

12.1.1 TECHNICAL DATA

MAX OPERATING PRESSURE (PS): 360 bar

PRESSURE TEST (PT): 1.43 x PS

WORKING TEMPERATURE: -40 ÷ +150 °C

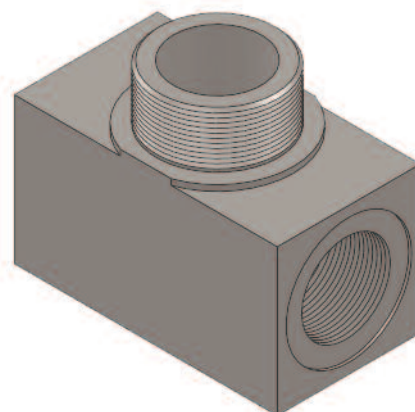
FLUID VISCOSITY RANGE: 10 ÷ 400 cSt

RECOMMENDED VISCOSITY: 36 cSt

BODY MATERIAL: - phosphated carbon steel or galvanized carbon steel in compliance with Directive 2002/95/CE (RoHS) to resist to corrosion.
- nickel coating 25 - 40 µ
- stainless steel AISI 316L

DIMENSIONS: see Table 12.1h

WEIGHT: see Table 12.1h

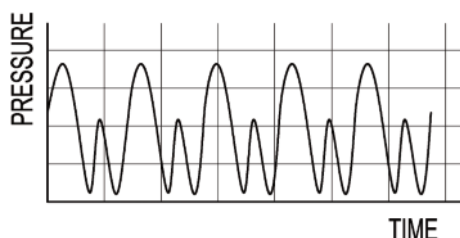


12.1a

12.1.2 APPLICATIONS

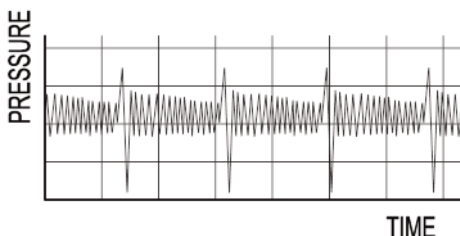
The pulsation damper is particularly suitable for: hydraulic systems, displacement pumps of all types, sensitive measurement and control instruments and manifolds in process circuits in the chemical industry. The EPE pulsation damper prevents pipe breaks caused by material fatigue, pipe oscillations and irregular flow rates; it protects valves, control devices and other instruments and improves noise level damping.

without damper



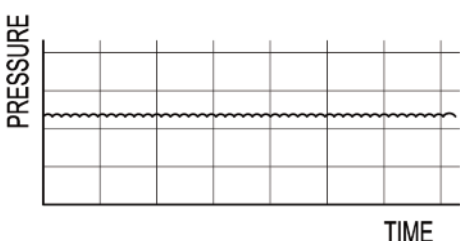
12.1b

**with accumulator
(standard connection bladder accumulator)**



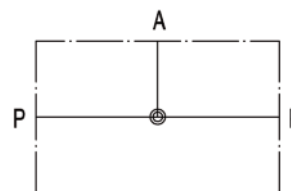
12.1c

with accumulator and pulsation damper



12.1d

12.1.3 HYDRAULIC SYMBOL



12.1e

12.1.4 DESCRIPTION

The pulsation damper adapter has two fluid connections and can therefore be fitted directly inline and connected directly to the accumulator (bladder or diaphragm ones).

The flow is directed straight to the bladder or diaphragm by diverting it in the fluid valve. This causes direct contact of the flow with the bladder or diaphragm which, in an almost inertia less operation and balances the flow rate fluctuations via the gas volume.

It particularly compensates higher frequency pressure oscillations. The pre-charge pressure is adjusted to individual operating conditions.

Installation

As close as possible to the pulsation source. Mounting position preferably vertical (gas valve pointing upwards).

12.1.5 SEALS-TEMPERATURE-LIQUID COMPATIBILITY

When selecting the pulsation damper variant, observe the following non-binding notes with regard to hydraulic fluid, diaphragm material and the permissive temperature range.

