\$3,948.00	T	\$6,988.00

Flanged Options

2" 150# Raised Face Flange inlet for poly & PVC
 2" 150# Raised Face Flange inlet for PVDF

Add suffix -F
 Add suffix -F

List adder
 \$ 194.00
 \$ 711.00

Body Material

316 Stainless Steel
 Model APIII-S/S- * -4
 150/300 PSI rated

Alloy 20
 Model APIII-ALL20- * -4
 150/300 PSI rated

Hastelloy C
 Model APIII-HAST- * -4
 150/300 PSI rated

316 Stainless Steel
 APIII-S/S - * -4
 1000 PSI rated

CODE A

<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>
N	Call Factory	N	N/A	N	N/A	N	Call Factory
B	Call Factory	B	N/A	B	N/A	B	Call Factory
H	Call Factory	H	Call Factory	H	Call Factory	H	Call Factory
E	Call Factory	E	Call Factory	E	Call Factory	E	Call Factory
V	Call Factory	V	Call Factory	V	Call Factory	V	Call Factory
»T	Call Factory	»T	Call Factory	»T	Call Factory	»T	N/A
» 150 PSI Max							

Flanged Options

2" 150# Raised Face Flange inlet for stainless
 2" 150# Raised Face Flange inlet for Alloy 20
 2" 150# Raised Face Flange inlet for Hastelloy C

Add suffix -F
 Call Factory
 Call Factory

List adder
 Call Factory
 Call Factory
 Call Factory

Replace * with Bellows Material "letter" to complete model code for correct material of construction.

ACCU-PULSE IIF

Pulsation Dampeners

Suggested 2021 Canadian List Prices

(See page 12 for Terms)

ACCU-PULSE Series IIF (Chargeable-Adjustable)
 150 PSI rated (metal chargeable 300 PSI rated)
 175 cu. in capacity
 2" npt bottom connection

Body Material

Polypropylene
 Model APIIIF-PP- * -4
 150 PSI rated

Polyvinylchloride
 Model APIIIF-PVC- * -4
 150 PSI rated

Polyvinylidene fluoride
 Model APIIIF-PVDF- * -4
 150 PSI rated

CODE A

<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>
N	\$1,347.00	N	\$1,288.00	N	\$3,199.00
B	\$1,379.00	B	\$1,374.00	B	\$3,305.00
H	\$1,509.00	H	\$1,559.00	H	\$3,579.00
E	\$1,445.00	E	\$1,428.00	E	\$3,298.00
V	\$1,687.00	V	\$1,678.00	V	\$3,720.00
T	\$3,588.00	T	\$3,504.00	T	\$6,163.00

Flanged Options

2" 150# Raised Face Flange inlet for poly & PVC
 2" 150# Raised Face Flange inlet for PVDF

Add suffix -F
 Add suffix -F

List adder
 \$ 194.00
 \$ 711.00

Body Material

316 Stainless Steel
 Model APIIIF-S/S- * -4
 300 PSI rated

Alloy 20
 Model APIIIF-ALL20- * -4
 300 PSI rated

Hastelloy C
 Model APIIIF-HAST- * -4
 300 PSI rated

316 Stainless Steel
 APIIIF-S/S - * -4
 1000 PSI rated

CODE A

<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>	<i>Bellows Material*</i>	<i>Price</i>
N	Call Factory	N	N/A	N	N/A	N	Call Factory
B	Call Factory	B	N/A	B	N/A	B	Call Factory
H	Call Factory	H	Call Factory	H	Call Factory	H	Call Factory
E	Call Factory	E	Call Factory	E	Call Factory	E	Call Factory
V	Call Factory	V	Call Factory	V	Call Factory	V	Call Factory
T	Call Factory	T	Call Factory	T	Call Factory	»T	Call Factory
» 600 PSI Max							

Flanged Options

2" 150# Raised Face Flange inlet for stainless
 2" 150# Raised Face Flange inlet for Alloy 20
 2" 150# Raised Face Flange inlet for Hastelloy C

Add suffix -F
 Call Factory
 Call Factory

List adder
 Call Factory
 Call Factory
 Call Factory

Replace * with Bellows Material "letter" to complete model code for correct material of construction.

