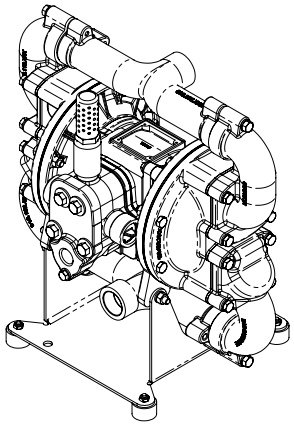
WARREN RUPP®

Quality System ISO9001 Certified

Environmental Management System ISO14001 Certified

IDEX FLUID & METERING



See page 2, 5 & 6 for ATEX ratings

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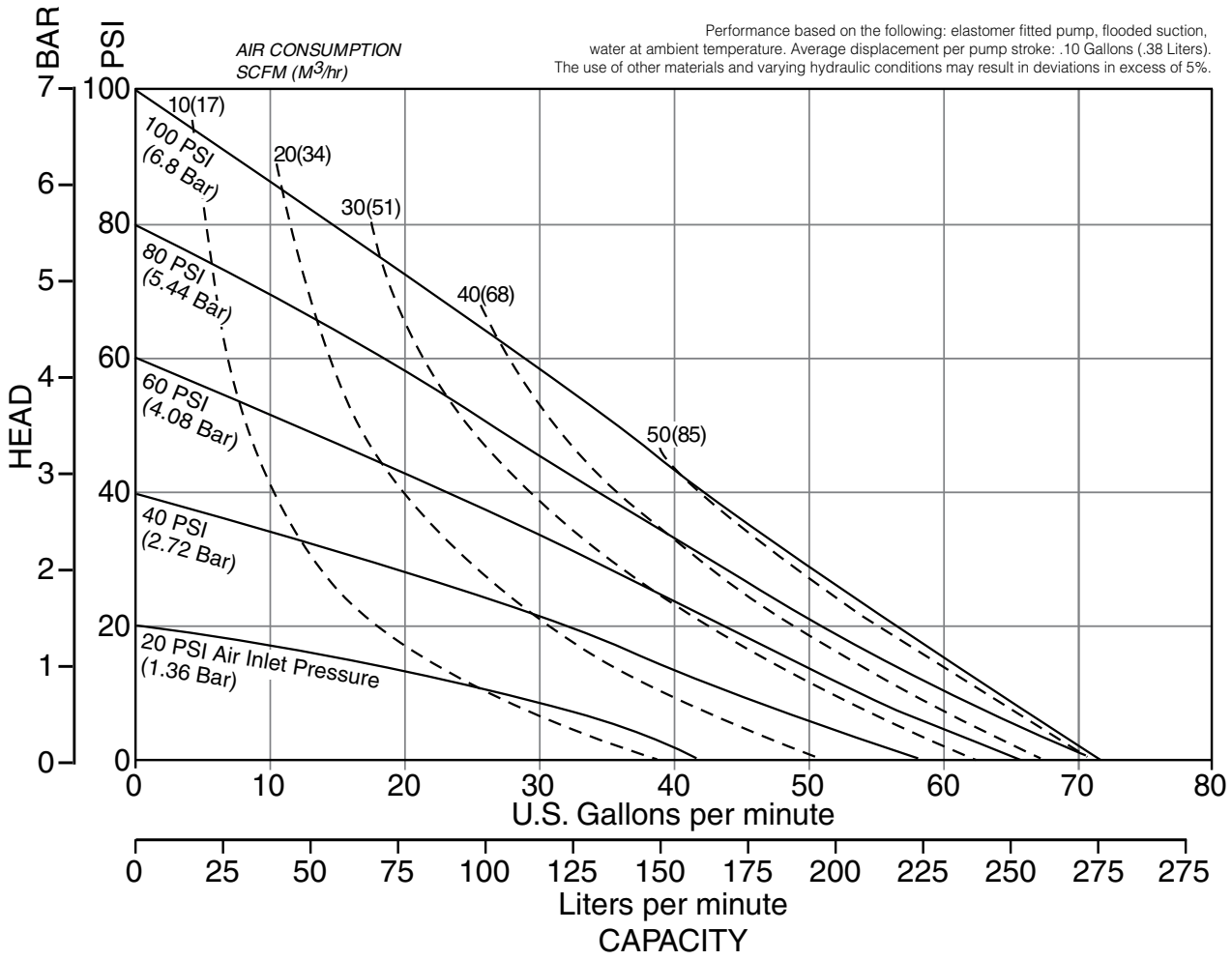
MARATHON®
A WARREN RUPP, INC. BRAND

