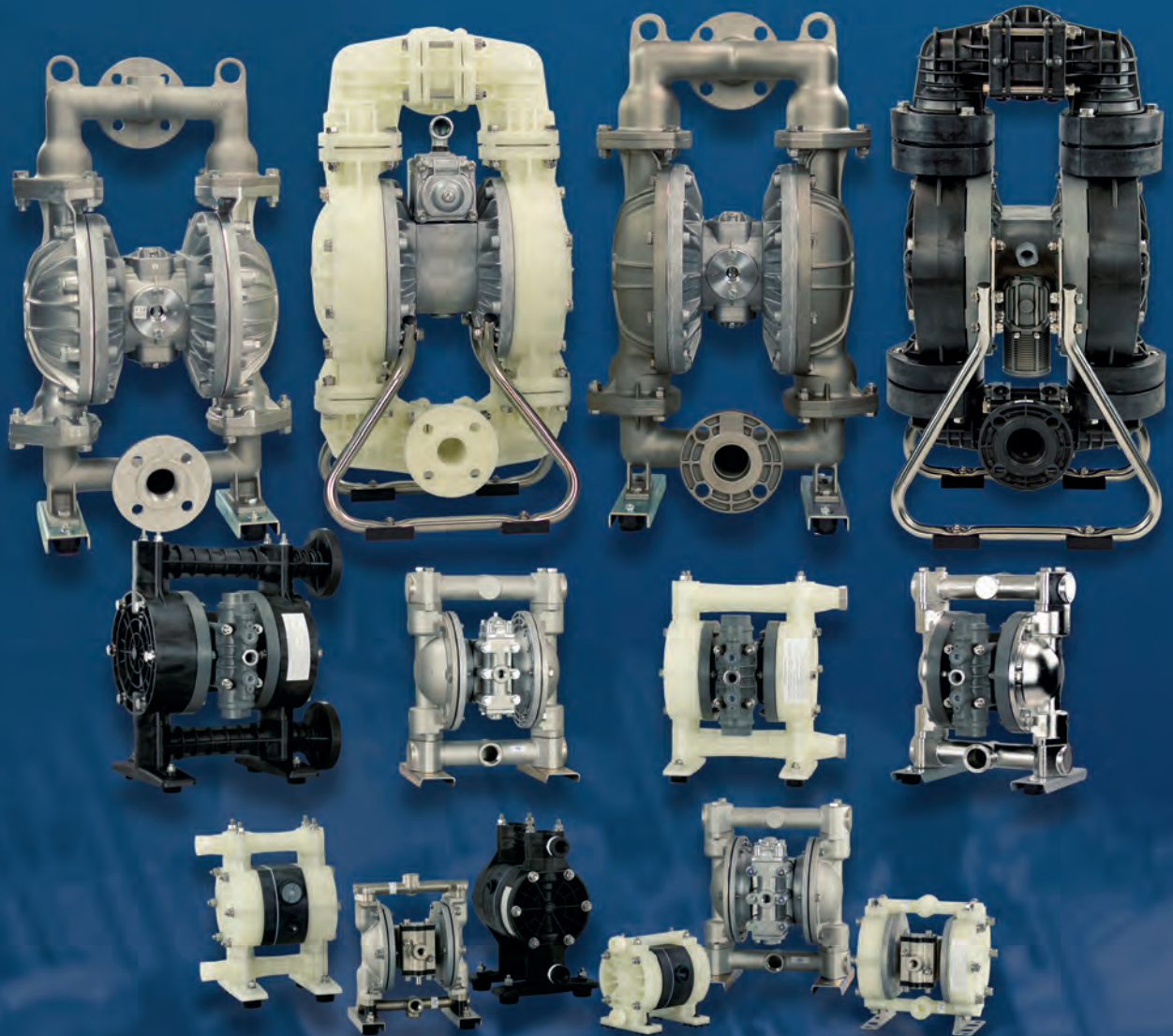




PRODUCT SPECIFICATION GUIDE

yamadapump.com



Air-Powered Double Diaphragm Pumps

About Yamada

Engineers and Manufacturers of
Air Powered Double Diaphragm Pumps

The Proof's
in the Pump®



Yamada®

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The Yamada Corporation

The Yamada Corporation has been a leading producer of industrial equipment since 1905, and of fluid handling products for over 65 years. As a leader in pneumatic pumping technology, Yamada is known in many industries worldwide for its innovative products, superior quality, and unmatched reliability. An impressive history of product design and engineered solutions establishes Yamada as forerunner in industrial pump technology.

Yamada's reputation for manufacturing top quality products, allied with continuing efforts in research and development, have created a strong foundation for market leadership. As an ISO 9001 certified corporation, stringent quality procedures are followed throughout the manufacturing process, including assembly procedures and product testing.

The Yamada Corporation is headquartered in **Tokyo** with manufacturing facilities located throughout Japan. Production facilities are located in **Arlington Heights, Illinois, USA**, servicing the Western Hemisphere; **The Netherlands**, providing support throughout Europe, Africa, and the Middle East; and **Shanghai**, covering the emerging Asian market. These offices are support centers for over 400 authorized fully stocking Yamada distributors worldwide.

Yamada America, Inc., a wholly owned subsidiary of the Yamada Corporation, was established in 1986 to provide service and support for the North, Central, and South American markets, through a highly trained network of distributors.

The Yamada America Corporation:

- Professional Customer Service
- Product Training
- Research & Development
- Yamada® Genuine Parts and Service for Yamada® Pumps
- Application Engineering
- Industry Experience and Expertise

Yamada America maintains an impressive inventory of built and tested pumps in their 40,000 square foot state-of-the-art facility, expeditiously providing Yamada® Pumps and Yamada® Genuine Parts to accommodate customer requests.

With over 150 distributors, Yamada America is effectively positioned to service your market needs. Contact Yamada America for the location of your closest local stocking distributor.

Our slogan, *The Proof's in the Pump*® underscores our solid reputation for innovation and reliability. This reputation is truly built into every Yamada pump.

For additional information, AutoCAD® drawings, product literature, and promotions, please visit yamadapump.com or contact our Sales Staff toll-free at 800 990-7867.

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***Engineered to Perform.
Designed for Long Life.***

Rugged, Bolted Construction

All pumps feature bolted construction, which eliminates leak paths and simplifies assembly with actual torque values. This style is superior to clamp band retainer designs that bend or warp, thus causing misalignment and general assembly issues, possibly leading to more unnecessary repairs.

Outside-Accessible Air Valve

Inspection or maintenance of every Yamada air valve may be performed without removing the pump from service.

Maintenance Indicator

Reset button indicates when maintenance is due.

Unified Air Valve Concept

Common-size air valve assemblies reduce parts confusion.

Pilot Valve

Unique to the Yamada design is an individual modular pilot valve that actuates the air valve. It is depressed slightly by the inner center disk creating a pressure drop at one end of the air valve, allowing shifting to occur. It is maintenance free with no cumbersome snap rings or lubricated dynamic o-rings to replace or repair.

Optimal Stroke Length

Extensive research has led to the development of an optimal stroke length that maximizes diaphragm life and performance while minimizing downtime and maintenance costs.





Yamada® Patented Air Valve Technology

Yamada air valve technology is the heart of the air-powered double diaphragm pump and determines reliability. Yamada holds several patents on its field proven valve and enjoys a superior reputation throughout the industry.

Unified Air Valve Concept

Yamada offers two common-size air valve assemblies (shown at right) fitting seven series of pumps, further reducing reassembly confusion and parts inventory. Other air-powered double diaphragm pump manufacturers offer multiple air valve designs and revisions in an effort to address ongoing pump reliability problems. Multiple designs and revisions typically create maintenance rebuild issues, parts confusion, and obsolete inventory. *Whether your pumps are functioning continuously or intermittently - at high or low pressure - using dirty or clean air - Yamada offers **one field proven design.***

Truly Non-Lubricated Air Valve

The patented Yamada air valve on all NDP series pumps never requires lubrication or pre-packing. The advanced design eliminates the need for external lubrication, which can lead to pumpage contamination and maintenance headaches.

Yamada is proud to be the originator and still industry leader of non-lubricated air valve technology for air-powered double diaphragm pumps.

Some air-powered double diaphragm pump manufacturers claim to offer a non-lubricated air valve. Dependent upon the competitor's design, the air valve will probably require lubrication for continuous operation or lubricator installation, if moisture is present within the air system. These valves are pre-packed with grease and are not truly non-lubricated.

Component Replaceable

All Yamada air valves are designed with maintenance in mind and can be replaced quickly and efficiently without taking the pump out of service, reducing downtime.

Many competitor air valves can't be repaired and instead require complete replacement of the valve assembly and housing, further increasing the cost of ownership.

Simply remove four bolts and valve cap from the Yamada pump and slide the assembled air valve into the housing unit.

For additional information on Yamada products and services, visit yamadapump.com

↓ air valve fits pump models
NDP-20, NDP-25, NDP-32



Common-size air valve assemblies reduce parts confusion.

← air valve fits pump models NDP-40, NDP-50, NDP-80, and SolidPRO®

Non-Stalling

A patented non-centering, spring-assisted shifter is incorporated into every NDP Series pump, ensuring a positive shift every time.

The 304 stainless steel C-springs provide exceptional durability and longevity and are tested to last over **300 million cycles!**

The spring assist also aides in long dead head applications for reliable startup.

Continued on next page >

Yamada Advantages

Non-Metallic Components

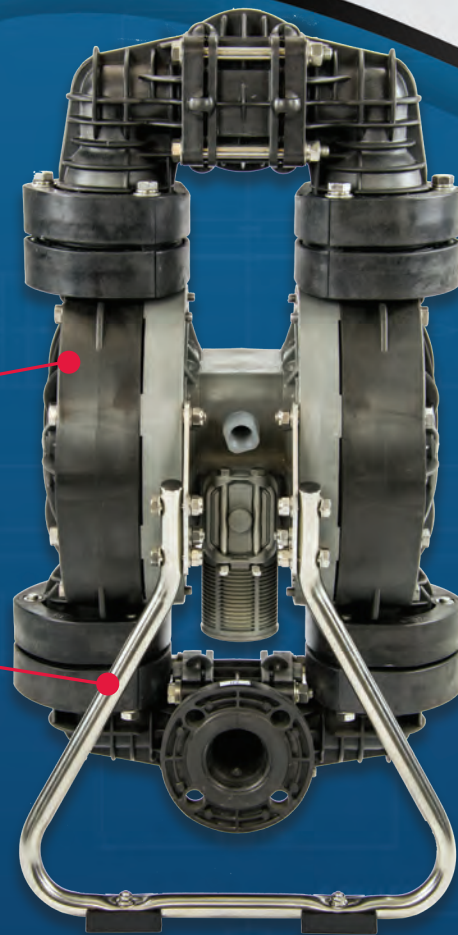
Features & Benefits – continued from preceding page.

Non-Metallic Components

Yamada engineers utilize state-of-the-art solid modeling and finite element analysis techniques, including rib and shell methods of injection molding to design non-metallic parts structure. This *patented* technique greatly increases the component strength and reduces material usage.

NDP-40, 50, & 80 Series Stainless Steel Pump Base for Non-Metallic Pumps

The tubular 304 Stainless Steel base was designed to simplify rebuilding procedures and to absorb pump shock during operation. This prevents the leaking common in other designs. The pump can sit upright on a workbench for most of the service, making repairs safer and easier. The radially bent tubular steel base is rated to 85,000 PSI giving it exceptional strength vs. welded angle designs.



Model NDP-50
Kynar® with
non-metallic
center body.

Advantages and Characteristics

- 1. Handle a wide variety of fluids with high solids content:** No close fitting or rotating parts so liquid with high solids content and/or particle size can be easily pumped.
- 2. Self Priming:** The Yamada pump design (incorporating internal check valves) provides high suction lift even at dry start-up and with heavier fluids.
- 3. Ability to run dry:** No close fitting or sliding parts are at risk—the pump can run dry without damage.
- 4. Variable flow rate and discharge pressure:** Yamada pumps will run at any setting within their operating range simply by adjusting the air inlet pressure and system conditions. One pump can fit a broad spectrum of applications.
- 5. Portable/Simple Installation:** Yamada pumps transport easily to the application site. Simply connect an air supply, attach fluid connections, and the pump is ready to perform. There are no complex controls to install or operate.
- 6. Dead Head:** The discharge line can be closed with no damage or wear. The pump will simply slow down and stop.
- 7. Shear sensitive:** The gentle nature and minimal parts contact with the liquid make Yamada pumps an excellent choice for shear sensitive fluids.
- 8. Safe Operation:** Powered by compressed air, Yamada pumps are intrinsically safe.
- 9. Submersible:** If external components are compatible, Yamada pumps can be submerged in liquids by simply running the exhaust line above the liquid level.
- 10. Pumping efficiency remains constant:** There are no rotors, gears, or pistons, which wear over time and lead to the gradual decline in performance/flow rate.

For additional information on Yamada products and services, visit yamadapump.com.



NDP-5 Specifications

3.4 GPM Max. Flow Rate | 1/4 in. port



Polypropylene
Dimensions: 6.06" W × 5.79" H
Net Weight: 2.9 lbs. (1.3 kg)
Shipping Weight: 4.4 lbs.

shown with optional center port ↗



Groundable Acetal
Dimensions:
 6.06" W × 5.79" H
Net Wt.: 3.1 lbs. (1.4 kg)
Shipping Wt.: 4.6 lbs.



Kynar® (PVDF)
Dimensions:
 6.06" W × 5.79" H
Net Wt.: 3.7 lbs. (1.7 kg)
Shipping Wt.: 5.2 lbs.



Split Manifold
Dimensions:
 6.6" W × 5.87" H
Net Wt.: 3.0 lbs.
 (1.36 kg)
Shipping Wt.: 4.5 lbs.



Stainless Steel
Dimensions:
 6.10" W × 5.87" H
Net Wt.: 6 lbs.
 (2.7 kg)
Ship Wt.: 7.5 lbs.

Aluminum
Dimensions:
 6.10" W × 5.87" H
Net Wt.: 3.5 lbs.
 (1.6 kg)
Ship Wt.: 5 lbs.

