

SERVICE & OPERATING MANUAL

Original Instructions

Certified Quality



Quality System
ISO9001 Certified



Environmental Management System
ISO14001 Certified

Member of:
Hydraulic
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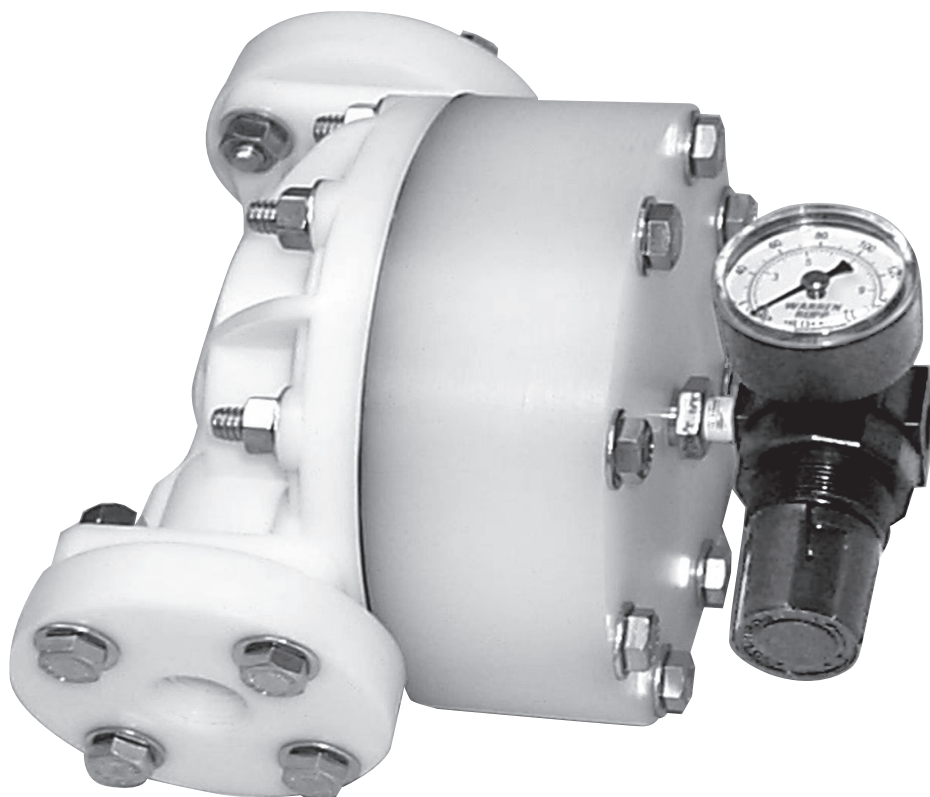
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DA05, DA07, DA10

Metallic & Non-Metallic Surge Dampeners



1: SPECS

2: INSTAL & OP

3: EXP VIEW

4: WARRANTY

SANDPIPER®
A WARREN RUPP, INC. BRAND

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Safety Information

! IMPORTANT



Read the safety warnings and instructions in this manual before pump installation and start-up. Failure to comply with the recommendations stated in this manual could damage the pump and void factory warranty.



When the pump is used for materials that tend to settle out or solidify, the pump should be flushed after each use to prevent damage. In freezing temperatures the pump should be completely drained between uses.

! CAUTION



Before pump operation, inspect all fasteners for loosening caused by gasket creep. Retighten loose fasteners to prevent leakage. Follow recommended torques stated in this manual.



Nonmetallic pumps and plastic components are not UV stabilized. Ultraviolet radiation can damage these parts and negatively affect material properties. Do not expose to UV light for extended periods of time.

! WARNING



When used for toxic or aggressive fluids, the pump should always be flushed clean prior to disassembly.



Before maintenance or repair, shut off the compressed air line, bleed the pressure, and disconnect the air line from the pump. Be certain that approved eye protection and protective clothing are worn at all times. Failure to follow these recommendations may result in serious injury or death.



Airborne particles and loud noise hazards. Wear eye and ear protection.



In the event of diaphragm rupture, pumped material may enter the air end of the pump, and be discharged into the atmosphere. If pumping a product that is hazardous or toxic, the air exhaust must be piped to an appropriate area for safe containment.



Take action to prevent static sparking. Fire or explosion can result, especially when handling flammable liquids. The pump, piping, valves, containers and other miscellaneous equipment must be properly grounded.



This pump is pressurized internally with air pressure during operation. Make certain that all fasteners are in good condition and are reinstalled properly during reassembly.