Code letter	Polymer	ISO	Temperature range (°C)	Some of the liquids compatible with the polymer
P	Standard nitrile (Perburan)	NBR	-20 ÷ +80	Aliphatic hydrocarbons (propane, butane, gasoline, oils, mineral greases, diesel fuel, fuel oil, kerosene), mineral greases and oils, HFA - HFB - HFC fluids, many dilute acids, alkalis, saline solutions, water, water glycol.
F	Low temperature nitrile	NBR	-40 ÷ +70	The same as with standard nitrile + a number of different types of Freon. (This contains less acrylonitrile than the standard and is therefore more suitable for low temperatures, but its chemical resistance is slightly lower).
K	Hydrogenated nitrile	HNBR	-30 ÷ +130	The same as with standard nitrile but with excellent performance at high and low temperatures.
B	Butyl	IIR	-30 ÷ +100	Hot water up to 100°C, glycol-based brake fluids, many acids and bases, salt solutions, polar solvents such as alcohols, ketones and esters, polyglycol-based hydraulic fluids (HFC fluids) and bases of esters of phosphoric acid (HFD-R fluids), silicone oils and greases, Skydol 500 and 7000, resistance to ozone, aging and weathering.
E	Ethylene-Propylene	EPDM	-30 ÷ +100	Hot water up to 100°C, glycol-based brake fluids, many organic and inorganic acids, detergents, solutions of sodium and potassium, phosphate ester-based hydraulic fluids, (HFD-R), silicone oils and greases, many polar solvents (alcohol, ketones, esters), Skydol 500 and 7000, resistance to ozone, aging and weathering.
Y	Epichloridrin	ECO	-30 ÷ +110	Mineral oils and greases, aliphatic hydrocarbons (propane, butane and gasoline), silicone oils and greases, water at room temperature, resistance to ozone, aging and weathering.
V	Fluorocarbon	FPM	-10 ÷ +150	Mineral oils and greases, non-flammable fluids of HFD group, silicone oils and greases, animal and vegetable oils and greases, aliphatic hydrocarbons (gasoline, butane, propane, natural gas), aromatics hydrocarbons (benzene, toluene), chlorinated hydrocarbons (Tetrachloroethylene, carbon tetrachloride), fuel (regular, super and containing methanol), excellent resistance to ozone, weathering and aging.

For other hydraulic fluid and/or temperatures, please contact us.

12.1f

12.1.6 ORDER CODE

1	2	3	4	5	6	7	8
TA	360	A	9	G	8	-	C P

1 Series

Pulse damper adapter = **TA**

2 Max working pressure (PS) (bar)

30 = **30**
60 = **60**
210 = **210**
360 = **360**

3 Accumulator port connection

(Diaphragm accumulator)
BSP ISO 228 = **G**
(Bladder accumulator)
BSP ISO 228 with chamfer for OR = **A**

4 Dimension of accumulator connection

For the type of connection G:

G: 1/2" = **4**
3/4" = **5**
A: 3/4" = **5**
1"1/4" = **7**
2" = **9**
2"1/2" = **10**
4" = **13**

8 Seal material

Nitrile rubber (NBR) = **P**
Nitrile rubber for low temp = **F**
Hydrogenated Nitrile(HNBR) = **K**
Butyl (IIR) = **B**
Ethylene-propylene (EPDM) = **E**
Epichlorohydrin (ECO) = **Y**
Fluorocarbon (FPM) = **V**

7 Body material

Carbon steel = **C**
Nickel coated carbon steel 25 µ = **N**
Nickel coated carbon steel 40 µ = **M**
Stainless steel (150 bar) = **X**
Duplex stainless steel (210 bar) = **D**

6 Dimension of fluid connection

For the type of connection G:

G: 1/2" = **4**
3/4" = **5**
1" = **6**
1"1/4" = **7**
1"1/2" = **8**
2" = **9**
2"1/2" = **10**
3" = **11**

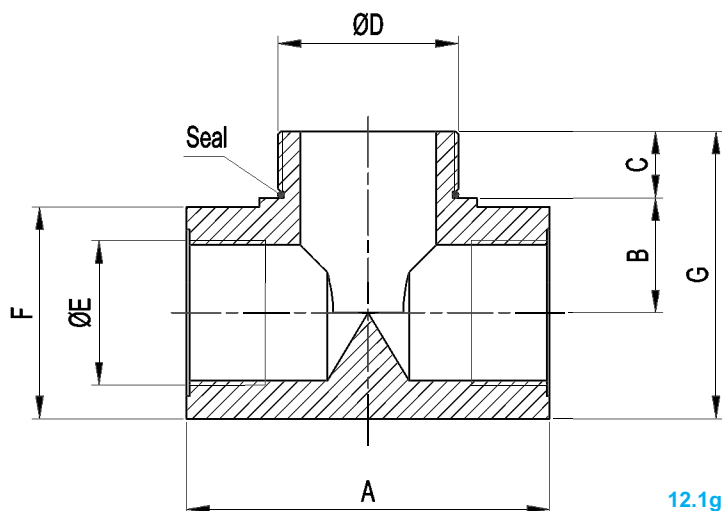
Other upon request

5 Fluid port connection

BSP ISO 228 female = **G**
Other upon request

Special variants on request

12.1.7 DIMENSIONS



12.1g

Pulsation dumper order code	A mm	B mm	C mm	ØD BSP	ØE BSP	F mm	G mm	Seal order code	Weight Kg
TA360A9G8- ^{**/*}	120	38	22	2"	1" 1/2	∅ 70	95	0010R3218-*	3.3
TA360A7G6- ^{**/*}	90	27	18	1" 1/4	1"	∅ 50	70	0010R3150-*	1.3
TA360A5G5- ^{**/*}	65	19	14	3/4"	3/4"	∅ 40	53	0010R2093-*	0.54
TA360G5G5- ^{**/*}								0012B27.05x35.05x2.5- ^{**/*}	
TA360G4G4- ^{**/*}	46	16	12	1/2"	1/2"	∅ 30	43	0012B21.5x28.7x2.5- ^{**/*}	0.24
TA30A13G11- ^{**/*}	240	112	21	4"	3"	Ø114.5	190	0010R4425-*	3.3
TA60A10G9- ^{**/*}	180	82	22	2" 1/2	2"	Ø73.5	141	0010R3281-*	2.8
TA60A9G8- ^{**/*}	150	70	22	2"	1" 1/2	Ø60.5	122	0010R3218-*	2.3

* Gasket material

^{**} Component material

12.1h

Reproduction is forbidden.

In the spirit of continuous improvement, our products may be changed.

12.7.1 DESCRIPTION

As contamination control in oleodynamic systems is increasingly important, as it is the main cause of breakage, failure and early degradation of the components, EPE Italiana is pleased to announce this new service for all its customer. With a new system and cleanliness experts to bring accumulator cleaning to the highest level. We can deliver a ready to operate unit meeting even the most stringent requirements.

12.7.2 TECHNICAL DATA

SERVICE: all interior surface fully cleaned, flushed and factory sealed, ready for system commissioning

CLEANLINESS ACCORDING TO:

NAS 1638, ISO 4406-1999, AS4059E, ISO 11218

FLUSHING FLUIDS: selected for compatibility with your specified system fluid

CERTIFICATE: fully certified documentation delivered with each order

PROCEDURE: accredited to ISO 9001

INSTRUCTION: experienced qualified trained technicians

COST: cost-effective, fast turnaround, environmentally responsible, proven result

BENEFIT: extends the life of your system and components

12.7.3 HOW TO MEASURE THE CONTAMINATION

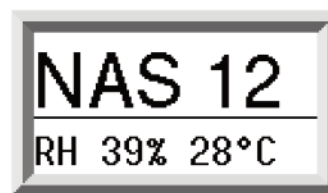
The level of contamination is measured by counting the number of particles of a certain size per unit volume of fluid and classified into classes of contamination, according to international standards.