Port Dimensions

Intake & discharge	1/4" Female NPT
Air inlet (incl. ball valve):	1/4" Female NPT
Air exhaust (internal silencer):	3/8" Female NPT

Maximum Liquid Temperature

Fitted with PTFE diaphragm

Pump Material	Temperature
Groundable Acetal	180°F (82°C)
Polypropylene (PPG)	180°F (82°C)
Aluminum (ADC-12)	212°F (100°C)
Kynar® (PVDF)	212°F (100°C)
Stainless Steel (316)	212°F (100°C)

Air Supply Pressure (All Models)

20–100 PSI (1.4–7 kgf/cm²)

Discharge Volume Per Cycle

0.0078 gallons (29 cc)

Maximum Cycles Per Minute: 400

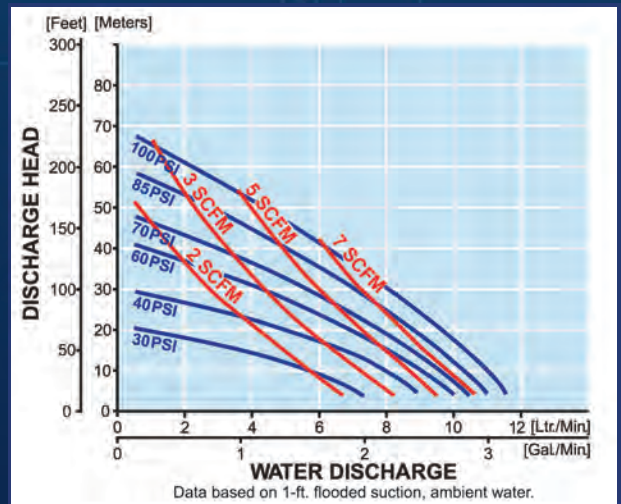
Maximum Dry Suction Lift: 5-feet

Air Motor: Ryton® air motor standard

Model Number Nomenclature

Aluminum (ADC-12)	NDP-5FAT
Groundable Acetal	NDP-5FDT
Kynar® (PVDF)	NDP-5FVT
Polypropylene (PPG)	NDP-5FPT
Stainless Steel (316)	NDP-5FST
Optional Split Manifold contact Yamada	NDP-5FPT-Z

Performance Curve

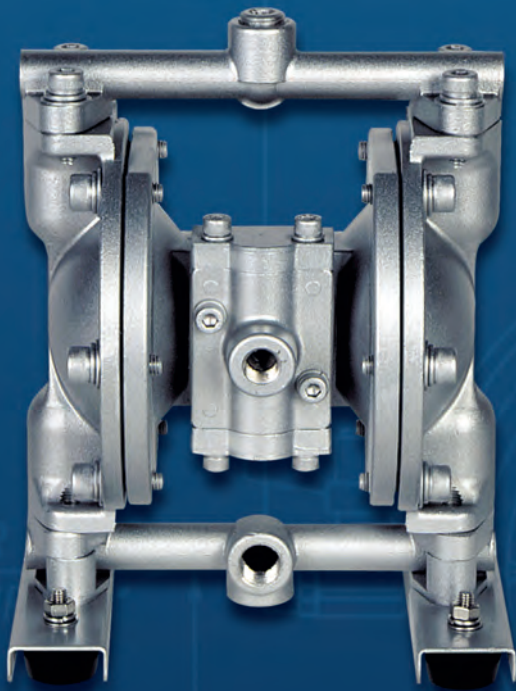


AutoCAD® drawings are available on CDROM
 or at yamadapump.com

DP-10/DP-15 Series

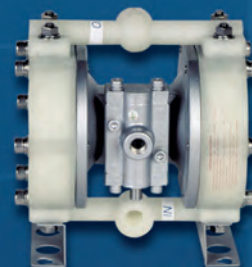
DP-10: 6.0 GPM Max. Flow Rate, 3/8 inch port

DP-15: 7.4 GPM Max. Flow Rate, 1/2 inch port



DP-10 Aluminum
Dimensions: 7.32" W x 9.49" H
Net Weight: 7.7 lbs. (3.5 kg)
Shipping Weight: 9.7 lbs.

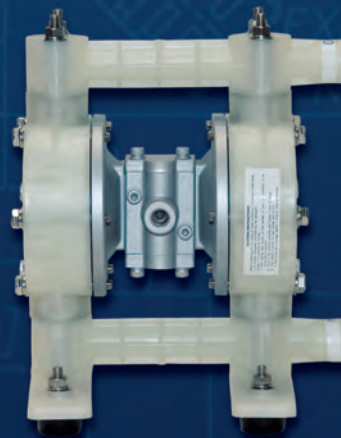
**DP-10
Polypropylene**
Dimensions:
7.68" W x 7.72" H
Net Weight: 6.6 lbs. (3.0 kg)
Shipping Weight: 8.6 lbs.



**DP-10
Stainless Steel**
Dimensions:
7.13" W x 9.37" H
Net Weight: 11.5 lbs. (5.2 kg)
Shipping Weight: 13.5 lbs.



**DP-15
Polypropylene with
Aluminum Air Motor**
Dimensions:
9.69" W x 11.69" H
Net Weight: 7.7 lbs. (3.5 kg)
Shipping Weight: 9.7 lbs.



AutoCAD® drawings are available on
CD ROM or at yamadapump.com



YAMADA

Yamada® DP-10/15 Series Specifications

DP-10 Port Dimensions

Intake & discharge connection:

Polypropylene (PPG)	3/8" Female NPT
Aluminum (ADC-12)	3/8" Female NPT
Stainless Steel (316)	3/8" Female NPT

DP-15 Port Dimensions

Intake & discharge connection:

Polypropylene (PPG)	1/2" Female NPT
Aluminum (ADC-12)	1/2" Female NPT

Air Inlet / Exhaust

Air inlet (incl. ball valve):	1/4" Female NPT
Air exhaust (incl. silencer):	3/8" Female NPT

Maximum Liquid Temperature*

Diaphragm Material	Temperature
Buna N	180°F (82°C)
Neoprene	180°F (82°C)
Santoprene® (TPO)	180°F (82°C)
PTFE	212°F (100°C)
Hytrel® (TPEE)	248°F (120°C)
Viton® fluoroelastomer	248°F (120°C)

*The maximum liquid temperature for metal and Kynar® fitted pumps is determined by the elastomer (diaphragm material). Polypropylene pumps have a maximum liquid temperature of 180°F (82°C) regardless of diaphragm material.

Air Supply Pressure (All Models)

20–100 PSI (1.4–7 kgf/cm²)

Discharge Volume Per Cycle

DP-10: 0.020 gallons (76 cc)

DP-15: 0.025 gallons (93 cc)

Maximum Cycles Per Minute

All diaphragms: 300

Maximum Size Solid

1/32" (1 mm)

Maximum Dry Suction Lift

All diaphragms: 10-feet

Air Motor

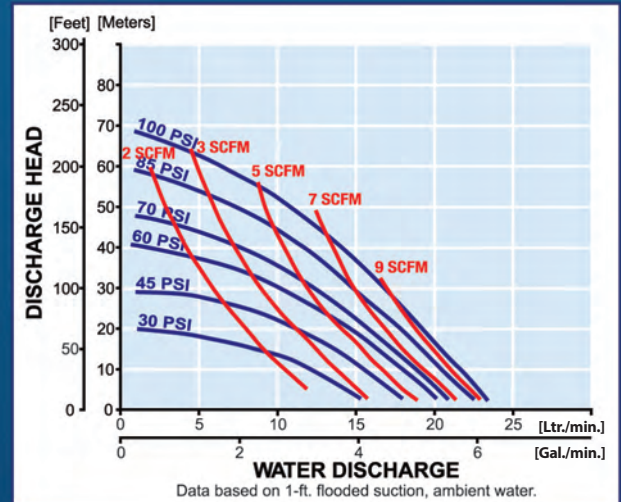
Aluminum air motor standard

Optional coating: PTFE grey coated (XP)

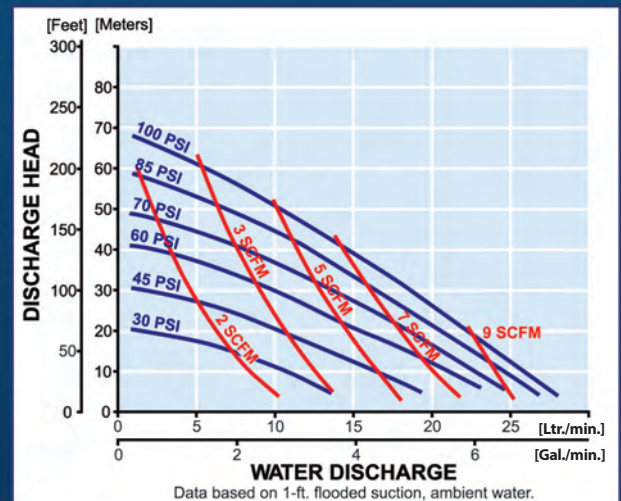
Optional Split Manifold – contact Yamada

Notes: Hytrel® fitted pumps include Buna N wetted o-rings.
Santoprene® fitted pumps include EPDM wetted o-rings.

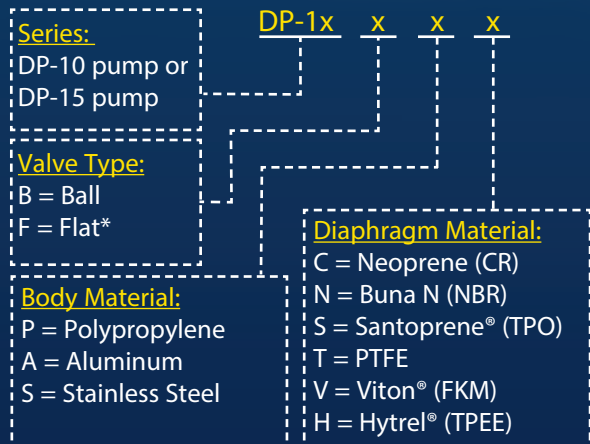
DP-10 Series Performance Curve (All)



DP-15 Series Performance Curve (Polypropylene)



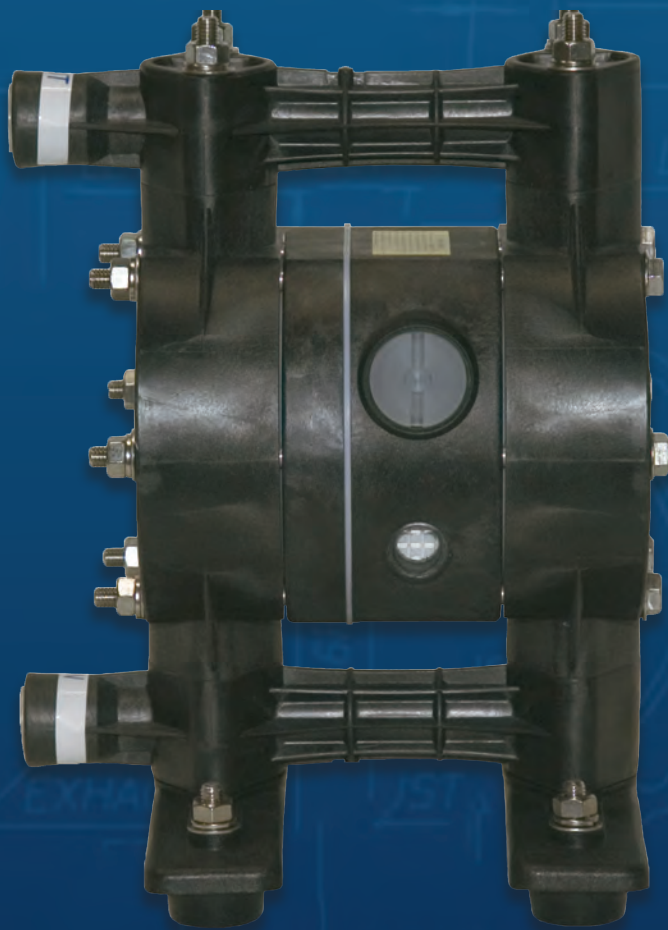
Model Number Nomenclature



* Flat valves available for DP-15 pumps only.
NOTE: Additional options listed on page 32.

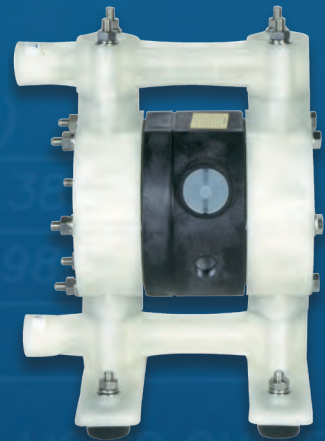
NDP-15 Series

13.5 GPM Maximum Flow Rate
1/2 inch Port Size

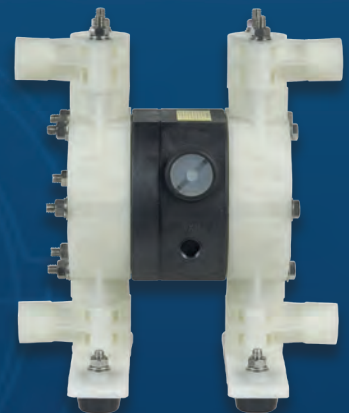


Kynar® (PVDF)
Dimensions: 8.66" W × 11.67" H
Net Weight: 9.46 lbs. (4.3 kg)
Shipping Weight: 11.46 lbs.

Polypropylene
Dimensions:
8.66" W × 11.67" H
Net Weight: 7.7 lbs. (3.5 kg)
Shipping Weight: 9.7 lbs.



Polypropylene Split Manifold
Model NDP-15BPT-Z
Dimensions:
9.98" W × 11.69" H
Net Weight: 7.7 lbs. (3.5 kg)
Shipping Weight: 9.7 lbs.



Aluminum
Dimensions:
8.66" W × 10.67" H
Net Weight: 9.04 lbs. (4.1 kg)
Shipping Weight: 11.04 lbs.



Stainless Steel
Dimensions:
8.31" W × 9.72" H
Net Weight: 13.9 lbs. (6.3 kg)
Shipping Weight: 15.9 lbs.

*AutoCAD® drawings are available on
CD-ROM or at yamadapump.com*



Yamada® NDP-15 Series Specifications

Port Dimensions

Intake & discharge connection:

Polypropylene (PPG) ■	1/2" Female NPT
Kynar® (PVDF) ◆	1/2" Female NPT
Aluminum (ADC-12) ▲	1/2" Female NPT
Stainless Steel (316) ▲	1/2" Female NPT
Air inlet (includes ball valve):	1/4" Female NPT
Air exhaust (internal silencer):	3/8" Female NPT

■ Polypropylene pumps may be fitted with ball or flat check valves. Ball-type check valves are recommended for flooded suction applications. Flat-type check valves are recommended for suction lift applications.

◆ Kynar® pumps are fitted with flat check valves only.

▲ Aluminum and Stainless Steel pumps are fitted with ball check valves only.

Maximum Liquid Temperature*

Diaphragm Material	Temperature
Buna N	180°F (82°C)
Neoprene	180°F (82°C)
Santoprene® (TPO)	180°F (82°C)
PTFE	212°F (100°C)
Hytrel® (TPEE)	248°F (120°C)
Viton® fluoroelastomer	248°F (120°C)

*The maximum liquid temperature for metal and Kynar® fitted pumps is determined by the elastomer (diaphragm material). Polypropylene pumps have a maximum liquid temperature of 180°F (82°C) regardless of diaphragm material.

Air Supply Pressure (All Models)

20–100 PSI (1.4–7 kgf/cm²)

Discharge Volume Per Cycle

0.0338 gallons (128 cc)

Maximum Cycles Per Minute

All diaphragms: 400

Maximum Size Solid: 1/32" (1 mm)

Maximum Dry Suction Lift

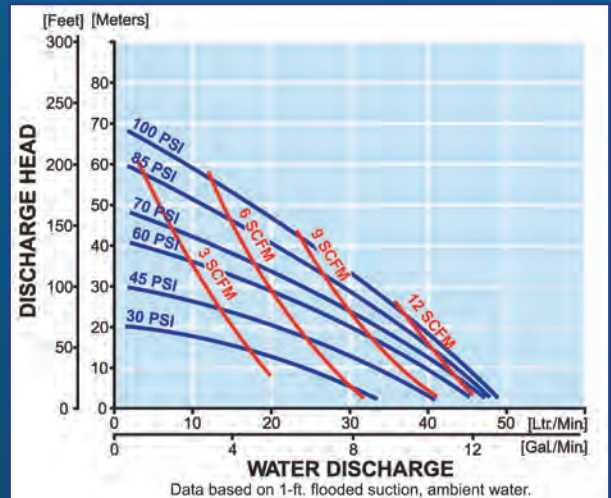
Flat-type check valve: 8-feet
Ball-type check valve: 5-feet

Pump Air Motor: Ryton® air motor standard

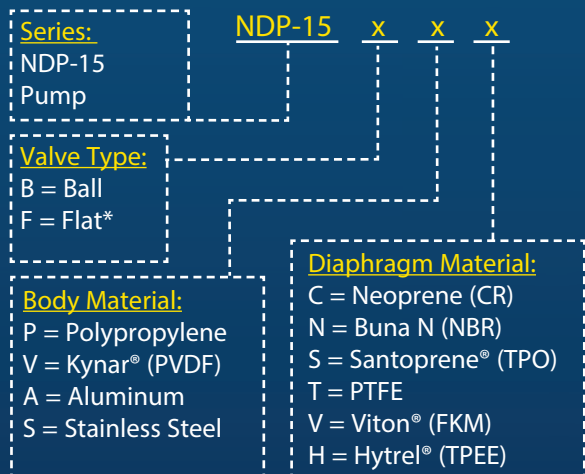
Notes: Hytrel® fitted pumps include Buna N wetted o-rings. Santoprene® fitted pumps include EPDM wetted o-rings.