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Explanation of Pump Nomenclature

Your Model #:

(fill in from pump nameplate)

Pump Brand	Pump Size	Design Level	Wetted Material	Non-Wetted Material	Diaphragm Material	Porting Options	Hardware Options	Kit Options
DA	XX	X	X	X	X	X	X	XX

Pump Brand

DA SANDPIPER®

Pump Size

05 1/2"

07 3/4"

10 1"

Design Level

1 Design Level

Wetted Material

K PVDF

P Polypropylene

S Stainless Steel

Non-Wetted Material Options

P Polypropylene

Diaphragm Materials

T Virgin PTFE

Porting Options

N NPT Threads

B BSP (Tapered) Threads

Hardware

Z Zinc Plated Steel

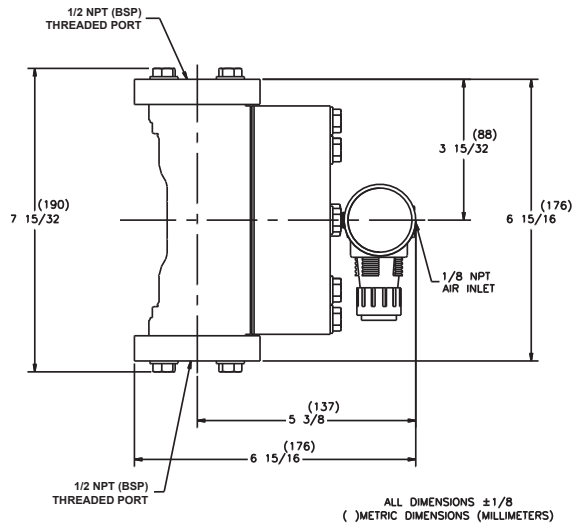
T PTFE Coated

S Stainless Steel

Kit Options

00. None

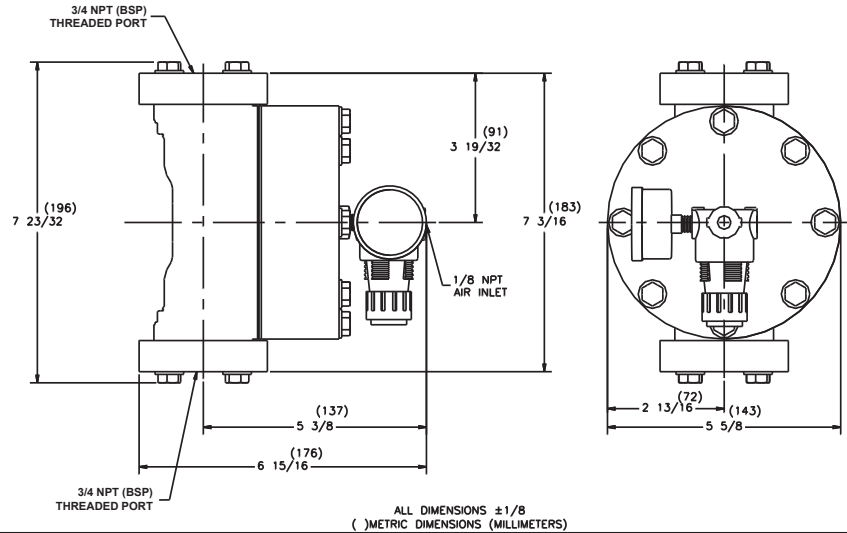
Dimensional Drawings



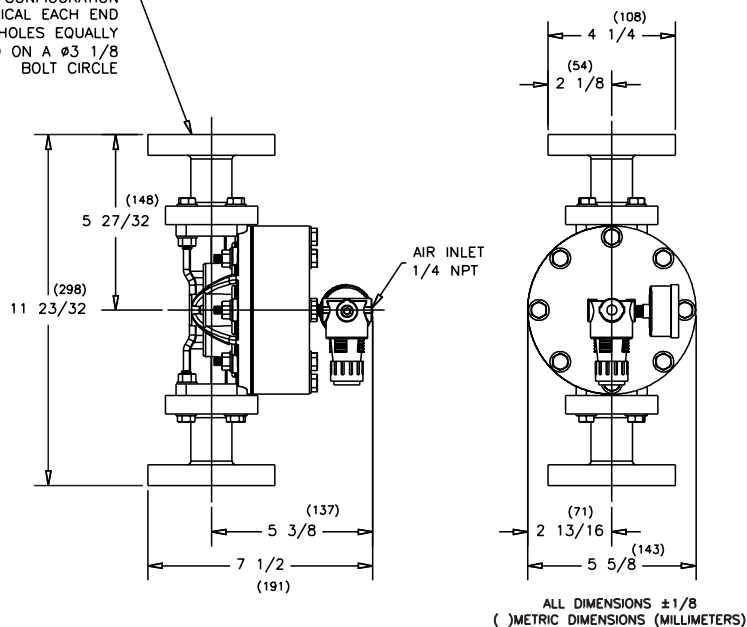
DA05

**Metallic and
Non-Metallic**

DA07



ANSI STANDARD 125#
1" FLANGE CONFIGURATION
TYPICAL EACH END
ø5/8 (4) HOLES EQUALLY
SPACED ON A ø3 1/8
BOLT CIRCLE



DA10

Principle of Operation

The Warren Rupp, Inc. Surge Dampener reduces flow and pressure pulsation which is characteristic of reciprocating pumps.

PRINCIPLE OF OPERATION