Measurement of particles is given by "automatic particle counters" examining the fluid on line or on sample.

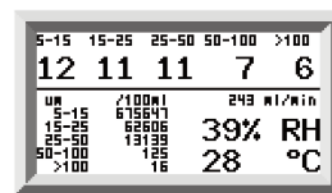
Measurements of samples should be undertaken in accordance with International standards.

The most used in the oleodynamic systems are:

- ISO 4406
- NAS 1638



Simple



Detailed

12.7b

12.7.4 CONTAMINATION CLASSES ACCORDING TO ISO 4406

Contamination class according to ISO 4406 is given by three numbers that indicate the number of particles per 100 ml, respectively with dimensions greater than 4 / 6 / 14 μ m

ISO class	Number of particles per 100 ml	
	Greater than	till
22	2.000.000	4.000.000
21	1.000.000	2.000.000
20	500.000	1.000.000
19	250.000	500.000
18	130.000	250.000
17	64.000	130.000
16	32.000	64.000
15	16.000	32.000
14	8.000	16.000
13	4.000	8.000
12	2.000	4.000
11	1.000	2.000
10	500	1.000
9	250	500
8	130	250

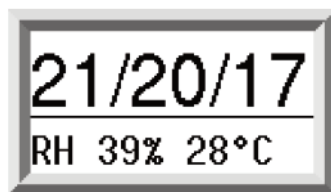
12.7c

Ex.: Code ISO 18/16/13

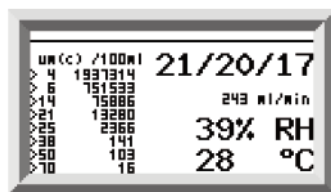
18 = from 130.000 to 250.000 particles $\geq 4\mu$ m in 100 ml

16 = from 32.000 to 64.000 particles $\geq 6\mu$ m in 100 ml

13 = from 4.000 to 8.000 particles $\geq 14\mu$ m in 100 ml



Simple



Detailed

12.7a

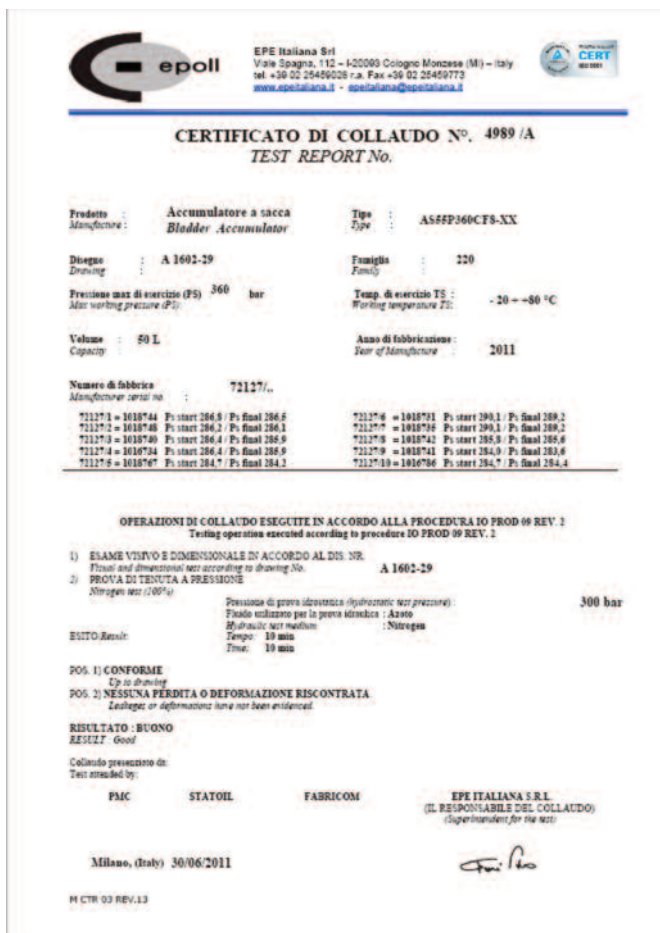
12.7.5 CORRESPONDENCE BETWEEN CONTAMINATION CLASS ISO 4406 AND NAS 1638 AND THEIR APPLICATION AREAS