All Diaphragm Materials

(both ball and flat check valves)



Model Number Nomenclature



* Flat valves are available for plastic pumps only.
NOTE: Additional options listed on page 32.

Split Manifold Pumps

By utilizing one pump, Yamada offers a design in which the inlet and outlet ports can be configured to multiple combinations; ideal for pumping or combining two similar specific gravity fluids.

Construction: Polypropylene, Aluminum, or Stainless Steel

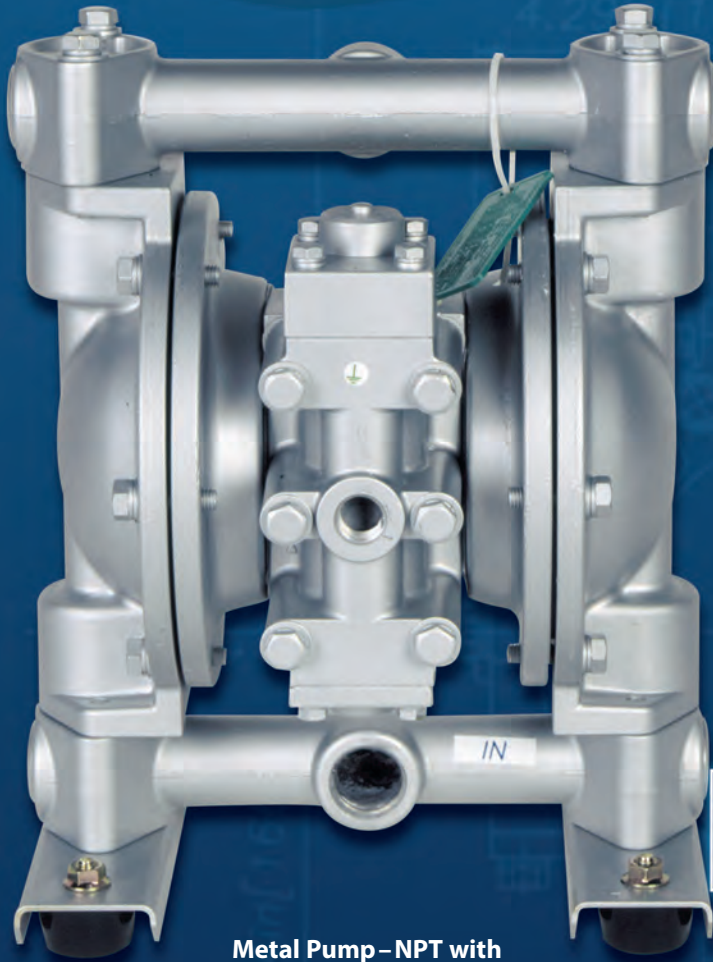
Diaphragm: Choice of six elastomers

Modes of operation: Dual suction with dual or single discharge; single suction with dual discharge

For details, contact Yamada.

NDP-20 Series

31.7 GPM Maximum Flow Rate
3/4 inch Port Size



Metal Pump – NPT with Aluminum Air Motor

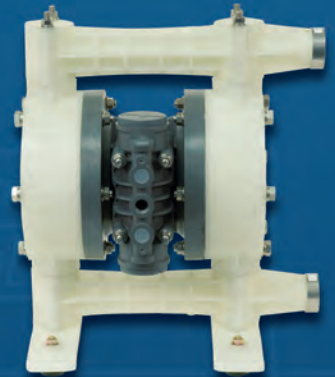
Aluminum

Dimensions: 9.80" W × 12.5" H
Net Weight: 19.8 lbs. (9.0 kg)
Shipping Weight: 23.8 lbs.

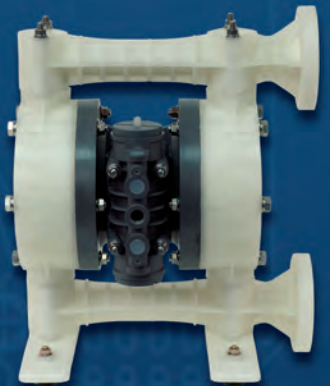
Stainless Steel

Dimensions: 9.65" W × 12.42" H
Net Weight: 30.9 lbs. (14.0 kg)
Shipping Weight: 34.9 lbs.

Polypropylene – NPT
Dimensions:
12.48" W × 14.48" H
Net Weight: 15.4 lbs. (7.0 kg)
Shipping Weight: 19.4 lbs.



Polypropylene ANSI Flange
Dimensions:
12.44" W × 14.72" H
Net Wt: 15.4 lbs. (7.0 kg)
Shipping Wt: 19.4 lbs.



Optional: 1" NPT intake and discharge side ports; *aluminum pumps only.*



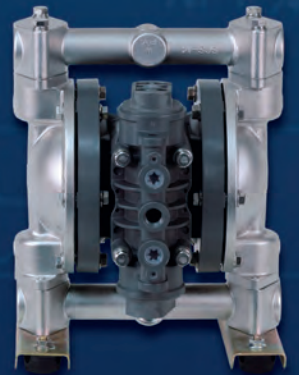
Metal Pump – NPT with Polypropylene Air Motor

Aluminum

Dimensions: 9.8" W × 12.48" H
Net Weight: 16.5 lbs. (7.5 kg)
Shipping Weight: 20.5 lbs.

Stainless Steel

Dimensions: 9.72" W × 12.4" H
Net Weight: 27.6 lbs. (12.5 kg)
Shipping Weight: 31.6 lbs.



AutoCAD® drawings are available on CDROM or at yamadapump.com

Yamada® NDP-20 Series Specifications

Port Dimensions

Intake & discharge connection:

Polypropylene (PPG)	3/4" Female NPT
Aluminum (ADC-12)	3/4" Female NPT
Stainless Steel (316)	3/4" Female NPT
Air inlet (incl. ball valve):	3/8" Female NPT
Air exhaust (incl. silencer):	3/4" Female NPT

ANSI Flange also available — consult Yamada.

Maximum Liquid Temperature*

Diaphragm Material	Temperature
Buna N	180°F (82°C)
Neoprene	180°F (82°C)
Santoprene® (TPO)	180°F (82°C)
EPDM	212°F (100°C)
PTFE	212°F (100°C)
Hytrel® (TPEE)	248°F (120°C)
Viton® fluoroelastomer	248°F (120°C)

* The maximum liquid temperature for metal and Kynar® fitted pumps is determined by the elastomer (diaphragm material). Polypropylene pumps have a maximum liquid temperature of 180°F (82°C) regardless of diaphragm material.

Air Supply Pressure (All Models)

20–100 PSI (1.4–7 kgf/cm²)

Discharge Volume Per Cycle

Rubber diaphragm: 0.163 gallons (615 cc)

PTFE diaphragm: 0.143 gallons (539 cc)

Maximum Cycles Per Minute

Rubber diaphragm: 195

PTFE diaphragm: 195

Maximum Size Solid

1/16" (2.0 mm)

Maximum Dry Suction Lift

Rubber fitted pump capability: 18-feet

Air Motor

Aluminum air motor standard on metal pumps.

Polypropylene air motor standard on plastic pumps.

Air Motor Options

Aluminum air motor on plastic pumps.

Polypropylene air motor on metal pumps.

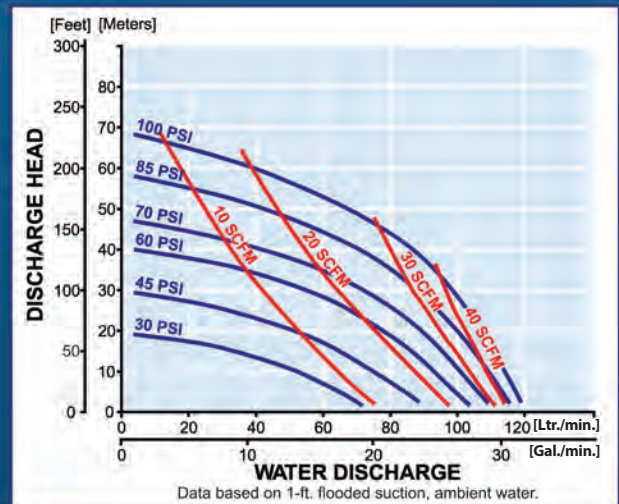
PTFE grey coating (XP) on aluminum air motors.

Optional Split Manifold – contact Yamada

Notes: Hytrel® fitted pumps include Buna N wetted o-rings.

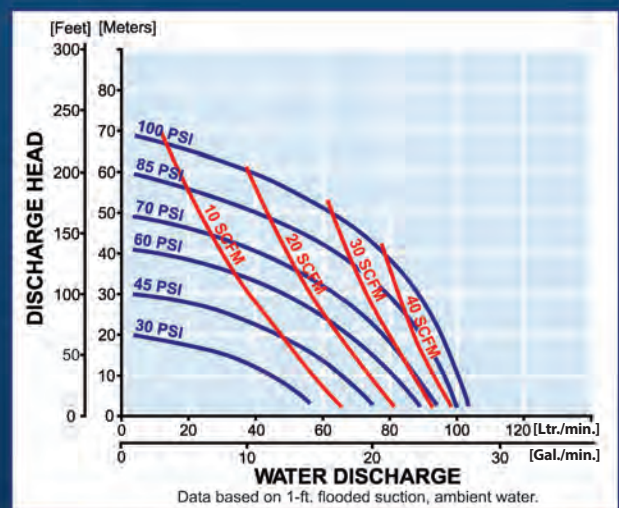
Santoprene® fitted pumps include EPDM wetted o-rings.

Rubber Diaphragm Performance Curve



To calculate performance for Santoprene® and Hytrel® fitted pumps, use Rubber Diaphragm Curve.

PTFE Diaphragm Performance Curve



Model Number Nomenclature

NDP-20 B x x - xx - x

Series:
NDP-20 Pump

Valve Type:
B = Ball

Body Material:
P = Polypropylene
A = Aluminum
S = Stainless Steel

Port Option
NPT or FLG

Plastic Pump Air Motor:
PP = Polypropylene

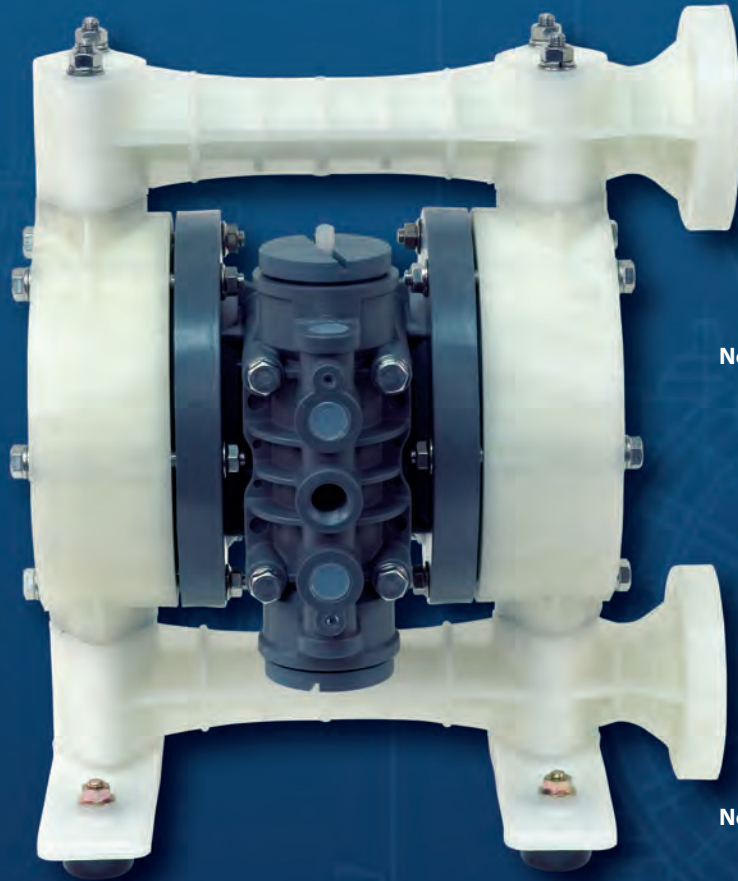
Diaphragm Material:
C = Neoprene (CR)
N = Buna N (NBR)
E = Nordel™ (EPDM)
S = Santoprene® (TPO)
T = PTFE
V = Viton® (FKM)
H = Hytrel® (TPEE)

Additional options listed on page 32.



NDP-25 Series

46.2 GPM Maximum Flow Rate
1 inch Port Size



Polypropylene – ANSI Flange
Dimensions: 14.43" W × 17.83" H
Net Weight: 20.9 lbs. (9.5 kg)
Shipping Weight: 25.9 lbs.

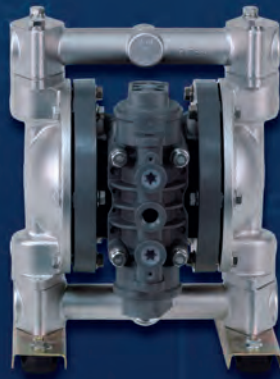
Metal Pump – NPT with Polypropylene Air Motor

Aluminum

Dimensions: 11.30" W × 14.93" H
Net Weight: 24.3 lbs. (11.0 kg)
Shipping Weight: 29.3 lbs.

Stainless Steel

Dimensions: 11.13" W × 14.77" H
Net Weight: 39.7 lbs. (18.0 kg)
Shipping Weight: 44.7 lbs.



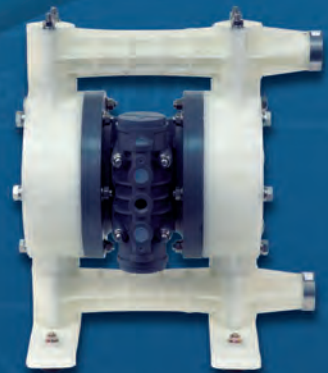
Polypropylene – NPT

Dimensions:

14.47" W × 16.90" H

Net Weight: 20.9 lbs. (9.5 kg)

Shipping Weight: 25.9 lbs.



Kynar® (PVDF) – NPT

Dimensions:

14.41" W × 16.91" H

Net Weight: 26.4 lbs. (12.0 kg)

Shipping Weight: 31.4 lbs.



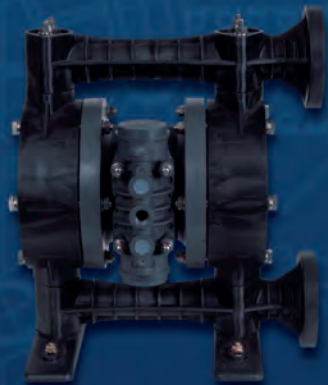
Kynar® (PVDF) – ANSI Flange

Dimensions:

14.43" W × 17.30" H

Net Weight: 26.4 lbs. (12.0 kg)

Shipping Weight: 31.4 lbs.