ACCU-PULSE APX Series

Pulsation Dampeners

Suggested 2021 Canadian List Prices

(See page 12 for Terms)

Body Material
316 Stainless Steel
Model APX8-S/S-*-1
4000 PSI Rated

CODE A

Body Material
316 Stainless Steel
Model APX12-S/S-*-1
4000 PSI Rated

CODE A

<i>Bellows Material</i>	<i>Price</i>	<i>Bellows Material</i>	<i>Price</i>
B	Call Factory	B	Call Factory
E	Call Factory	E	Call Factory
V	Call Factory	V	Call Factory

Body Material
316 Stainless Steel
Model APX16-S/S-*-1
4000 PSI Rated

CODE A

Body Material
316 Stainless Steel
Model APX24-S/S-*-1
4000 PSI Rated

CODE A

<i>Bellows Material</i>	<i>Price</i>	<i>Bellows Material</i>	<i>Price</i>
B	Call Factory	B	Call Factory
E	Call Factory	E	Call Factory
V	Call Factory	V	Call Factory

PARTS

CODE F

<i>Materials</i>	<i>Part Number</i>	<i>Description</i>	<i>List Price</i>
Buna-N	808-290	Bladder, APX 8 cu inch Series, BunaN	\$ 824.00
EPDM	808-280	Bladder, APX 8 cu inch Series, EPDM	\$ 883.00
Viton	808-310	Bladder, APX 8 cu inch Series, Viton	\$1,240.00
Buna-N	812-290	Bladder, APX 12 cu inch Series, BunaN	\$ 824.00
EPDM	812-280	Bladder, APX 12 cu inch Series, EPDM	\$ 883.00
Viton	812-310	Bladder, APX 12 cu inch Series, Viton	\$1,240.00
Buna-N	816-290	Bladder, APX 16 cu inch Series, BunaN	\$ 872.00
EPDM	816-280	Bladder, APX 16 cu inch Series, EPDM	\$ 961.00
Viton	816-310	Bladder, APX 16 cu inch Series, Viton	\$1,315.00
Buna-N	824-290	Bladder, APX 24 cu inch Series, BunaN	\$ 872.00
EPDM	824-280	Bladder, APX 24 cu inch Series, EPDM	\$ 961.00
Viton	824-310	Bladder, APX 24 cu inch Series, Viton	\$1,315.00
Buna-N	800-430	"O" Ring, Non-Wetted All APX Series, BunaN	\$ 32.00
Buna-N	800-431	"O" Ring, Wetted BunaN APX Series Sizes	\$ 32.00
EPDM	800-432	"O" Ring, Wetted EPDM APX Series Sizes	\$ 32.00
Viton	800-433	"O" Ring, Wetted Viton APX Series Sizes	\$ 32.00
	800-922	Retaining Ring, 2 Required, All APX Sizes	\$ 79.00
	800-070	Charge Valve/Cap	\$ 276.00

Prices subject to change without notice

Standard terms apply

Please see our Parts Catalogue for parts not listed (web link http://www.primaryfluid.com/pdf/us_parts_pricing_catalogue_.pdf)

**ACCU-PULSE I / IF Series
Pulsation Dampeners
Parts
Suggested 2021 Canadian List Prices**

API/IF Series 150/300 PSIG (ALL MATERIALS (4 AND 10 CU IN UNITS))