Contamination class ISO 4406	15/13/10	16/14/11	17/15/12	18/16/13	19/17/14	20/18/15	21/19/16	22/20/17
Contamination class NAS 1638	4	5	6	7	8	9	10	11
Application areas	Test-bench, aeronautics	Aeronautics, industrial robotics	Industrial robotics, precision machines tools	Industrial machines with high reliability, hydrostatic transmission	Industrial machines, earthmoving machines	Mobile machines	Machines for heavy industry	Agricultural machines, simple systems, not continuous use

12.7d

12.7.6 CERTIFICATE OF TESTING AND FLUSHING

In relation to customer specifications, is issued a test certificate indicating the degree of flushing required according to the applicable law.



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CERTIFICATO DI COLLAUDO N° 4989 /A
TEST REPORT No.

Prodotto: Accumulatore a sacca
Manifattura: Bladder Accumulator
Tipologia: AS56P360CF8-XX

Drawing: A 1602-29
Family: 220

Prestazione max di esercizio (PS): 360 bar
Max working pressure (PW): 360 bar
Temp. di esercizio TS: -20 - +80 °C
Working temperature T1: -20 - +80 °C

Volume: 50 L
Capacity: 50 L
Anno di fabbricazione: 2011
Year of Manufacture: 2011

Numero di fabbrica: 72127/..

Manifattura serial no:

72127/1 = 1018744 P1 start 286.9 / P1 final 286.6
72127/2 = 1018746 P1 start 286.2 / P1 final 286.1
72127/3 = 1018749 P1 start 286.4 / P1 final 286.9
72127/4 = 1018754 P1 start 286.4 / P1 final 286.9
72127/5 = 1018767 P1 start 284.7 / P1 final 284.2
72127/6 = 1018751 P1 start 289.1 / P1 final 289.2
72127/7 = 1018756 P1 start 289.1 / P1 final 289.2
72127/8 = 1018742 P1 start 285.9 / P1 final 285.9
72127/9 = 1018741 P1 start 284.9 / P1 final 284.6
72127/10 = 1018756 P1 start 284.7 / P1 final 284.4

OPERAZIONI DI COLLAUDO ESEGUITE IN ACCORDO ALLA PROCEDURA IO PROD 09 REV. 2
Testing operation executed according to procedure IO PROD 09 REV. 2

1) ESAME VISIVO E DIMENSIONALE IN ACCORDO AL DIS. NR. A 1602-29
Visual and dimensional test according to drawing No.

2) PROVA DI TENUTA A PRESSIONE
Stripping test (100%)

Pressione di prova idrostatica (idrostatic test pressure): 300 bar
Fluido utilizzato per la prova idrostatica: Azoto
Stripping test medium: Nitrogen
Tempo: 10 min
Time: 10 min

ESITO/Result:

POS. 1) CONFORME
Up to drawing

POS. 2) NESSUNA PERDITA O DEFORMAZIONE RISCONTRATA
Leakages or deformations have not been evidenced

RISULTATO: BUONO
RESULT: Good

Collaudo presentato da:
Test created by:

PMC STATOIL FABRICOM EPE ITALIANA S.R.L.
(IL RESPONSABILE DEL COLLAUDO)
(Superintendent for the test)

Milano, (Italy) 30/06/2011

H CTR 03 REV.13

12.7e

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12.8.1 TECHNICAL ASSISTANCE

EPE Italiana has the means and professionally qualified people with specific skills ready to intervene at any time, in any situation anywhere in the world. Interventions are promptly made and when the product is under warranty and for scheduled maintenance or in case of a sudden failure.