Metal Pump – NPT with Aluminum Air Motor

Aluminum

Dimensions: 11.30" W × 14.93" H

Net Weight: 28.7 lbs. (13 kg)

Shipping Weight: 33.7 lbs.

Stainless Steel

Dimensions: 11.06" W × 14.77" H

Net Weight: 44.1 lbs. (20 kg)

Shipping Weight: 49.1 lbs.

Cast Iron

Dimensions: 11.27" W × 14.74" H

Net Weight: 44.1 lbs. (20 kg)

Shipping Weight: 49.1 lbs.



AutoCAD® drawings are available on CDROM or at yamadapump.com



YAMADA®

NDP-25 SERIES

Yamada® NDP-25 Series Specifications

Port Dimensions

Intake & discharge connection:

Polypropylene (PPG)	1" Female NPT
Kynar® (PVDF)	1" Female NPT
Aluminum (ADC-12)	1" Female NPT
Stainless Steel (316)	1" Female NPT
Cast Iron	1" Female NPT
Air inlet (incl. ball valve):	3/8" Female NPT
Air exhaust (incl. silencer):	3/4" Female NPT

ANSI Flange also available — consult Yamada.

Maximum Liquid Temperature*

Diaphragm Material	Temperature
Buna N	180°F (82°C)
Neoprene	180°F (82°C)
Santoprene® (TPO)	180°F (82°C)
EPDM	212°F (100°C)
PTFE	212°F (100°C)
Hytrel® (TPEE)	248°F (120°C)
Viton® fluoroelastomer	248°F (120°C)

*The maximum liquid temperature for metal and Kynar® fitted pumps is determined by the elastomer (diaphragm material). Polypropylene pumps have a maximum liquid temperature of 180°F (82°C) regardless of diaphragm material.

Air Supply Pressure (All Models)

20–100 PSI (1.4–7 kgf/cm²)

Discharge Volume Per Cycle

Rubber diaphragm: 0.22 gallons (833 cc)

PTFE diaphragm: 0.21 gallons (787 cc)

Maximum Cycles Per Minute

Rubber diaphragm: 210

PTFE diaphragm: 210

Maximum Size Solid 3/16" (4.8 mm)

Maximum Dry Suction Lift

Rubber fitted pump capability: 18-feet

Air Motor

Aluminum air motor standard on metal pumps.
Polypropylene air motor standard on plastic pumps.

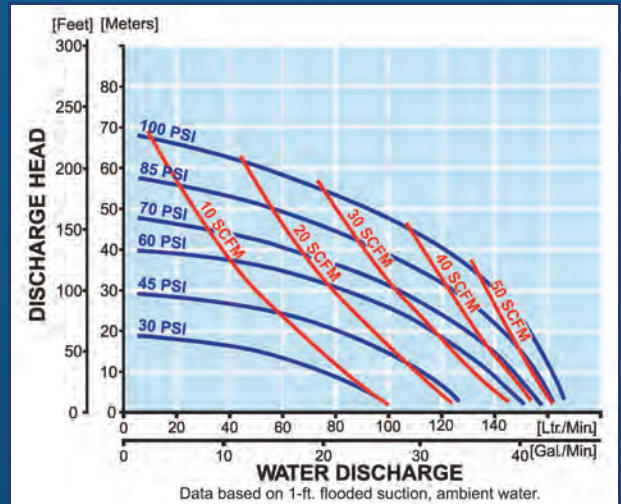
Air Motor Options

Aluminum air motor on plastic pumps.
Polypropylene air motor on metal pumps.
PTFE grey coating (XP) on aluminum air motors.

Optional Split Manifold – contact Yamada

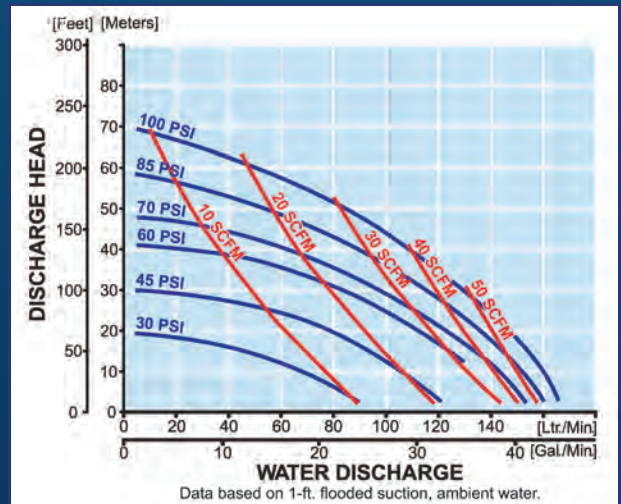
Notes: Hytrel® fitted pumps include Buna N wetted o-rings.
Santoprene® fitted pumps include EPDM wetted o-rings.
Kynar® (PVDF) pumps fitted with Hytrel® include PTFE wetted o-rings.

Rubber Diaphragm Performance Curve



To calculate performance for Santoprene® and Hytrel® fitted pumps, use Rubber Diaphragm Curve.

PTFE Diaphragm Performance Curve



Model Number Nomenclature

NDP-25 B x x - xx - x

- Series:** NDP-25 Pump
- Valve Type:** B = Ball
- Body Material:** P = Polypropylene, A = Aluminum, S = Stainless Steel, F = Cast Iron, V = Kynar®
- Port Option:** NPT or FLG
- Plastic Pump Air Motor:** PP = Polypropylene
- Diaphragm Material:** C = Neoprene (CR), N = Buna N (NBR), E = Nordel™ (EPDM), S = Santoprene® (TPO), T = PTFE, V = Viton® (FKM), H = Hytrel® (TPEE)

Note: For NPT fitted SS, add "NPT" at end of model number nomenclature. Additional options listed on page 32.

NDP-40 Series

107 GPM Maximum Flow Rate
1-1/2 inch Port Size



Kynar® (PVDF)

Dimensions: 15.67" W × 29.49" H

Net Weight: 70.5 lbs. (32 kg)

Shipping Weight: 80.5 lbs.

*AutoCAD® drawings are available on
CDROM or at yamadapump.com*

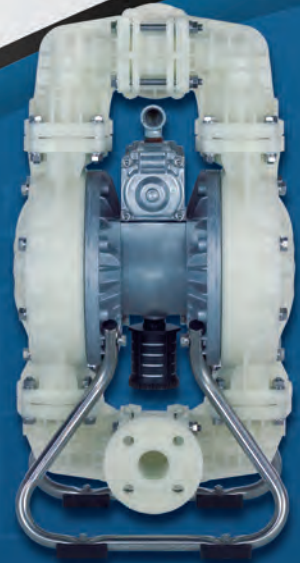
Polypropylene

Dimensions:

15.83" W × 29.60" H

Net Weight: 59.5 lbs. (27 kg)

Shipping Weight: 69.5 lbs.



Aluminum

Dimensions:

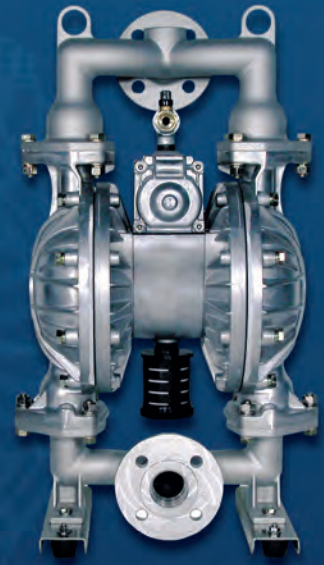
16.20" W × 27.96" H

Net Weight: 63.9 lbs. (29 kg)

Shipping Weight: 73.9 lbs.

Tapped w/1-1/2" NPT

ANSI flange



Stainless Steel

Dimensions:

16.20" W × 27.66" H

Net Weight: 88.2 lbs. (40 kg)

Shipping Weight: 98.2 lbs.

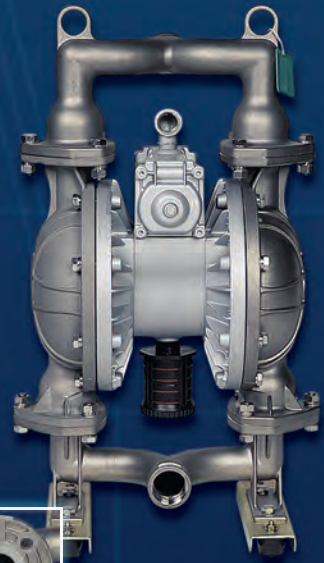
Cast Iron - NPT

Dimensions:

16.20" W × 27.72" H

Net Weight: 103.6 lbs. (47 kg)

Shipping Weight: 113.6 lbs.



*ANSI #150 Flange
available on Stainless
Steel pumps.*



Yamada® NDP-40 Series Specifications

Port Dimensions

Intake & discharge connection:

Polypropylene (PPG)	1-1/2" ANSI B16.5 #150
Kynar® (PVDF)	1-1/2" ANSI B16.5 #150
Aluminum (ADC-12)	1-1/2" ANSI B16.5 #150 (with tapped 1-1/2" Female NPT)
Stainless Steel (316)	1-1/2" ANSI B16.5 #150 or 1-1/2" Female NPT
Cast Iron	1-1/2" Female NPT
Air inlet (incl. ball valve):	1/2" Female NPT
Air exhaust (incl. silencer):	1" Female NPT

Maximum Liquid Temperature*

Diaphragm Material	Temperature
Buna N	180°F (82°C)
Neoprene	180°F (82°C)
Santoprene® (TPO)	180°F (82°C)
EPDM	212°F (100°C)
PTFE	212°F (100°C)
Hytrel® (TPEE)	248°F (120°C)
Viton® fluoroelastomer	248°F (120°C)

*The maximum liquid temperature for metal and Kynar® fitted pumps is determined by the elastomer (diaphragm material). Polypropylene pumps have a maximum liquid temperature of 180°F (82°C) regardless of diaphragm material.

Air Supply Pressure (All Models)

20–100 PSI (1.4–7 kgf/cm²)

Discharge Volume Per Cycle

Rubber diaphragm: 0.73 gallons (2.74 liters)

PTFE diaphragm: 0.37 gallons (1.40 liters)

Maximum Cycles Per Minute

Rubber diaphragm: 148

PTFE diaphragm: 270

Maximum Size Solid

9/32" (7 mm)

Maximum Dry Suction Lift

Rubber fitted pump capability: 18-feet

Air Motor

Aluminum air motor standard

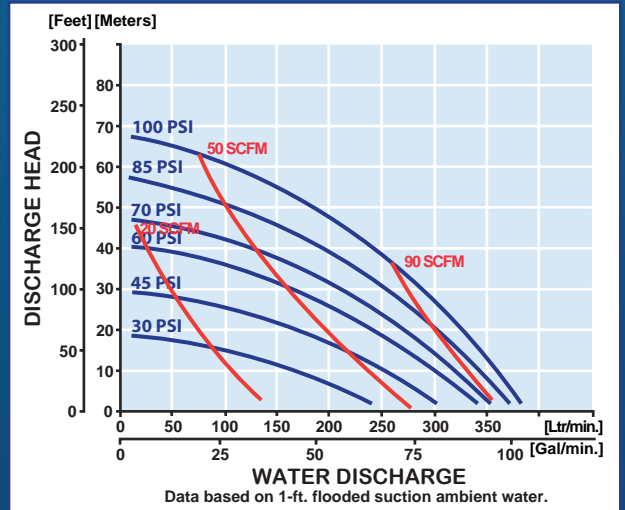
Optional coating: PTFE grey coated (XP)

Notes: Hytrel® fitted pumps include Buna N wetted o-rings.

Santoprene® fitted pumps include EPDM wetted o-rings.

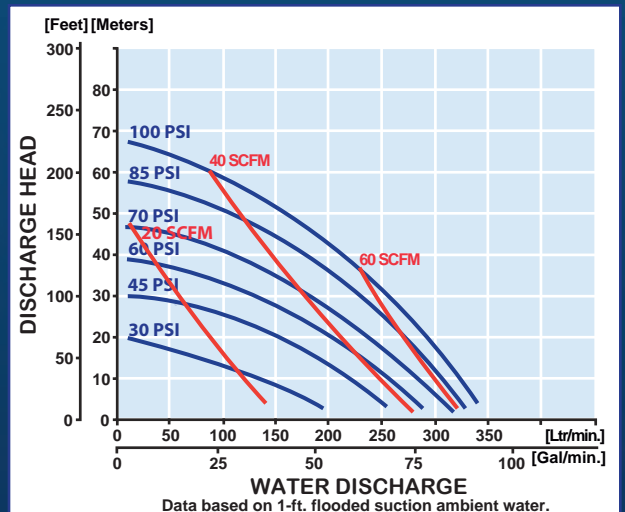
Kynar® (PVDF) pumps include PTFE check balls and o-rings.

Rubber Diaphragm Performance Curve

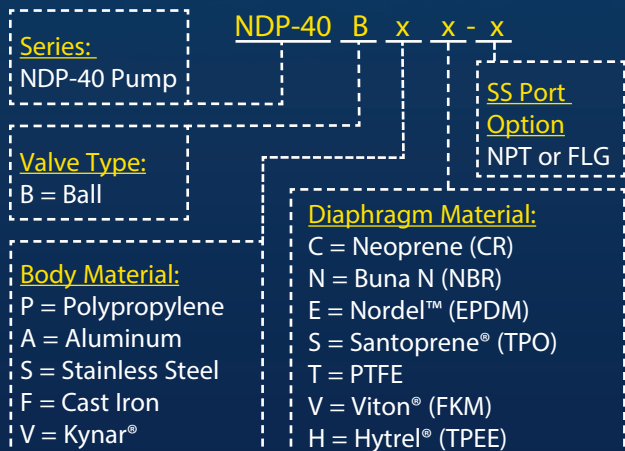


To calculate performance for Santoprene® and Hytrel® fitted pumps, use Rubber Diaphragm Curve.

PTFE Diaphragm Performance Curve



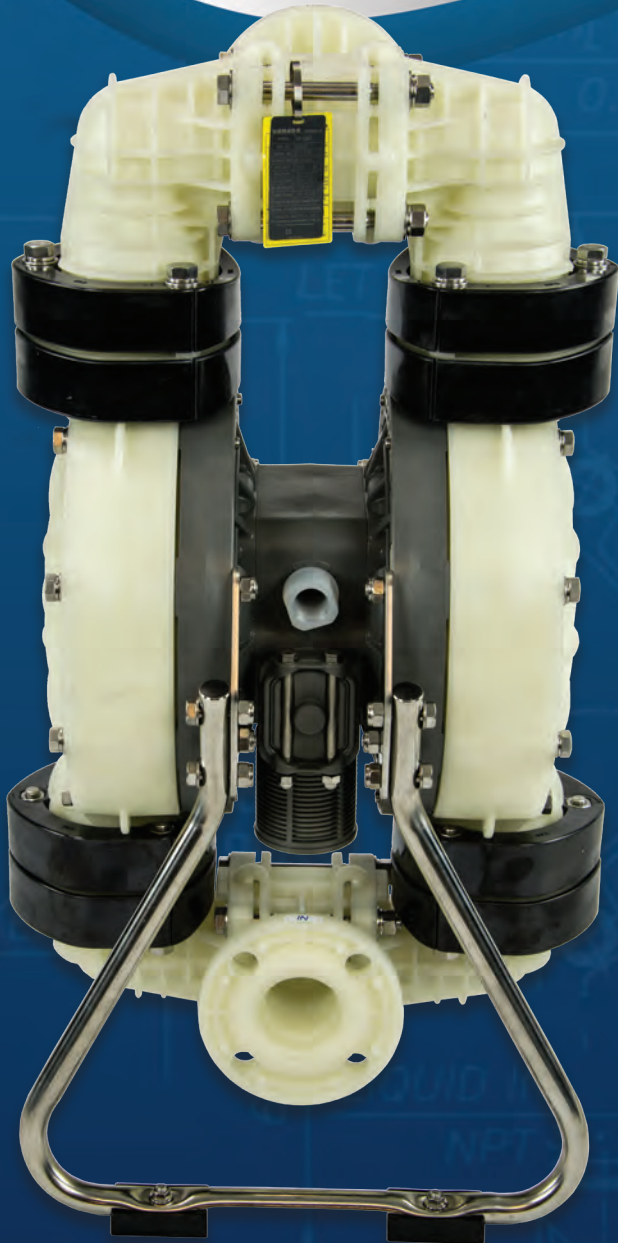
Model Number Nomenclature



Note: For NPT fitted SS, add "NPT" at end of model number nomenclature. Additional options listed on page 32.