The surge dampener uses a flexible virgin PTFE diaphragm to separate a liquid chamber from a compressed air chamber. After the dampener is manually charged with air, the diaphragm strokes at the same rate as the pump strokes. This movement effectively "dampens" flow and pressure fluctuations.



TEMPERATURE LIMITATIONS

Operating temperature limitations are as follows.

<u>Material</u>	<u>Minimum Temp.</u>	<u>Maximum Temp.</u>
PVDF	0°F/ -18°C	212°F / 100°C
Nylon	32°F/ 0°C	180°F / 82°C
Polypropylene	32°F/ 0°C	180°F / 82°C
Virgin PTFE	-35°F/ -31°C	212°F / 100°C
Nitrile	-10°F/ -23°C	190°F / 88°C

INSTALLATION & START-UP

Locate the unit in the discharge piping near the pump. The dampener will operate in any position. However, when used with liquids that tend to settle out, the unit should be installed at the top side of piping to provide easy discharge of foreign solids by gravity.

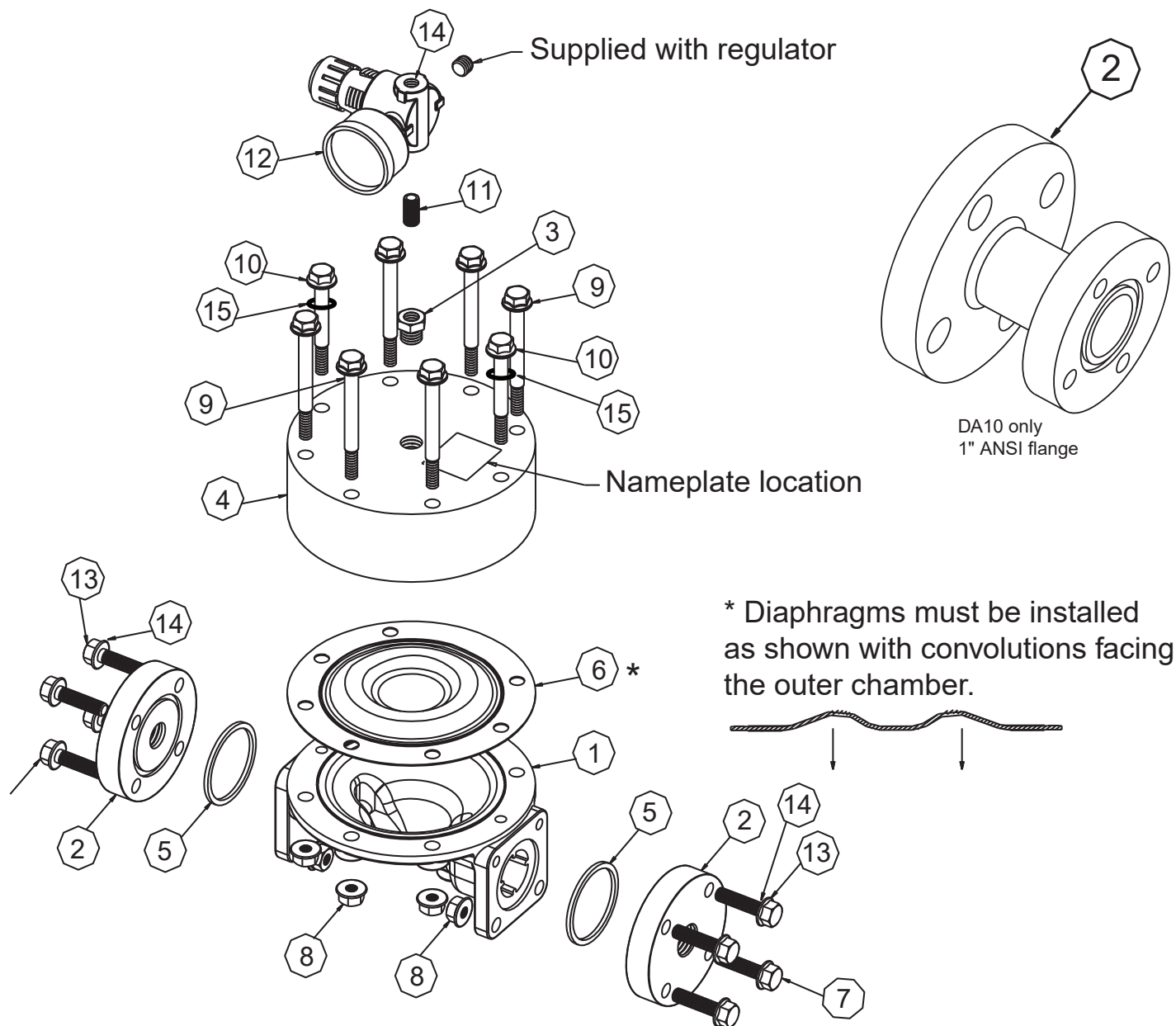
Adjust the inlet air pressure to the dampener until the pump runs as smoothly as possible. Watch the liquid discharging, or use a gauge, to detect pressure fluctuations. Then adjust pressure to the unit as needed.