MHDF1 Type 1
MHDF25 Type 1
Heavy Duty Flap Valve

Air-Operated Double Diaphragm Pump

ENGINEERING, PERFORMANCE & CONSTRUCTION DATA

INTAKE/DISCHARGE PIPE SIZE	CAPACITY	AIR VALVE	SOLIDS-HANDLING	HEADS UP TO	DISPLACEMENT/STROKE
MHDF1: 1" NPT(F) MHDF25: 1" BSP Tapered	0 to 70 gallons per minute (0 to 265 liters per minute)	No-lube, no-stall design	1" (25.4mm)	125 psi or 289 ft. of water (8.8 Kg/cm² or 88 meters)	.10 Gallon / .38 liter



MARATHON® pumps are designed to be powered only by compressed air.

Explanation of Pump Nomenclature

MATERIALS OF CONSTRUCTION

To order a pump or replacement parts, first enter the Model Number MHDF1, or MHDF25, followed by the Type Designation listed below in the far left column.

Type	Manifold & Elbow	Outer Chamber	Inner Chamber	Outer Diaphragm Plate	Inner Diaphragm Plate	Intermediate Housing	Diaphragm Rod	Valve Seat	Hard-ware	Diaphragm	Flap Valve Material	Seat/ Manifold Seal	Air Valve	Air Valve Cap	Shipping Wt. (lbs)
DB1A.	356-T6AL	356-T6AL	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	B	B	B	PE	AL380DC	48
DI1A.	356-T6AL	356-T6AL	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	I	I	I	PE	AL380DC	48
DN1A.	356-T6AL	356-T6AL	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	N	N	N	PE	AL380DC	48
DV1A.	356-T6AL	356-T6AL	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	V	V	V	PE	AL380DC	48
DP1A.	356-T6AL	356-T6AL	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	S	S	I	PE	AL380DC	48
DR1A.	356-T6AL	356-T6AL	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	H	H	N	PE	AL380DC	48
DA1A.	356-T6AL	356-T6AL	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	N	U	N	PE	AL380DC	48
DB1I.	CI	CI	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	B	B	B	PE	AL380DC	61
DI1I.	CI	CI	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	I	I	I	PE	AL380DC	61
DN1I.	CI	CI	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	N	N	N	PE	AL380DC	61
DV1I.	CI	CI	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	V	V	V	PE	AL380DC	61
DP1I.	CI	CI	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	S	S	I	PE	AL380DC	61
DR1I.	CI	CI	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	H	H	N	PE	AL380DC	61
DA1I.	CI	CI	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	N	U	N	PE	AL380DC	61
DB1S.	SS	SS	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	B	B	B	PE	AL380DC	64
DI1S.	SS	SS	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	I	I	I	PE	AL380DC	64
DN1S.	SS	SS	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	N	N	N	PE	AL380DC	64
DV1S.	SS	SS	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	V	V	V	PE	AL380DC	64
DP1S.	SS	SS	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	S	S	I	PE	AL380DC	64
DR1S.	SS	SS	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	H	H	N	PE	AL380DC	64
DA1S.	SS	SS	AL380DC	AL380DC	PS	AL380DC	416SS	SS	PS	N	U	N	PE	AL380DC	64
DB1II.	CI	CI	CI	CI	PS	CI	416SS	SS	PS	B	B	B	PE	PE	76
DI1II.	CI	CI	CI	CI	PS	CI	416SS	SS	PS	I	I	I	PE	PE	76
DN1II.	CI	CI	CI	CI	PS	CI	416SS	SS	PS	N	N	N	PE	PE	76
DV1II.	CI	CI	CI	CI	PS	CI	416SS	SS	PS	V	V	V	PE	PE	76
DP1II.	CI	CI	CI	CI	PS	CI	416SS	SS	PS	S	S	I	PE	PE	76
DR1II.	CI	CI	CI	CI	PS	CI	416SS	SS	PS	H	H	N	PE	PE	76
DA1II.	CI	CI	CI	CI	PS	CI	416SS	SS	PS	N	U	N	PE	PE	76
DB1SI.	SS	SS	CI	CI	PS	CI	416SS	SS	PS	B	B	B	PE	PE	79
DI1SI.	SS	SS	CI	CI	PS	CI	416SS	SS	PS	I	I	I	PE	PE	79
DN1SI.	SS	SS	CI	CI	PS	CI	416SS	SS	PS	N	N	N	PE	PE	79
DV1SI.	SS	SS	CI	CI	PS	CI	416SS	SS	PS	V	V	V	PE	PE	79
DP1SI.	SS	SS	CI	CI	PS	CI	416SS	SS	PS	S	S	I	PE	PE	79
DR1SI.	SS	SS	CI	CI	PS	CI	416SS	SS	PS	H	H	N	PE	PE	79
DA1SI.	SS	SS	CI	CI	PS	CI	416SS	SS	PS	N	U	N	PE	PE	79