NDP-50 Series

164 GPM Maximum Flow Rate
2 inch Port Size



Polypropylene-PP
Dimensions:
18.30" W × 32.30" H
Net Weight: 81.6 lbs. (37 kg)
Shipping Weight: 96.6 lbs.

❖ *Protectors provide additional support and cushion to the manifolds and out chambers.*

Kynar®-PP (PVDF)
Dimensions:
18.18" W × 32.24" H
Net Weight: 94.8 lbs. (43 kg)
Shipping Weight: 109.8 lbs.



Aluminum
Dimensions:
17.78" W × 30.70" H
Net Weight: 81.6 lbs. (37 kg)
Shipping Weight: 96.6 lbs.
*Tapped with 2" NPT
ANSI flange*



Cast Iron or Stainless Steel (NPT)
Dimensions:
17.72" W × 30.56" H
Net Weight:
Cast Iron – 143 lbs. (65 kg)
Stainless Steel – 132 lbs. (60 kg)
Shipping Weight:
Cast Iron – 158 lbs.
Stainless Steel – 147 lbs.



Optional ANSI #150
Flange for Stainless
Steel models.



AutoCAD® drawings are available on CDROM or at yamadapump.com

Yamada® NDP-50 Series Specifications

Port Dimensions

Intake & discharge connection:

Polypropylene (PPG)	2" ANSI B16.5 #150
Kynar® (PVDF)	2" ANSI B16.5 #150
Aluminum (ADC-12)	2" ANSI B16.5 #150 (with tapped 2" Female NPT)
Stainless Steel (316)	2" ANSI B16.5 #150 or 2" Female NPT
Cast Iron	2" Female NPT
Air inlet (incl. ball valve):	3/4" Female NPT
Air exhaust (incl. silencer):	1" Female NPT

Maximum Liquid Temperature*

Diaphragm Material	Temperature
Buna N	180°F (82°C)
Neoprene	180°F (82°C)
Santoprene® (TPO)	180°F (82°C)
EPDM	212°F (100°C)
PTFE	212°F (100°C)
Hytrel® (TPEE)	248°F (120°C)
Viton® fluoroelastomer	248°F (120°C)

* The maximum liquid temperature for metal and Kynar® fitted pumps is determined by the elastomer (diaphragm material). Polypropylene pumps have a maximum liquid temperature of 180°F (82°C) regardless of diaphragm material.

Air Supply Pressure (All Models)

20–100 PSI (1.4–7 kgf/cm²)

Discharge Volume Per Cycle

Rubber diaphragm: 1.12 gallons (4.25 liters)

PTFE diaphragm: 0.69 gallons (2.61 liters)

Maximum Cycles Per Minute

Rubber diaphragm: 146

PTFE diaphragm: 220

Maximum Size Solid 5/16" (8 mm)

Maximum Dry Suction Lift

Rubber fitted pump capability: 19-feet

Air Motor

Aluminum air motor standard on metal pumps.

Polypropylene air motor standard on pastic pumps.

Air Motor Options

Aluminum air motor on plastic pumps.

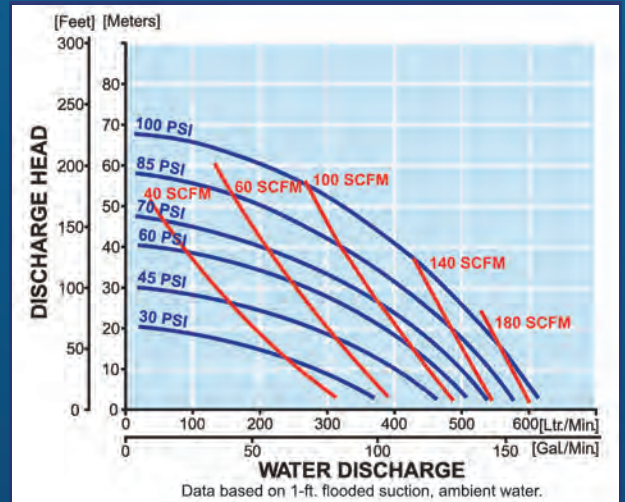
PTFE grey coating (XP) on aluminum air motors.

Notes: Hytrel® fitted pumps include Buna N wetted o-rings.

Santoprene® fitted pumps include EPDM wetted o-rings.

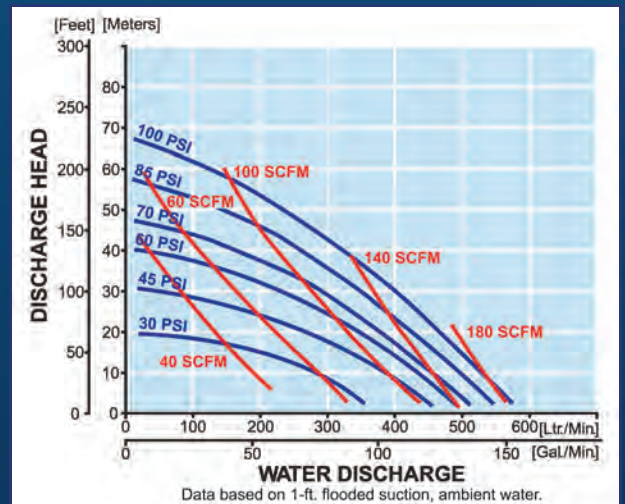
Kynar® (PVDF) pumps fitted with Santoprene® or Hytrel® include PTFE check balls and o-rings.

Rubber Diaphragm Performance Curve

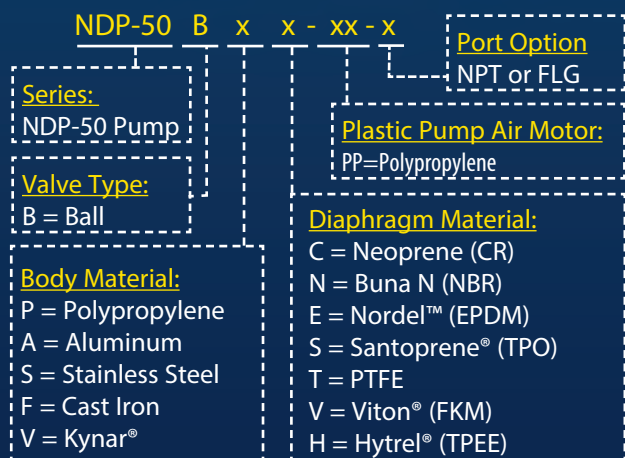


To calculate performance for Santoprene® and Hytrel® fitted pumps, use Rubber Diaphragm Curve.

PTFE Diaphragm Performance Curve



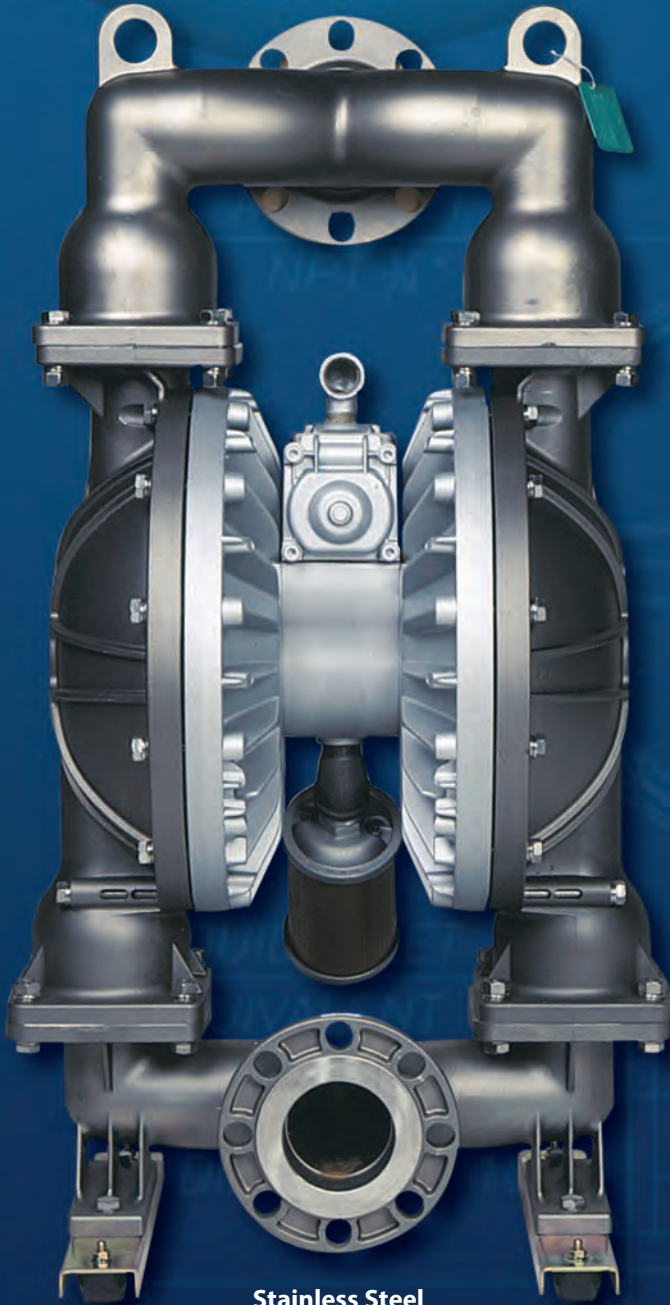
Model Number Nomenclature



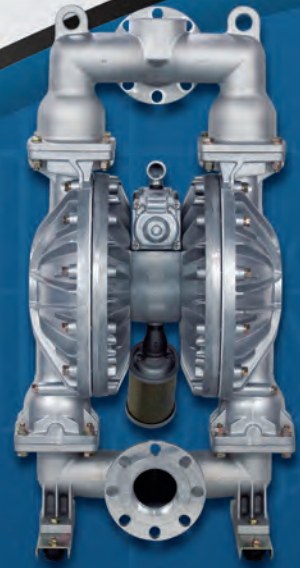
Note: For NPT fitted SS, add "NPT" at end of model number nomenclature. Additional options listed on page 32.

NDP-80 Series

215 GPM Maximum Flow Rate
3 inch Port Size



Stainless Steel
Dimensions: 20.51" W x 38.73" H
Net Weight: 225 lbs. (102 kg)
Shipping Weight: 245 lbs.

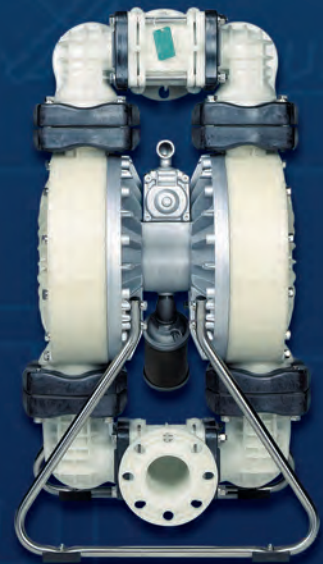


Aluminum
Dimensions:
20.57" W x 39.30" H
Net Weight: 143 lbs. (65 kg)
Shipping Weight: 163 lbs.
*Tapped with 3" NPT
ANSI flange*



Cast Iron - NPT
Dimensions:
20.51" W x 38.73" H
Net Weight: 247 lbs. (112 kg)
Shipping Weight: 267 lbs.

Stainless Steel - NPT
Dimensions:
20.51" W x 38.73" H
Net Weight: 225 lbs. (102 kg)
Shipping Weight: 245 lbs.



Polypropylene
Dimensions:
22.83" W x 41.10" H
Net Weight: 141 lbs. (64 kg)
Shipping Weight: 161 lbs.

AutoCAD® drawings are available on CD ROM or at yamadapump.com

Yamada® NDP-80 Series Specifications

Port Dimensions

Intake & discharge connection:

Polypropylene (PPG)	3" ANSI B16.5 #150
Aluminum (ADC-12)	3" ANSI B16.5 #150 (with tapped 3" Female NPT)
Stainless Steel (316)	3" ANSI B16.5 #150 or 3" Female NPT
Cast Iron	3" Female NPT
Air inlet (incl. ball valve):	3/4" Female NPT
Air exhaust (incl. silencer):	1" Female NPT

Maximum Liquid Temperature*

Diaphragm Material	Temperature
Buna N	180°F (82°C)
Neoprene	180°F (82°C)
Santoprene® (TPO)	180°F (82°C)
EPDM	212°F (100°C)
PTFE	212°F (100°C)
Hytrel® (TPEE)	248°F (120°C)
Viton® fluoroelastomer	248°F (120°C)

*The maximum liquid temperature for metal pumps is determined by the elastomer (diaphragm material). Polypropylene pumps have a maximum liquid temperature of 180°F (82°C) regardless of diaphragm material.

Air Supply Pressure (All Models)

20–100 PSI (1.4–7 kgf/cm²)

Discharge Volume Per Cycle

Rubber diaphragm: 2.26 gallons (8.57 liters)
PTFE diaphragm: 1.0 gallons (3.8 liters)

Maximum Cycles Per Minute

Rubber diaphragm: 95
PTFE diaphragm: 160

Maximum Size Solid

13/32" (10 mm)

Maximum Dry Suction Lift

Rubber fitted pump capability: 19-feet

Air Motor

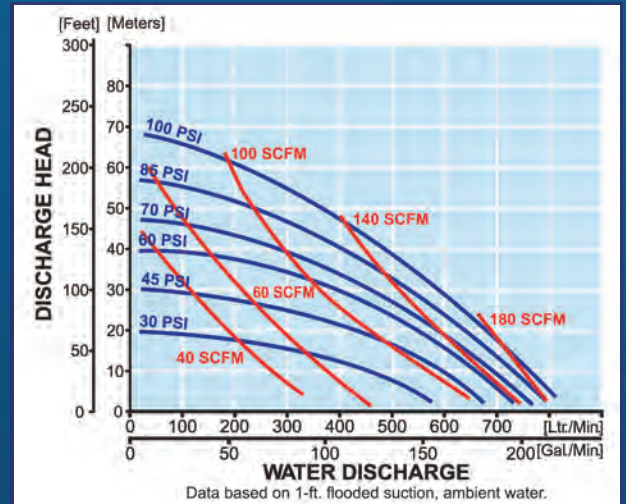
Aluminum air motor standard
Optional coating: PTFE grey coated (XP)

Notes: Hytrel® fitted pumps include Buna N wetted o-rings.
Santoprene® fitted pumps include EPDM wetted o-rings.

AutoCAD® drawings are available on CDROM or at yamadapump.com.