NOTE: Self-relieving regulator 020-039-000 will make these adjustments easier.

SERVICE

When service is required on the dampener, remove the 8 capscrews. The wetted chamber can be removed from the unit and exposes the diaphragm. Remove the diaphragm. When reassembling the wetted chamber onto the air chamber, use a torque wrench set at 70 in/lbs. (7.9 Newton meters)

Composite Repair Parts Drawing



Composite Repair Parts List

ITEM NO.	PART NUMBER	DESCRIPTION	TOTAL RQD.
1	196.178.552	Chamber, Outer	1
	196.178.520	Chamber, Outer	1
	196.171.110	Chamber, Outer (DA05 Metallic only)	1
	196.171.157	Chamber, Outer (DA05 Metallic only)	1
2	334.103.552	Flange, Threaded 1/2" NPT (DA05)	2
	334.103.542	Flange, Threaded 1/2" NPT (DA05)	2
	334.103.600	Flange, Threaded 1/2" NPT (DA05)	2
	334.109.110	Flange, Threaded 1/2" NPT (Metallic DA05 only)	2
	334.109.150	Flange, Threaded 1/2" NPT (Metallic DA05 only)	2
	334.104.552	Flange, Threaded 3/4" NPT (DA07)	2
	334.104.542	Flange, Threaded 3/4" NPT (DA07)	2
	334.107.552	Flange, 1" ANSI (DA10)	2
3	135.022.115	Bushing, Reducer	2
4	196.166.552	Chamber, Inner	1
5	720.058.600	Seal, Flange	2
	720.063.600	Seal, Flange (Metallic DA05 only)	2
6	286.097.600	Diaphragm	1
7	171.064.115	Capscrew Hex Flange 5/16 -18 x 1.50	4
	171.064.308	Capscrew Hex Flange 5/16 -18 x 1.50	4
	170.029.330	Capscrew, Hex Flange 5/16 x 1.50 (Metallic DA05 only)	4
8	544.005.115	Nut 5/16 Hex Flange Nut 5/16-18	10
	544.005.308	Nut 5/16 Hex Flange Nut 5/16-18	10
	545.004.330	Hex Flange Nut (Metallic DA05 only)	10
9	171.070.115	Capscrew Hex Flange 5/16 -18 x 3.00	6
	171.070.308	Capscrew Hex Flange 5/16 -18 x 3.00	6
	171.070.330	Capscrew, Hex Flange (Metallic DA05 only)	2
10	170.135.115	Capscrew Hex 5/16 -18 x 2.25	2
	171.069.308	Capscrew Hex Flange 5/16 -18 x 2.5	2
	171.069.330	Capscrew, Hex Flange (Metallic DA05 only)	2
11	538.002.115	Nipple 1/8 NPT	1
12	020.039.000	Regulator W/Gauge	1
13	170.045.330	Capscrew Hex Flange (DA05 Metallic Only) 5/16 -18 x 1.25	4
	171.063.115	Capscrew Hex Flange 5/16 -18 x 1.25	4
14	900.004.330	LockWasher (DA05 Metallic Only)	14
15	901.038.115	Flat Washer (Non-Metallic Only)	2

Repair Parts shown in **bold face (darker)** type are more likely to need replacement after extended periods of normal use. They are readily available from most SANDPIPER® distributors. The pump owner may prefer to maintain a limited inventory of these parts in his own stock to reduce repair downtime to a minimum.