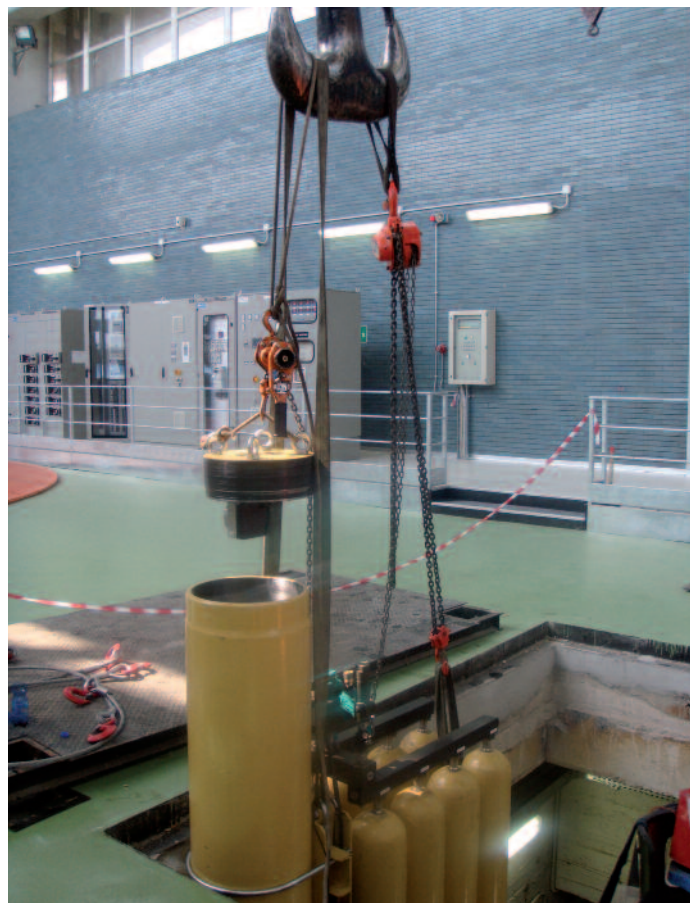
12.8a



12.8b



12.8c



12.8d

Many of our components can also be used on competitors products. We can pre-charge accumulators with nitrogen up to 300 bar and at our company, either at the customer site.



12.8e

12.8.2 TRAINING

EPE Italiana can organize training courses for its customers, thanks to his experience in the sector, make available an educational initiative that could allow users to use the products in a comprehensive and dynamic way. The courses are held at the offices of EPE Italiana at Viale Spagna, 112 in Cologno Monzese (MI) ITALY or at the customer site.



12.8f

Our courses are open to all users of EPE Italiana with the goal of teaching the basic use of the products or to deepen some topics, or to update its customers about new products.

Courses are also provided on request according to customer requirements.

Generally the courses provide a theoretical and a practical part and take place in appropriate areas to test the knowledge gained during the training days.

In these courses in oleodynamic can be treated one or all of the topics listed below for both theoretical and practical part:

THEORETICAL COURSE

- BASIC PRINCIPLES OF OLEODYNAMIC
- HYDRAULIC FLUIDS AND THEIR CONTAMINATION
- OLEODYNAMIC POWER UNITS AND COMPONENTS
- SEALS, PIPES AND FITTINGS
- OLEODYNAMIC ACCUMULATORS AND CE/PED CERTIFICATION
- VALVES AND SAFETY BLOCKS
- MAINTENANCE OF OLEODYNAMIC SYSTEMS, PRESSURE MEASUREMENT AND RESTORATION OF PRE-CHARGE ACCUMULATORS, PERIODIC CHECKS (LAW N° 329 OF 1st DEC. 2004)
- ACCUMULATOR STATIONS AND THEIR COMPONENTS

PRACTICAL COURSE

- RECOGNITION OF COMPONENTS
- MAINTENANCE
- MEASUREMENT OF PRE-CHARGE PRESSURE
- PRESSURE MONITORING
- PRE-CHARGE
- DISASSEMBLY OF COMPONENTS

At the end of the course will be given a certificate for the course/s attended.

This is an important commitment to EPE Italiana which confirms its willingness to be close to the needs of cultural growth of its customers.



12.8g

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