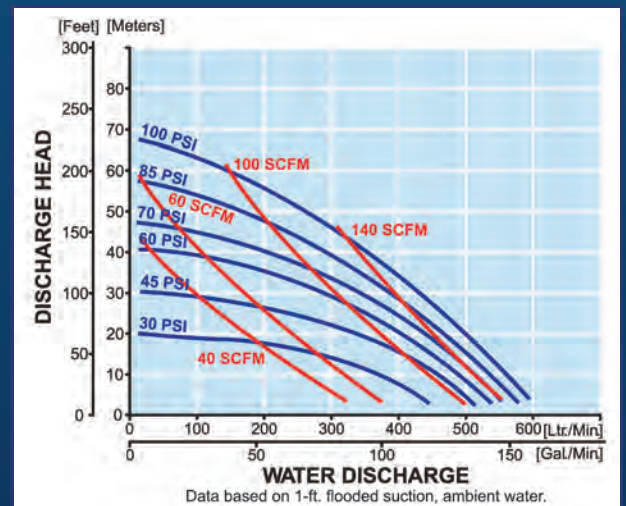
Additional options listed on page 32.

Rubber Diaphragm Performance Curve

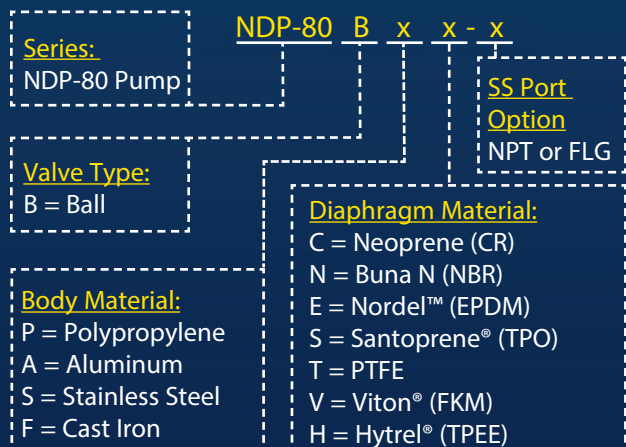


To calculate performance for Santoprene® and Hytrel® fitted pumps, use Rubber Diaphragm Curve.

PTFE Diaphragm Performance Curve



Model Number Nomenclature



Yamada® NDP-32 Series

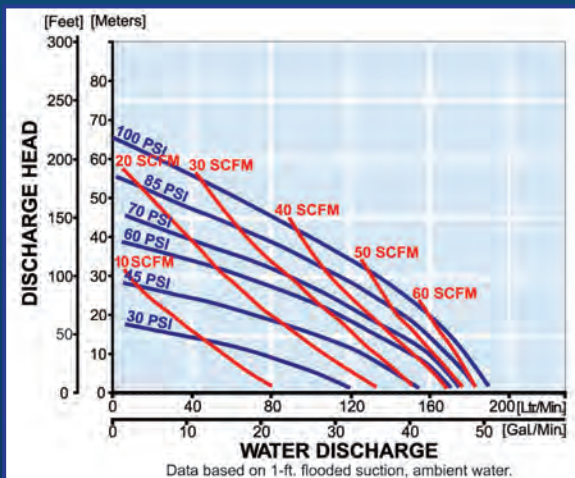
50.2 GPM Maximum Flow Rate 1-1/2" intake port / 1-1/4" discharge port

Yamada addresses re-piping issues with the Yamada® NDP-32 series pump. Designed to facilitate pump replacement for existing non-Yamada pump installations, the NDP-32 utilizes a 1-1/2" NPT intake port with a 1-1/4" NPT discharge port to ensure compatibility with competitor designs.

Port Dimensions

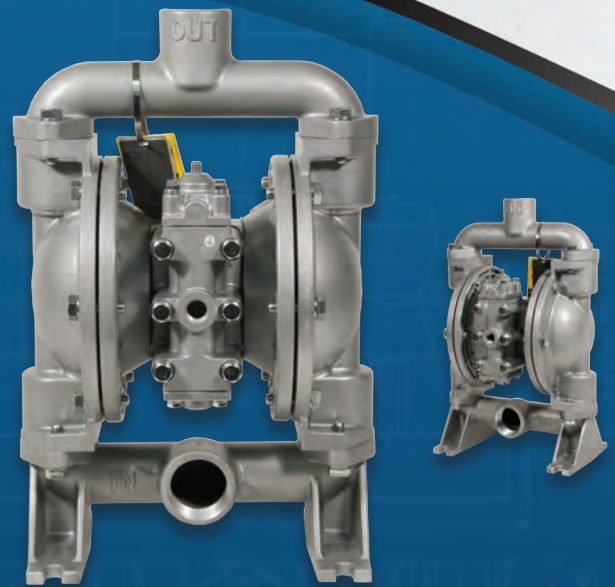
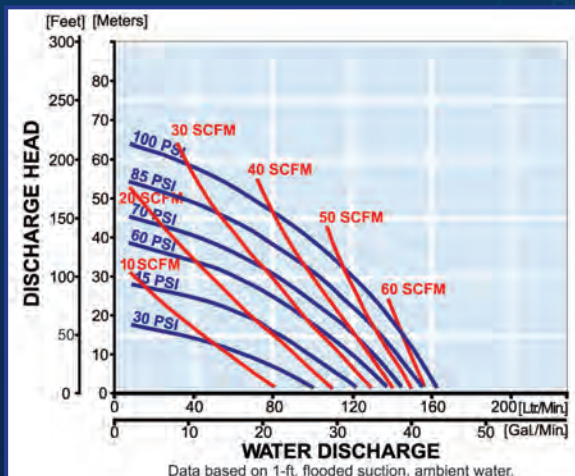
Intake connection:	1-1/2" Female NPT
Discharge connection:	1-1/4" Female NPT
Air inlet (incl. ball valve):	3/8" Female NPT
Air exhaust (incl. silencer):	3/4" Female NPT

Rubber Diaphragm Performance Curve



To calculate performance for Santoprene® and Hytrel® fitted pumps, use Rubber Diaphragm Curve.

PTFE Diaphragm Performance Curve



Maximum Liquid Temperature*

Diaphragm Material	Temperature
Buna N Neoprene Santoprene® (TPO)	180°F (82°C)
EPDM PTFE	212°F (100°C)
Hytrel® (TPEE) Viton® fluoroelastomer	248°F (120°C)

*The maximum liquid temperature for metal pumps is determined by the elastomer (diaphragm material).

Air Supply Pressure Range 20–100 PSI (1.4 – 7 kgf/cm²)

Discharge Volume Per Cycle

Rubber diaphragm: 0.18 gallons (681 cc)
PTFE diaphragm: 0.15 gallons (567 cc)

Maximum Cycles Per Minute:

Rubber diaphragm: 279
PTFE diaphragm: 291

Maximum Size Solid: 1/8" (3 mm)

Maximum Dry Suction Lift: 18 feet

Air Motor: Aluminum air motor standard

Model Number Nomenclature

NDP-32 B A X

Series:

NDP-32 Pump

Valve Type:

B = Ball

Body Material:

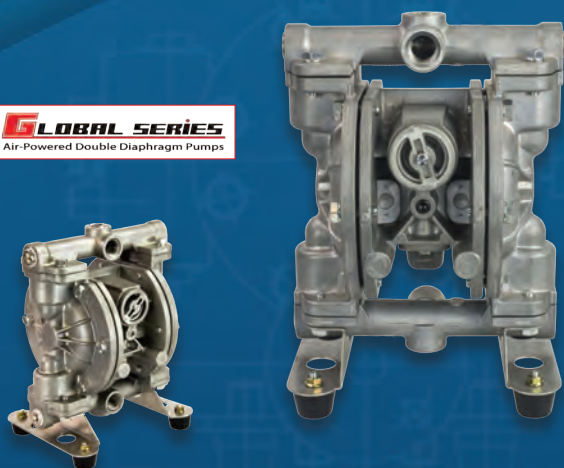
A = Aluminum

Diaphragm Material:

C = Neoprene (CR)
N = Buna N (NBR)
E = Nordel™ (EPDM)
S = Santoprene® (TPO)
T = PTFE
V = Viton® (FKM)
H = Hytrel® (TPEE)

Notes: Hytrel® fitted pumps include Buna N wetted o-rings.
Santoprene® fitted pumps include EPDM wetted o-rings
Additional options listed on page 32.

G15 Global Series



15.8 GPM Maximum Flow Rate 1/2" port size

The G15 series metal pumps are perfect for spraying and dispensing applications, particularly when on and off cycling reliability is critical. Utilizing our new Step Stool (S-Spool), the G 15 uses up to 30% less air than the competition. Maintenance friendly with fewer parts.

Port Dimensions

Intake & discharge connection:	1/2" Female NPT
Air inlet (incl. ball valve):	1/4" Female NPT
Air exhaust (incl. silencer):	3/8" Female NPT

Maximum Liquid Temperature*

Diaphragm Material	Temperature
Buna N Santoprene® (TPO)	180°F (82°C)
PTFE	212°F (100°C)

*The maximum liquid temperature for metal pumps is determined by the elastomer (diaphragm material).

Air Supply Pressure Range 20–100 PSI (1.4 – 7 kgf/cm²)

Discharge Volume Per Cycle

Rubber diaphragm: 0.045 gallons (170 cc)
PTFE diaphragm: 0.042 gallons (158 cc)

Maximum Cycles Per Minute

Rubber diaphragm: 350
PTFE diaphragm: 364

Maximum Size Solid: 1/32" (1 mm)

Maximum Dry Suction Lift: 18 feet

Air Motor: Aluminum air motor standard

Model Number Nomenclature

G15 B A x

Series:

G15 Pump

Valve Type:

B = Ball

Body Material:

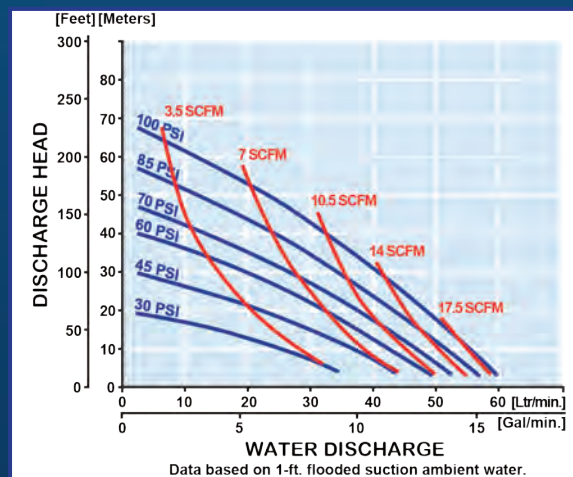
A = Aluminum

Diaphragm Material:

N = Buna N (NBR)
S = Santoprene® (TPO)
T = PTFE

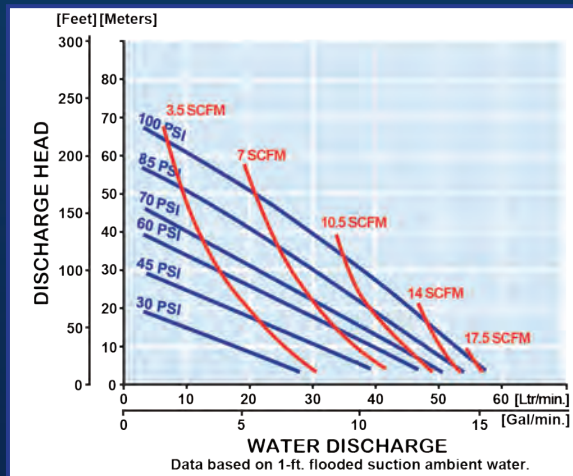
Notes: Santoprene® fitted pumps include EPDM wetted o-rings.

Rubber Diaphragm Performance Curve



To calculate performance for Santoprene® and Hytrel® fitted pumps, use Rubber Diaphragm Curve.

PTFE Diaphragm Performance Curve



Yamada® SolidPRO®

Yamada SOLID PRO
Designed to Pump Fluids Containing Solids

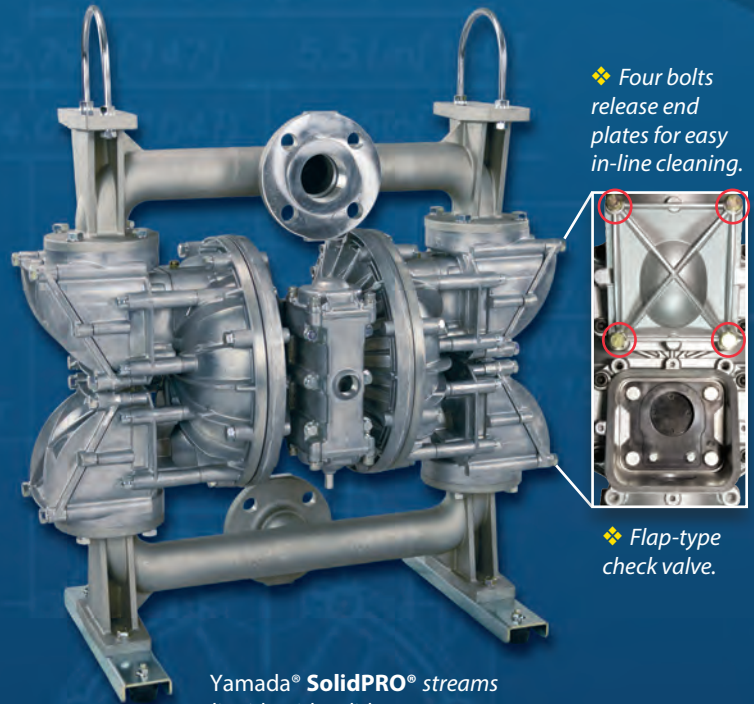
Designed to Pump Fluids Containing Solids

The Yamada® SolidPRO® pump is designed to pump fluids containing solids up to 2 inches (50mm) in diameter. Built on the foundation of the NDP Series line of pumps, the SolidPRO incorporates the Yamada patented stall-free/lube-free air valve and rugged, easy-to-service bolted construction.

Designed for durability in the field, the SolidPRO pump's innovative flap-type check valve technology provides streaming passage of solids while minimizing clogging and downtime. Four external bolts release valve covers on either side permitting service and maintenance without removing the pump from service.

Design Specifications

Nominal Diameter:	2 inch (50 mm)
Flow Rate:	158.5 GPM
Fluid Connections:	NPT 2" or ANSI flange 150# 2"
Air Connection:	NPT 3/4" / NPT 1"
Normal Air Supply Pressure:	30 -100 PSI (0.2 -0.7 MPa)
Maximum Discharge Pressure:	100 PSI (0.7 MPa)
Discharge Volume per Cycle:	1.056 GPM (4.0 L/min)
Slurry Limitation:	maximum 2" solids
Weight:	115 lbs (52 kg)



❖ Four bolts release end plates for easy in-line cleaning.

❖ Flap-type check valve.

Yamada® SolidPRO® streams liquids with solids content up to 2 inches diameter

Xtreme Duty Pro XDP® Series

For Xtremely Demanding Process Applications

The Yamada® Xtreme Duty Pro XDP® pump is designed for use in process type applications including filter press, high pressure, extended deadheading, long runs of discharge pipe, and where air consumption is critical.

Available in 1-1/2", 2" and 3" port sizes, these pumps are built on the liquid platform of a standard NDP Series pump, but with a **mechanically-actuated air motor**.

Air power is conserved by actuating the air valve using a mechanical linkage instead of relying on air pressure. This reduces the air volume used, providing better pump efficiency.

Yamada® Xtreme Duty Pro XDP® pumps are capable of running on air pressure equivalents as high as 125 PSI or as low as 5 PSI and provide the same liquid side performance as the NDP series pumps.



Yamada® XDP-40® aluminum (left) and polypropylene

Yamada® F-Series

F-Series Pumps
Ultra-High Purity



❖ Yamada has the largest installed base of high-purity pumps in the world!