CODE F

<i>Materials</i>	<i>Part #</i>	<i>Description</i>	<i>List Price</i>
Neoprene	1000-25	Bladder, API/APIF Series, Neoprene	\$ 83.00
Buna-N	1000-29	Bladder, API/APIF Series, BunaN	\$ 115.00
Hypalon	1000-30	Bladder, API/APIF Series, Hypalon	\$ 165.00
EPDM	1000-28	Bladder, API/APIF Series, EPDM	\$ 133.00
Viton	1000-31	Bladder, API/APIF Series, Viton	\$ 251.00
PTFE * (PVC & PP)	P1000-10	Bladder, API/APIF Series, PTFE	\$ 817.00
PTFE (PVDF)	K1000-10	Bladder, API/APIF Series, PTFE	Call Factory
* Also used in Food/Sanitary dampeners			

Air Components 150/300 PSIG

CODE F

<i>Part #</i>	<i>Description</i>	<i>List Price</i>
1000-70	Fill, Valve, 1/8" Brass, Plastic Units	\$ 50.00
101-53	Fill, Valve, 1/8" SS, Metallic Units	\$ 135.00
101-20	Gauge, 1/8" Back Mount, Plastic Units	\$ 79.00
G38	Gauge, 1/8" Back Mount, Metallic Units	\$ 152.00
1000-46	Tee, 1/8"	\$ 49.00
1000-42	Sleeveless Bushing (Req'd on APIF PVDF/PP units)	\$ 33.00
1000-58	Chargeable Air Assembly, Plastic Units	\$ 205.00
1020-58	Chargeable Air Assembly, Metallic Units	\$ 321.00

Prices subject to change without notice

Standard Terms apply

Please see our Parts Catalogue for parts not listed

(web link http://www.primaryfluid.com/pdf/us_parts_pricing_catalogue_.pdf)

**ACCU-PULSE II / IIF Series
& III / IIIF Series
Pulsation Dampeners
Parts
Suggested 2021 Canadian List Prices**

II/IIF Series 150/300 PSIG (ALL MATERIALS (36 AND 85 CU IN UNITS))

CODE F

Materials	Part #	Description	List Price
Neoprene	301-25	Bladder, APII/APIIF Series, Neoprene	\$ 189.00
Buna-N	401-29	Bladder, APII/APIIF Series, BunaN	\$ 303.00
Hypalon	401-30	Bladder, APII/APIIF Series, Hypalon	\$ 491.00
EPDM	401-28	Bladder, APII/APIIF Series, EPDM	\$ 421.00
Viton	401-25	Bladder, APII/APIIF Series, Viton	\$ 699.00
PTFE *	301-10	Bladder, APII/APIIF Series, PTFE	Call Factory
Aflas	301-55	Bladder, APII/APIIF Series, Aflas	\$ 801.00

*** Also used in Food/Sanitary dampeners**

APIII/IIIF Series 150/300 (ALL MATERIALS)

CODE F

Materials	Part #	Description	List Price
Neoprene	101-25	Bladder, APIII/APIIIF Series, Neoprene	\$ 340.00
Buna-N	201-29	Bladder, APIII/APIIIF Series, BunaN	\$ 424.00
Hypalon	201-30	Bladder, APIII/APIIIF Series, Hypalon	\$ 582.00
EPDM	201-28	Bladder, APIII/APIIIF Series, EPDM	\$ 508.00
Viton	201-25	Bladder, APIII/APIIIF Series, Viton	\$1,021.00
PTFE	101-10	Bladder, APIII/APIIIF Series, PTFE	Call Factory
Aflas	101-55	Bladder, APIII/APIIIF Series, Aflas	\$1,327.00

Air Components 150/300 PSIG

CODE F

Part #	Description	List Price
101-70	Fill, Valve, ¼" Brass, Plastic Units	\$ 50.00
101-71	Fill, Valve, ¼" SS, Metallic Units	\$ 136.00
101-33	Gauge, ¼" Lower Mount, Plastic Units	\$ 79.00
G40	Gauge, ¼" Lower Mount, Metallic Units	\$ 159.00

Prices subject to change without notice

Standard Terms apply

Please see our Parts Catalogue for parts not listed

(web link http://www.primaryfluid.com/pdf/us_parts_pricing_catalogue_.pdf)

ACCU-PULSE pulsation dampener pricing for size shown only.