Meaning of Abbreviations:

AL = Aluminum
B = Nitrile
CI = Cast Iron
DC = Die Cast
H = Hytrel
I = EPDM
N = Neoprene
PE = Conductive HDPE
PS = Plated Steel
S = Sanotprene
SS = Stainless Steel
U = Urethane
V = FKM

Maximum and Minimum Temperatures are the limits for which these materials can be operated. Temperatures coupled with pressure affect the longevity of diaphragm pump components. Maximum life should not be expected at the extreme limits of the temperature ranges.

Materials	Operating Temperatures Maximum	Minimum
Nitrile/FDA White Nitrile General purpose, oil-resistant. Shows good solvent, oil, water and hydraulic fluid resistance. Should not be used with highly polar solvents like acetone and MEK, ozone, chlorinated hydrocarbons and nitro hydrocarbons.	190°F 88°C	-10°F -23°C
EPDM Shows very good water and chemical resistance. Has poor resistance to oil and solvents, but is fair in ketones and alcohols.	280°F 138°C	-40°F -40°C
NEOPRENE All purpose. Resistant to vegetable oils. Generally not affected by moderate chemicals, fats, greases and many oils and solvents. Generally attacked by strong oxidizing acids, ketones, esters, nitro hydrocarbons and chlorinated aromatic hydrocarbons.	200°F 93°C	-10°F -23°C
HYTREL® Good on acids, bases, amines and glycols at room temperature.	220°F 104°C	-20°F -29°C
FKM (Fluorocarbon) shows good resistance to a wide range of oils and solvents; especially all aliphatic, aromatic and halogenated hydrocarbons, acids, animal and vegetable oils. Hot water or hot aqueous solutions (over 70°F) will attack FKM.	350°F 177°C	-40°F -40°C
Urethane Shows good resistance to abrasives. Has poor resistance to most solvents and oils.	150°F 66°C	32°F 0°C
Santoprene® Injection molded thermoplastic elastomer with no fabric layer. Long mechanical flex life. Excellent abrasion resistance.	275°F 135°C	-40°F -40°C
CF-8M Stainless Steel equal to or exceeding ASTM specification A743 for corrosion resistant iron chromium, iron chromium nickel, and nickel based alloy castings for general applications. Commonly referred to as 316 Stainless Steel in the pump industry.		

For specific applications, always consult "Chemical Resistance Chart" Technical Bulletin