Clean Room Ultra-High Purity

Extensively field proven, Yamada® F-Series clean room manufactured pumps are specifically designed for the safe and efficient transfer of **ultra high-purity process chemistries**. They provide maximum corrosion resistance, ultra high-purity levels and low particle generation.

Pumps include 100% machined virgin PTFE diaphragms, liquid chambers and manifolds.

Fluid Connections

DP-5F	1/4" NPT or 3/8" Flaretek®
DP-10F	3/8" NPT, 1/2" Flaretek® or 1/2" ANSI flange
DP-20F	3/4" Flaretek®, ANSI flange or NPT
DP-25F	1" Flaretek® or ANSI flange
DP-38F	1" Flaretek® or ANSI flange

Flow rate 1 to 35 GPM

Air control internal shuttle valve or external timer-based control

Air pressure range 20 to 100 PSI

Temperatures up to 212°F (100°C)

Other High Purity pump options available. For additional information, please contact us toll free at (800) 990-7867 or visit www.yamadapump.com.

Features & Benefits Available

- Non-Lubricated Air Valve
- Wetted Parts are 100% virgin PTFE
- Extended Performance Diaphragms
- Clean Room Manufactured
- Most Complete Line Available
- End-User Maintenance
- Explosion-Proof Operation
- Internal Silencer
- Self Priming
- Field-proven Design
- No Internal Metal Components
- Available in Ball or Flat Check Valves

**QUALITY.
PERFORMANCE.
RELIABILITY.**

Yamada® Drum Pumps

Yamada APDD Pumps have distinct design advantages, making them versatile and cost effective drum pumps.

Models are available in Polypropylene, PVDF (Kynar®), Aluminum, and Stainless Steel, which includes a 2" bung adapter and 33" suction tube.

Drum pumps are available in 3/8", 1/2", and 3/4" port sizes (3/8" metal only) with flow rates up to 28 GPM.

Note: NDP-15 and NDP-20 plastic pumps utilize side ports with a 90° elbow atop the drum. Due to their weight, aluminum and stainless steel pumps utilize center ports to help maintain pump balance.

Refer to DP-10, G15, NDP-15 & NDP-20 technical information for additional performance data. When ordering, use applicable NDP nomenclature, adding a "D" at the end of the model number. Other sizes and materials are available, consult Yamada.

Port Dimensions

Intake & discharge connections:

Aluminum (ADC-12): 3/8", 1/2" or 3/4" Female NPT
Includes Aluminum Male NPT Bung Adapter
Suction Pipe

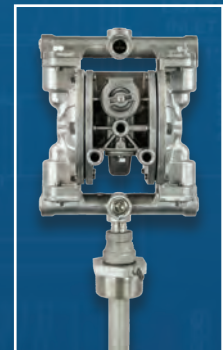
Stainless Steel: 3/8" or 3/4" Female NPT
Includes Stainless Steel Male NPT Bung Adapter
Suction Pipe

Polypropylene: 3/4" Female NPT
Includes PVC Suction Pipe
Bung Adapter (PPG also available)
Elbow

Kynar® (PVDF): 1/2" Female NPT
Includes PVDF Suction Pipe
Bung Adapter
Elbow

Drum Inlet Connection: 2" Bung

Metal Drum Pump with Center Port Port Sizes 3/8", 1/2" or 3/4"



**G15 Global Series
Drum Pump
Port Size 1/2"**

FDA-Compliant Drum Pumps

Please consult the factory for details.



**Plastic Drum Pump
with Side Port
Port Sizes 1/2" or 3/4"**
Kynar pumps 1/2" only



FDA Compliant Pumps



FDA Compliant 316 Stainless Steel
2", 2-1/2", and 4" sanitary ports



FDA Compliant 316 Stainless Steel
1" and 1-1/2" sanitary port



FDA Compliant 316 Stainless Steel
3/4" sanitary port

Yamada® FDA compliant pumps are specifically designed for Food, Pharmaceutical & Cosmetic industries where 3A or USDA standards are not required.

Pumps include 316 Stainless Steel wetted components with passivated satin finish, PTFE-coated air motor, sanitary clamp fittings, and FDA compliant elastomers.

Key features of Yamada® FDA series pumps:

- self-priming, lube-free air valve
- intrinsically safe and portable
- no mechanical seals
- ability to run dry without pump damage
- excellent for shear sensitive liquids

Available in eight sizes from 3/4" to 4" ports with flow ranges from 1–215 gallons per minute.

Sanitary Fitting / Flow Rate / Maximum Size Solid

NDP-5-FDA	3/4"	3.4 GPM	N/A
DP-10-FDA	3/4"	6.0 GPM	<1/32"
NDP-15-FDA	1"	13.5 GPM	<1/32"
NDP-20-FDA	1"	31.7 GPM	<1/16"
NDP-25-FDA	1-1/2"	46.2 GPM	<3/16"
NDP-40-FDA	2"	107 GPM	<9/32"
NDP-50-FDA	2-1/2"	164 GPM	<5/16"
NDP-80-FDA	4"	215 GPM	<13/32"

FDA Compliant Elastomers

Diaphragm Material	Temperature
EPDM*	212°F (100°C)
PTFE	212°F (100°C)
Hytre® (TPEE)	248°F (120°C)

* EPDM available only for NDP-20 and larger pumps.

Air Supply Pressure (all sizes)

20–100 PSI (1.4–7 kgf/cm²)

Additional Option

20RA interior mechanical polish available for some models, consult Yamada.

Common Applications:

- Bulk Transfer
- Food Packaging
- Batching
- Filter Press, Utility
- Product Transfer
- Cosmetics
- Personal Hygiene
- Tanker/Railcar Unloading

❖ Yamada FDA Pumps are capable of handling thick liquids.

Specialty Pumps

Atex Compliant Pumps

Yamada® ATEX Compliant Air Powered Pumps

Select Yamada® DP and Yamada® NDP Series pumps are compliant with ATEX guidelines for safe pump operation in potentially dangerous or explosive areas.

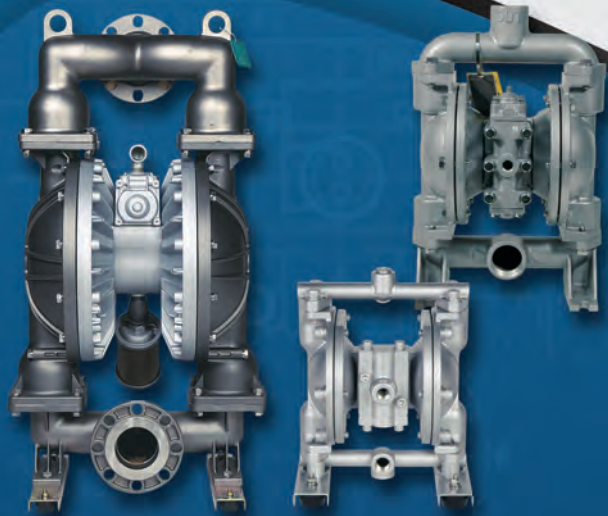
Available in 3/8 to 3" port sizes with flow rates from 1–215 GPM.

Please consult Yamada for current updates on compliance to ATEX standards.



II 2 GD IIB/IIC 95°C
European Standard EN 13463-1:2001
European Standard EN 809/ October 1998
Directive 98/37/EC

◆ Yamada® air-powered pumps are intrinsically safe



CSA Certified Pumps

Yamada® CSA Certified Aluminum Pumps

Yamada offers a series of three CSA certified pumps, each built on the consistently designed foundation of the field proven DP and NDP Series pumps. Pumps are constructed with aluminum wetted components and durable Buna N elastomers certified by CSA International.

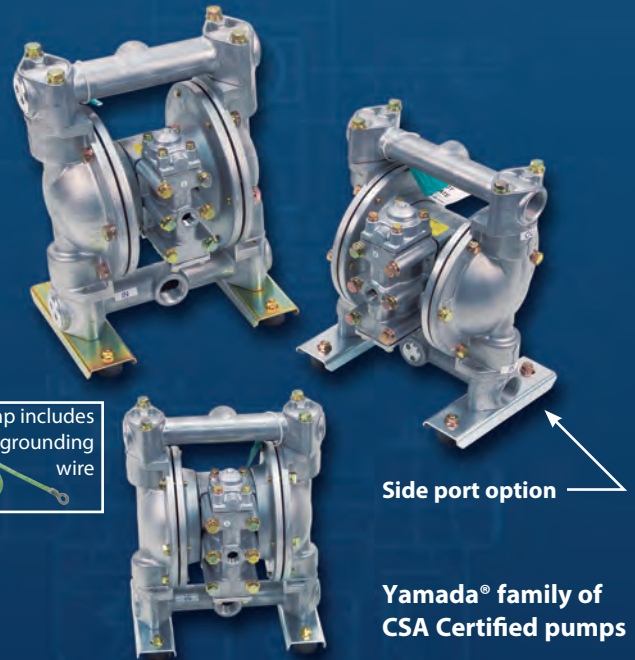
Available in 3/4" and 1" port sizes with flow rates from 1–46 GPM. **Note:** CSA Certification Class 3305-10 & 3305-90 limits natural gas temperature range from 32°F–125°F.



CSA Gas Accessory Devices-
Natural Gas-Operated
Diaphragm Pumps



Side port option



Yamada® family of
CSA Certified pumps

U.L. Listed Pumps

Yamada® U.L. Listed Code 79 Pumps

Yamada U.L. Listed pumps are manufactured for the petrochemical, chemical, and petroleum industries to meet safety requirements established by Underwriters Laboratory Code 79. Pumps include Aluminum wetted components with durable Hytrel® and PTFE elastomers, approved by U.L. to transfer volatile fluids.

Pumps are available in 3/4" and 1" port sizes, with flow ranges from 1–46 gallons per minute.

Pumps must be operated and installed according to U.L. Code 79.



Listed
Air-Powered Double Diaphragm Pump
For Petroleum Products 19GL



Yamada® U.L. Listed pumps

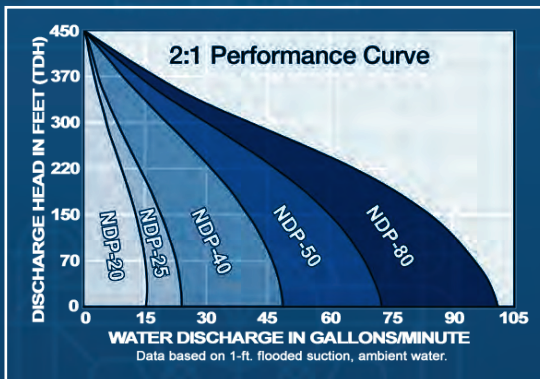


Yamada® High Pressure

Model NDP-50 HP



Model NDP-25 HP



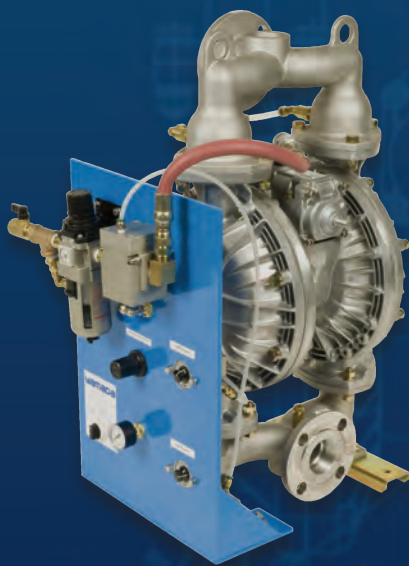
2:1 Ratio Pumps

Yamada® **High Pressure Pumps** are designed for applications when a maximum 100 PSI operating pressure is insufficient to overcome system requirements.

The flow rate is roughly half of the equivalent size pump output, though a maximum discharge pressure of approximately 200 PSI can be achieved.

The 2:1 discharge ratio is achieved by applying air pressure to the surface area of both diaphragms, doubling the discharge output.

Port sizes:	3/4", 1", 1-1/2", 2" or 3"
Capacity:	1 to 100 GPM
Max. Size Solid	<13/32" (10mm)
Construction:	Stainless Steel, Cast Iron, or Aluminum wetted materials
Diaphragm:	Choice of six elastomers. <i>PTFE not included.</i>
Controls:	No elaborate bypass, relief valves, or complicated controls required. Excellent pressure retention.



Model
NDP-80BA-BH-3



Model
NDP-50BA-BH-2

Yamada® Powder

Powder Pumps

Yamada powder pumps are designed to move bulk powders more effectively throughout your process vs. other unsafe and labor intensive means. These heavy duty pumps will consistently transfer fine low-bulk density dry powders in batch or bulk transfer applications.

Port sizes:	1, 1-1/2", 2", or 3"
Construction:	Aluminum, Cast Iron, or Stainless Steel
Availability:	Three series of pumps are offered, dependent upon requirements.

For additional information, please contact us toll free at (800) 990-7867 or visit www.yamadapump.com.

Filter/Regulators

Yamada® FR/FRL Filter/Regulators

These easy-to-install filter/regulators provide the precise pressure control necessary to optimize pump performance and efficiency. They feature built-in moisture and particulate removal to 5 microns, analog pressure gauge, “locking” pressure control, standard manual drain, with optional automatic drain available. The automatic drain option is recommended for long term performance or when there is a lot of airline moisture.

Broad Operating Parameters – Handles operating pressures from 7 psig to 125 psig and temperatures from 40 to 140°F.

Precise Pressure Adjustment – Locking adjustment knob provides precise and secure pressure control and allows for infinitely variable flow rates.

Quick Release Bayonet Polypropylene Bowl – Provides access to filter element with quick 1/4-turn of the bowl.

High Visibility Bowl Guard – Unique liquid level indicator allows monitoring up to 30 ft. away and 20 angles.

Embedded Pressure Gauge

Optional – Auto drain available for all filter/regulators.

* Lubrication oil bottle included

Pump Controllers

Yamada® YSC-3EX and YSC-3B Controllers

YSC Series Pump Controllers are designed to control the operating speed of solenoid-operated air-powered double diaphragm pumps.

The YSC-3EX is a state-of-the-art controller used to maintain a predetermined cycle rate. The YSC-3B is used for batch metering applications.

Controller functions: Speed control (cycle rate or flow rate), batch control

Speed range: 1–400 cycles per minute

Operating voltage: 110 VAC (220V–240V available)

Output voltage: 12 VDC

❖ 2% (+/-) accuracy achievable.



FR-1 fits NDP-5, 15, & 20
FR-3 fits NDP-25
FR-4 fits NDP-40
FR-5 fits NDP-50 & 80



FRL-2* fits DP-10
FRL-4* fits XDP-40
FRL-5* fits XDP-50 & 80

Pump sold separately



YSC-3EX (left) / YSC-3B (right)
 Pump Controllers

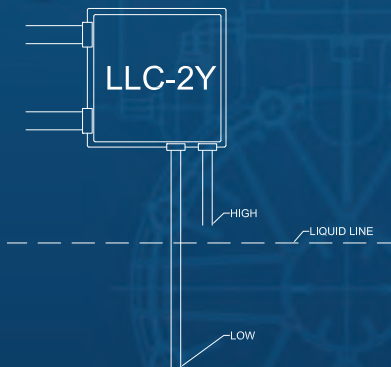
Liquid Level Controller



LLC-2Y

Liquid Level Controller

❖ Works well, where other types of level controllers will fail.



VGA-342
Power Valve

❖ LLC and DRD units are compatible with all air-operated double diaphragm pumps.



DRD-100
Dry-Run Detector

Yamada® LLC-2Y Liquid Level Controller

The Yamada® LLC-2Y Liquid Level Controller is a completely pneumatic system designed to **automatically start and stop** Yamada® air-powered double diaphragm pumps when the liquid level within a tank, sump, etc. reaches predetermined levels.