IMPORTANT: When ordering repair parts always furnish pump model number, serial number and type number.

MATERIAL CODES

The Last 3 Digits of Part Number

000...	Assembly, sub-assembly; and some purchased items
110...	CF*M (316) Stainless Steel
115...	302/304 Stainless Steel
157...	380/383 Die Cast Aluminum
308...	Stainless Steel; Black PTFE Coated
330...	Zinc Plated Carbon Steel
360...	Nitrile Rubber. Color coded: RED
520...	Injection Molded PVDF, Natural Color,
542...	Nylon
552...	Polypropylene
600...	Virgin PTFE

Warranty

5 - YEAR Limited Product Warranty

Warren Rupp, Inc. ("Warren Rupp") warrants to the original end-use purchaser that no product sold by Warren Rupp that bears a Warren Rupp brand shall fail under normal use and service due to a defect in material or workmanship within five years from the date of shipment from Warren Rupp's factory. Warren Rupp brands include Warren Rupp®, SANDPIPER®, SANDPIPER Signature Series™, MARATHON®, Porta-Pump®, SludgeMaster™ and Tranquilizer®.

The use of non-OEM replacement parts will void (or negate) agency certifications, including CE, ATEX, CSA, 3A and EC1935 compliance (Food Contact Materials). Warren Rupp, Inc. cannot ensure nor warrant non-OEM parts to meet the stringent requirements of the certifying agencies.

~ See sandpiperpump.com/content/warranty-certifications for complete warranty, including terms and conditions, limitations and exclusions. ~

SANDPIPER®

EC Declaration of Conformity

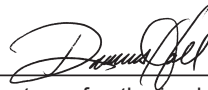
Manufacturer:
Warren Rupp, Inc.
800 N. Main Street
Mansfield, Ohio, 44902 USA

Certifies that Air-Operated Double Diaphragm Pump Models: DSB Series, DMF Series, G Series, HDB Series, HDF Series, HP Series, F Series, MS Series, S Series, SL Series, SP Series, SSB Series, T Series, U1F Series, WR Series; High Pressure Pump Models: EH Series, GH Series, SH Series; Submersible Pump Models: SMA3 Series, SPA Series; and Surge Dampener/Suppressor Models: DA Series, TA Series comply with the European Community Directive 2006/42/EC on Machinery, according to Annex VIII. This product has used Harmonized Standard EN809:2012, Pumps and Pump Units for Liquids - Common Safety Requirements, to verify conformance.

October 3, 2022

DATE/APPROVAL/TITLE:

Technical File on record with:
DEKRA Certification B.V.
Meander 1051
6825 MJ Arnhem
The Netherlands



Signature of authorized person

Dennis Hall

Printed name of authorized person

Engineering Manager

Title

IDEX

CE



EC Declaration of Conformity

Manufacturer:
Warren Rupp, Inc.
800 N. Main Street
Mansfield, Ohio, 44902 USA

Certifies that Air-Operated Double Diaphragm Pump Models: DSB Series, DMF Series, G Series, HDB Series, HDF Series, HP Series, F Series, MS Series, S Series, SL Series, SP Series, SSB Series, T Series, U1F Series, WR Series; High Pressure Pump Models: EH Series, GH Series, SH Series; Submersible Pump Models: SMA3 Series, SPA Series; and Surge Dampener/Suppressor Models: DA Series, TA Series comply with the United Kingdom Statutory Instruments 2008 No. 1597, The Supply of Machinery (Safety) Regulations 2008, according to Annex VIII. This product has used Designated Standard EN809:2012, Pumps and Pump Units for Liquids - Common Safety Requirements, to verify conformance.

October 17, 2022

DATE/APPROVAL/TITLE:

Technical File on record with:
DEKRA Certification UK Limited
Stokenchurch House
Oxford Road
Stokenchurch
HP14 3SX

Signature of authorized person

Dennis Hall

Printed name of authorized person

Engineering Manager

Title