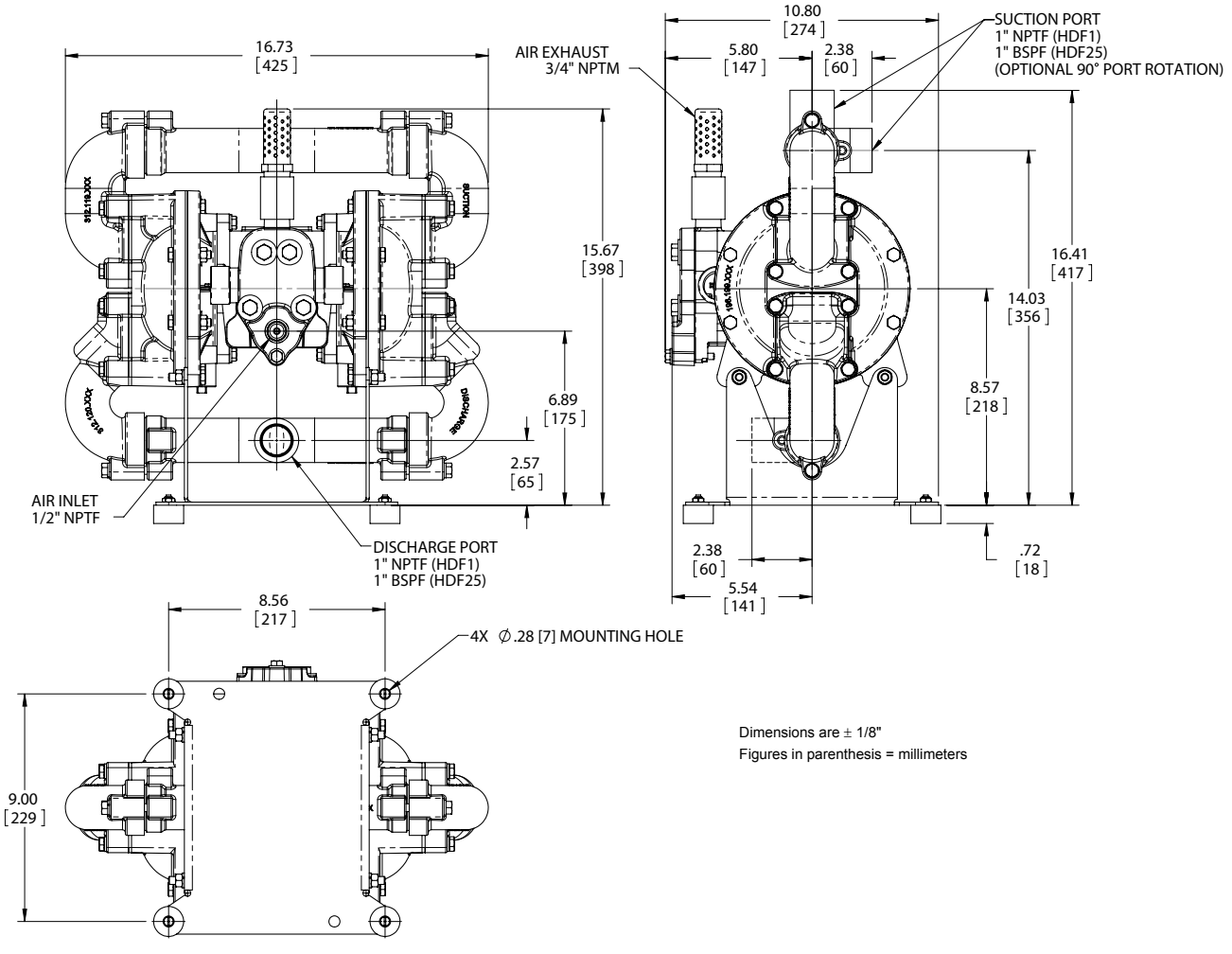
II 1 G c T5
II 3/1 G c T5
II 1 D c T100oC
I M1 c
I M2 c

Models equipped with Cast Iron or Stainless Steel wetted parts and Cast Iron midsection parts. See page 6 for ATEX Explanation of EC-Type Certificate.

II 2 G c T5
II 3/2 G c T5
II 2 D c T100oC

All models, including pumps equipped with Aluminum wetted and midsection parts.
See page 6 for ATEX Explanation of Type Examination Certificate.

Dimensions: MHDF1 & MHDF25 Metallic



Model MHDF1 features NPT threaded connections.

Model MHDF25 features British Standard Pipe (BSP) Tapered threaded connections.

Note:
Unit furnished with sub-base plate and rubber feet as standard. For stationary bolt down use, rubber feet can be removed.