An extremely versatile controller, the LLC-2Y can be used in both **single and dual pump** applications with any size or model Yamada® pump. Used in a single pump configuration, it automatically controls either the filling or emptying of a tank or other vessel. When connected to two separate pumps, it will control both the filling and emptying of the tank. This **dual pump capability** is particularly useful for waste water storage, contaminated water clean up, and other applications where liquids are regularly transferred into and out of a single vessel.

The LLC-2Y consists of a sophisticated **air logic control valve** housed in an impact-resistant fiberglass reinforced plastic enclosure. As the liquid level within the tank rises or falls, the subtle changes in pressure are transmitted through high and low level dip tubes to the air logic control valve. When the liquid level reaches a **predetermined level** (tubing is cut in the field to the preferred HIGH and LOW level points), the power valve supplying air pressure to the pump is turned ON or OFF as required.

The LLC-2Y is capable of **maintaining liquid levels** in virtually an unpressurized vessel. Its liquid level control span ranges from a few inches to dozens of feet. For added convenience, it may be mounted up to 20 feet away from the pump.

Dry-Run Detection

Yamada® DRD-100 Dry-Run Detector

The Yamada® DRD-100 detects increases in air volume due to loss of prime or dry-running, and automatically shuts down the pump to prevent excess cycling and increased diaphragm wear.

Extends life of diaphragm

Eliminates air consumption in dry run applications

Prevents air valve from premature failure

Intrinsically safe operation

Supports remote warning systems

Works universally with all competitive pumps

Pulsation Dampeners

Yamada® AD Series Pulsation Dampeners

Metering / Injection / Dosing

Equalizes discharge pressure spikes, increasing accuracy.

Filter Press/Inline Filters

Increases filter efficiency and life by providing a smooth flow.

Spraying

Smooth, consistent spray pattern.

Filling

Eliminates inconsistent filling and splashing.

Transfer

Eliminates harmful water hammer, preventing pipe and valve damage.

Yamada® AD Pulsation Dampeners incorporate a flow-through design which keeps solids in suspension, maintaining dampener effectiveness.

A completely automatic air motor self-relieves if reduction of discharge head condition occurs.

Port Sizes: 3/8", 1", 1-1/2", and 2"

Dampener Model	Fits Pump Models
AD-10 (3/8" port)	NDP-5, NDP-15, DP-10, DP-15
AD-25 (1" port)	NDP-20, NDP-25, NDP-32
AD-40 (1-1/2" port)	NDP-40, XDP-40
AD-50 (2" port)	NDP-50, NDP-80, XDP-50, XDP-80

Material

Aluminum (ADC-12)	All models
Stainless Steel (316)	All models
Cast Iron	AD-25, AD-40, AD-50
Polypropylene (PPG)	All models
Kynar®	AD-25, AD-50

Diaphragm

Choice of seven elastomers. Diaphragm is typically interchangeable with the pump's diaphragm.

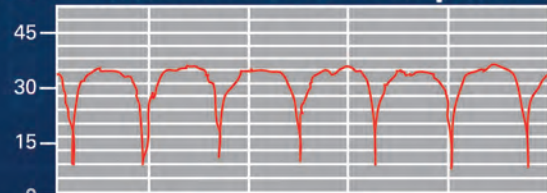
Air Side Coating Option

PTFE grey coating (XP)

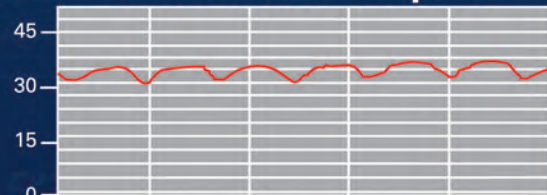
For additional information, please contact us toll free at (800) 990-7867 or visit www.yamadapump.com



PSI Without Pulsation Dampener



PSI With Pulsation Dampener



Pump Diaphragms



What to Consider When Selecting the Proper Diaphragm Material

- Chemical resistance
- Cost
- Estimated flex life
- Temperature limitations
- Abrasion resistance

Rubber Compounds

Neoprene (CR)

Excellent for non-corrosive abrasive applications.

Identification: Dull Black with No Dot

Temperature Range: 0°F to 180°F

Buna-N (NBR)

Excellent for petroleum based fluids.

Identification: Black with a Red or Pink Dot

Temperature Range: 10°F to 180°F

Nordel™ (EPDM)

Excellent for low temperatures, caustics and some acids.

FDA Compliant Material (must be specified).

Identification: Black with Green Dot

Temperature Range: -40°F to 212°F

Viton® (FKM)

Excellent for aggressive fluids and high temperature applications.

Identification: Black with Silver or Blue Dot

Temperature Range: -20°F to 248°F

Thermoplastic Compounds

Hytrel® (TPEE)

Excellent general-purpose diaphragm for non-corrosive abrasive applications and high-flex life. FDA compliant material.

Identification: Tan/Cream material with No Dot

Temperature Range: 0°F to 248°F

Santoprene® (TPO)

Excellent for acids or caustics with a very high flex life.

Identification: Black Thermoplastic

Temperature Range: -10°F to 180°F

PTFE

Excellent choice for pumping highly aggressive fluids, including solvents.

Identification: White diaphragm with No Dot

Temperature Range: 40°F to 212°F

■ Please note that excessive inlet pressure or excessive suction lift can shorten diaphragm life. Please consult Yamada when operating pump at extreme high or low conditions.

Optional Coatings

Air motor PTFE grey coating (XP) is available for Yamada pumps for two primary reasons:

Environment: Pump installation in a chemically aggressive location where material or fumes *not compatible with aluminum* may contact the air motor.

Diaphragm Failure: If properly selected, the coating will defend the major aluminum air valve components from the fluid being pumped.

For internal and external protection, the four major air motor components are independently coated, then assembled.

Note: Coating is not available for NDP-5 & NDP-15 series pumps.

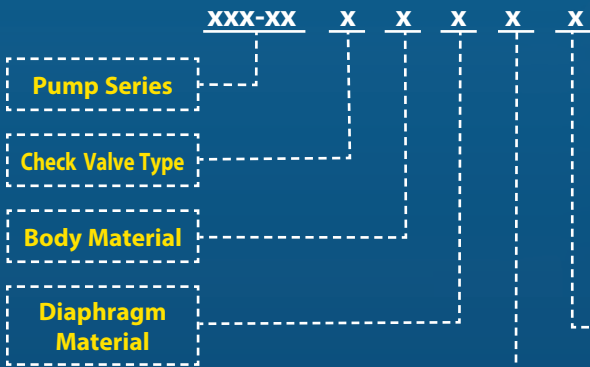


PTFE Grey Coating (XP)

❖ All surfaces, in and out, are coated.

Pump Options

Model Number Nomenclature



Optional Ball Valve/Seat Materials

C: Neoprene (CR)	TPO: Santoprene®
N: Buna N (NBR)	SS: 316 Stainless Steel ball & seat only
E: Nordel™ (EPDM)	S1: 316 SS ball only
T: PTFE	S2: 316 SS seat only
V: Viton® (FKM)	
H: Hytrel® (TPE)	

- To properly specify a Yamada pump, the following information is required:**
- ✓ Material to be pumped (viscosity & specific gravity)
 - ✓ Pumping temperature
 - ✓ Corrosive/abrasive?
 - ✓ Available air supply
 - ✓ Discharge pressure (PSI or TDH)
 - ✓ Suction line details
 - ✓ Flow rate & operating condition
- A complete specification form and pump selector is available at yamadapump.com*

Additional Options

Manifolds

- I: Split suction manifold
- Z: Both manifolds split
- O: Split discharge manifold
- MP: Multiport manifold
- FLG: Flanged manifold (cast iron only) (NDP-15/20/25/40/50/80)

Air Motors

- XP: PTFE grey coated
- PP: Glass-filled polypropylene (20/25/50 series only)

Specialty Options

- BH-1: Powder Pump Series 1
- BH-2: Powder Pump Series 2
- BH-3: Powder Pump Series 3
- HP: 2:1 High Pressure pump
- EP-20 RA: 20RA Electro-polished finish (NDP-5/10/15/20/25; SS only)
- FDA: FDA compliant
- UL: U.L. Listed
- CSA: CSA Listed
- D: Drum Pump (DP-10, NDP-15/20, G15 only)

Proximity Sensors

- P1: Proximity sensor 10-30 VDC
- P2: Proximity sensor 24-240 VAC
- P1-PP: Proximity sensor 10-30 VDC (PP Air Motor)
- P2-PP: Proximity Sensor 24-240 VAC (PP Air Motor)

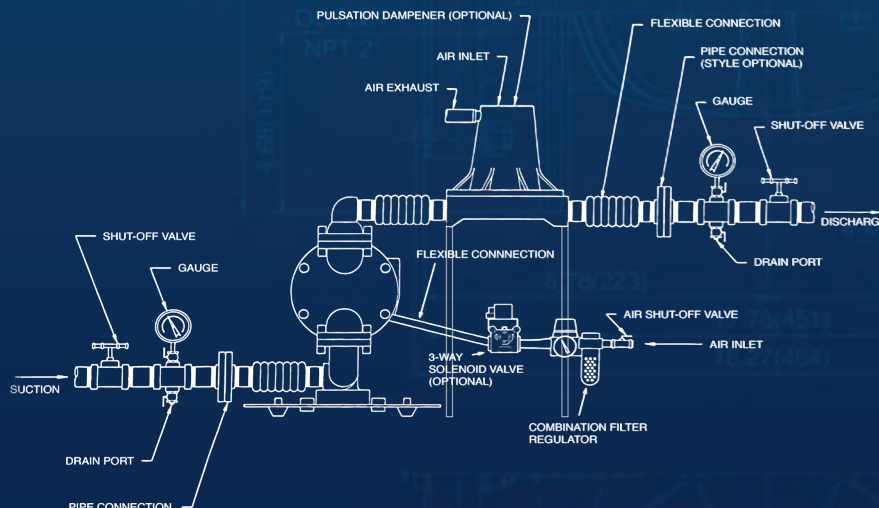
Miscellaneous

- AP: Abrasion pads
- K: Kynar Valve Seats
- L: Destroke (NDP-20-80)
- V: Viton Balls
- T: PTFE Balls
- TS: PTFE Seats
- U: High performance muffler
- 1: PTFE O-Rings
- Q: DM-2 Diaphragm Monitoring System 12V
- Q-2401: DM-2 Diaphragm Monitoring System 115VAC/12VDC
- SVT-225: Smart Valve (NDP-20/25/32)
- SVT458: Smart Valve (NDP-40/50/80)

ONE-UP® Diaphragms

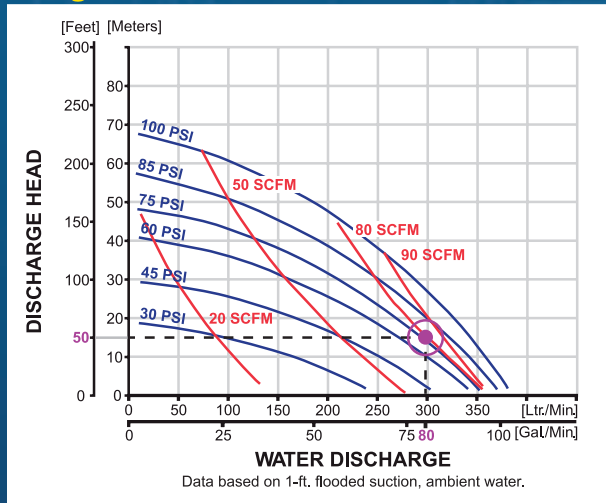
- G: No Backer
- G-A: Abrasion Reistant PTFE
- G-C: Neoprene
- G-E: EPDM
- G-V: Viton

Ideal Air-Powered Double Diaphragm Pump Installation



Pump Requirements

Using Performance Curves



To determine compressed air requirements and proper size for a Yamada air-powered double diaphragm pump, two elements of information are required:

- 1 Required Flow Rate (GPM)
- 2 Total Dynamic Head (TDH)

As an example, consider an NDP-40 Series Pump performance curve with rubber diaphragms, pumping 80 GPM at 50-ft TDH.

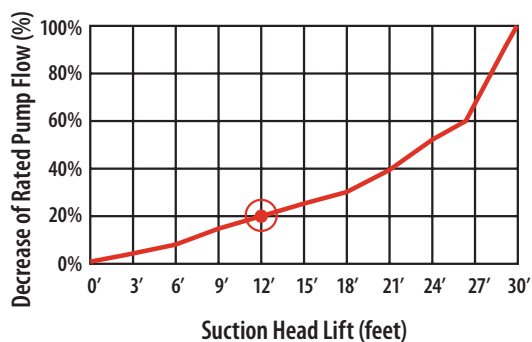
Point A (⊙) on the performance curve is where the desired Flow Rate (GPM) and Total Dynamic Head (TDH) points intersect. This point determines compressed air requirements for the particular pump.

At performance point A (⊙), the pump will require approximately 75 PSI air inlet pressure. To arrive at this figure, follow the solid blue curve (—) to the left to read the air pressure rating in PSI.

By looking at the nearest red curve (—), it is determined the pump will require approximately 80 SCFM (Standard Cubic Feet per Minute) of air volume.

Specified Suction Lift

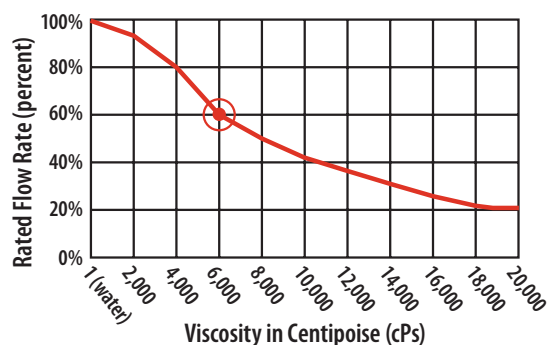
Decrease in Flow Rate as Suction Head Lift Rises



With a suction lift of 12-ft, pump rate decreases by approximately 20%. Valid for pumps 3/4" and larger; data varies with pump configuration.

Viscous Liquids Performance Data

Decrease in Flow Rate From Increase in Viscosity



During the conveyance of a fluid with a viscosity of 6000 cPs, the pump rate decreases to 60% of its rated value (100% = water). Valid for 3/4" pumps & larger.

Note: Please consult Yamada for maximum viscosity capabilities. Additionally, when both the pressure and temperature exceed 70 PSI and 180° F, respectively.

Yamada® is a registered trademark of Yamada America, Inc. SolidPRO® Designed to Pump Fluids Containing Solids is a registered trademark of Yamada America, Inc. Xtreme Duty Pro XDP® is a registered trademark of Yamada America, Inc. The Proof's in the Pump® is a registered trademark of Yamada America, Inc. AutoCAD® is a registered trademark of Autodesk, Inc. Hytre® is a registered trademark of E.I. du Pont de Nemours and Company. Kynar® is a registered trademark of Arkema.

Nordel™ is a trademark of DuPont Dow Elastomers. Ryton® is a registered trademark of Chevron Phillips Chemical Company. Santoprene® is a registered trademark of Monsanto Co. Viton® is a registered trademark of DuPont Performance Elastomers. Flaretek® is a registered trademark of Entegris®. Garlock ONE-UP® is a registered trademark of W.L. Gore & Associates.

Due to Yamada's continued commitment to product improvement, specifications may change without notice.

**Engineered to Perform.
Designed to Outlast.**

Engineers and Manufacturers of

Air-Powered Double Diaphragm Pumps



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