Other materials of construction available upon request.

Other Threaded connections available upon request.

Larger pulsation dampeners available on special order.

Terms

Prices quoted are in Canadian Funds
Net 30 days firm (upon approved credit)
F.O.B. Burlington, Ontario, Canada
All Freight charges are extra
Stock to (1) one week normal delivery on standard items
Options and specials consult factory
Prices subject to change without notice
Minimum order of \$100.00 net.

ACCU-PULSE Safety Warnings

This dampener should only be installed and used by experienced and trained professional mechanics. Observe all safety warnings. Read all safety warnings and operating manuals before using or repairing this Pulsation Dampener (hereafter referred to as "dampener").

General Safety

This dampener is not intended to be used as a stand alone machine. EU member states must note: Do not use this dampener before it is combined into another machine or assembly that complies with all relevant EU safety directives and that the assembler's CE mark is affixed on completion.

The internal dampener pressure will equal the maximum fluid pressure of the system in which it is installed.

Do not exceed maximum pressure as stated on dampener tag. If tag is missing, do not use this dampener without consulting distributor or factory for maximum pressure rating.

Always make sure safety shut off valves, regulators, pressure relief valves, gauges etc. are working properly before starting system or assembly.

Always wear protective gloves, safety glasses, etc. when working on or near this dampener.

Before starting a system or assembly, make certain the discharge point of the piping system is clear and safe, and all persons have been warned to stand clear.

Always wear safety glasses when installing, charging or repairing this dampener.

Do not put your face or body near dampener when the system assembly is operating or dampener is pressurized.

Do not operate a dampener that is leaking, damaged, corroded or otherwise unable to contain internal fluid, air or gas pressure.

Do not pump incompatible fluids through the dampener. Consult your distributor or the factory if you are not sure of the compatibility of the fluids with the dampener materials.

Dampeners are designed to operate with compressed air or nitrogen. Other compressed gases have not been tested and may be unsafe to use in dampeners.

Bleed all pressure from system and dampener before removing equipment from the system.

Always shut off air supply, bleed internal dampener pressure and shut isolation valve before performing maintenance or repair on dampener.

Static spark can cause an explosion resulting in severe injury or death. Ground dampeners and pumping system when pumping flammable fluids.

Equipment Misuse Hazard

General Safety

Any misuse of this equipment such as over pressurization, modifying parts, incompatible chemicals, using worn or damaged parts or using gases other than air or nitrogen to charge dampener is not recommended. Any of these circumstances could result in serious bodily injury, death, fire, explosion or property damage.

Over-Pressurization

Never exceed the maximum operating pressure recommended for the dampener model being used. Maximum operating pressure is stated on tag. Pressure limits are stated at 20°C / 70°F.

Temperature Limits

Do not exceed the recommended operating temperatures for the shell and elastomer materials, independently. Excessive temperature will result in dampener failure. Temperature limits are stated at zero psig / bar.

Installation and Start-Up Hazards

Install dampener before charging or pressurizing.

Do not start system or assembly without first charging or pressurizing dampener. Failure to charge may result in damage to the elastomeric bladder.

Temperature & Pressure Hazard

Temperature and pressure reduce the strength and chemical resistance of plastic, metal and rubber.

Charging / Pressurization

Charge or pressurize the dampener with compressed air or nitrogen only. **Do NOT use oxygen.**

Dampener Bladder Failure

Dampeners utilize an elastomeric membrane to separate system fluid from the air supply or gas charge. When this membrane ruptures, system fluid may be expelled from the air valve. Always perform preventive maintenance and replace elastomers before excessive wear occurs.

Maintenance Hazards

Never over-tighten clamp bands. This may cause leakage of system fluid and damage to dampener shell.