MHDF1: 1" NPT(F) SUCTION AND DISCHARGE • ½" NPT (F) AIR INLET PORT • ¾" NPT (F) AIR EXHAUST PORT (NOT SHOWN)
MHDF25: 1" BSP(F) TAPERED SUCTION AND DISCHARGE • ½" NPT (F) AIR INLET PORT • ¾" NPT (F) AIR EXHAUST PORT (NOT SHOWN)

MARATHON®
A WARREN RUPP, INC. BRAND

Declaration of Conformity

Manufacturer:
Warren Rupp, Inc.®, 800 N. Main Street, P.O. Box 1568,
Mansfield, Ohio, 44901-1568 USA
certifies that Air-Operated Double Diaphragm Pump Series:
M Non-Metallic, M Metallic, and Surge Suppressors comply
with the European Community Directive 2006/42/EC on Machinery,
according to Annex VIII. This product has used Harmonized Standard
EN 809, Pumps and Pump Units for Liquids - Common Safety
Requirements, to verify conformance.

David Roseberry
Signature of authorized person

October 20, 2005
Date of issue

David Roseberry
Printed name of authorized person

Engineering Manager
Title

Revision Level: E

May 27, 2010
Date of revision

IDEX
FLUID & METERING

CE

Declaration of Conformity
Declaration of Conformity

MARATHON®
A WARREN RUPP, INC. BRAND

EC Declaration of Conformity

In accordance with ATEX Directive 94/9/EC,
Equipment intended for use in potentially explosive environments.

Manufacturer:
Warren Rupp, Inc.®
A Unit of IDEX Corportion
800 North Main Street
P.O. Box 1568
Mansfield, OH 44901-1568 USA

Applicable Standard:
EN13463-1: 2001,
EN13463-5: 2003

EN 60079-25: 2004
For pumps equipped with Pulse Output ATEX Option
KEMA Quality B.V. (0344)

AODD Pumps and Surge Sppressors
For Type Examination Designations, see page 2 (back)

AODD (Air-Operated Double Diaphragm) Pumps
EC Type Examination Certificate No. Pumps: KEMA 09ATEX0071 X

KEMA Quality B.V.
Utrechtseweg 310
6812 AR Arnhem, The Netherlands

DATE/APPROVAL/TITLE:
27 MAY 2010

David Roseberry, Engineering Manager

IDEX FLUID & METERING

MARATHON®
A WARREN RUPP, INC. BRAND

EC Declaration of Conformity

ATEX Summary of Markings

Type	Marking			Listed In	Non-Conductive Fluids
Pump types, M05, M1F, M15, M20 and M30 provided with the pulse output option		II 2 G Ex ia c IIC T5 II 3/2 G Ex ia c IIC T5 II 2 D Ex c iaD 20 IP67 T100°C	KEMA 09ATEX0071 X CE 0344	KEMA 09ATEX0071 X KEMA 09ATEX0071 X KEMA 09ATEX0071 X	No Yes Yes
Pump types, M05, M1F, M15 M20 and M30 provided with the integral solenoid option		II 2 G EEx m c II T5 II 3/2 G EEx m c II T5 II 2 D c IP65 T100°C	KEMA 09ATEX0071 X CE 0344	KEMA 09ATEX0071 X KEMA 09ATEX0071 X KEMA 09ATEX0071 X	No Yes Yes
Pump types, MPB1/4, M05, M1F, M15, M20, M30, MSB1, MHDF1, MHDF2 without the above listed options, no aluminum parts		II 1 G c T5 II 3/1 G c T5 II 1 D c T100°C I M1 c I M2 c	KEMA 09ATEX0071 X KEMA 09ATEX0072 X CE 0344	KEMA 09ATEX0071 X KEMA 09ATEX0071 X KEMA 09ATEX0071 X KEMA 09ATEX0071 X KEMA 09ATEX0072 X	No Yes Yes No Yes
Pump types, MPB1/4, M05, M1F, M15, M20, M30, MSB1, MHDF1, MHDF2, MHDF3		II 2 G c T5 II 3/2 G c T5 II 2 D c T100°C	KEMA 09ATEX0072 X CE	KEMA 09ATEX0072 X KEMA 09ATEX0072 X KEMA 09ATEX0072 X	No Yes Yes
MT Series Surge Suppressors		II 2 G T5 II 3/2 G T5 II 2 D T100°C	KEMA 09ATEX0073 CE	KEMA 09ATEX0073 KEMA 09ATEX0073 KEMA 09ATEX0073	No Yes Yes

EC Type Certificate No. Pumps: KEMA 09ATEX0071 X
Type Certificate No. Pumps: KEMA 09ATEX0072 X
Type Certificate No. Suppressors: KEMA 09ATEX0073

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