

# Yamada

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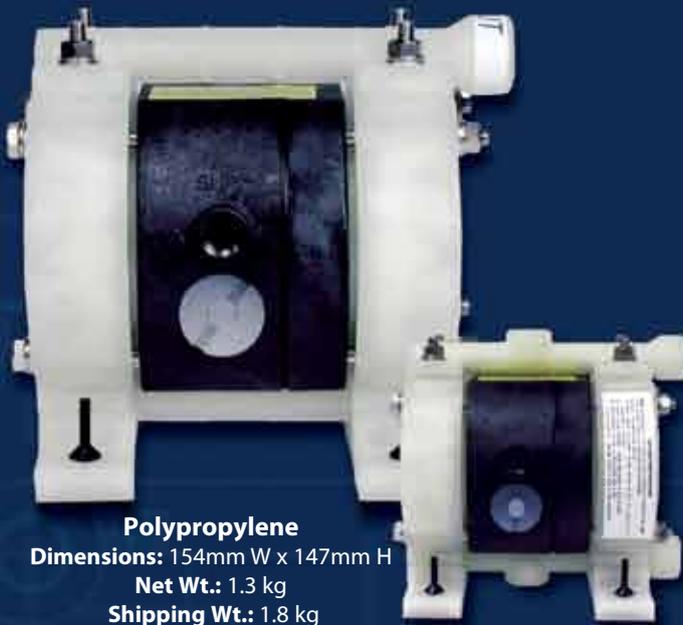


## PRODUCT GUIDE

**High-Performance Air-Powered Double Diaphragm Pumps**

# NDP-5 Series

**Maximum Fluid Discharge of 10L/min  
Port Size 1/4**



**Polypropylene**  
Dimensions: 154mm W x 147mm H  
Net Wt.: 1.3 kg  
Shipping Wt.: 1.8 kg

*shown with optional center port ↗*



**Groundable Acetal**  
Dimensions:  
154mm W x 147mm H  
Net Wt.: 1.4 kg  
Shipping Wt.: 1.8kg



**Kynar® (PVDF)**  
Dimensions:  
154mm W x 147mm H  
Net Wt.: 1.7 kg  
Shipping Wt.: 2.1kg



**Split Manifold**  
Dimensions:  
167mm W x 149mm H  
Net Wt.: 1.3 kg  
Ship Wt.: 1.8 kg



**Stainless Steel**  
Dimensions:  
155mm W x 149mm H  
Net Wt.: 2.7 kg  
Ship Wt.: 3.5 kg

**Aluminum**  
Dimensions:  
155mm W x 149mm H  
Net Wt.: 1.6 kg  
Ship Wt.: 2.0 kg

## Specifications

### Port Dimensions

Intake & discharge	Rc1/4
Air inlet (incl. ball valve):	Rc1/4
Air exhaust (internal silencer):	Rc3/8

### Maximum Liquid Temperature

Fitted with Teflon® (PTFE) diaphragm

Pump Material	Temperature
Polypropylene (PPG)	60°C
Kynar® (PVDF)	60°C
Groundable Acetal(POM)	60°C
Aluminum (AC4C-T6)	100°C
Stainless Steel (SCS14)	100°C

### Air Supply Pressure (All Models)

0.2–0.7MPa

### Discharge Volume Per Cycle

20mL

### Maximum Cycles Per Minute: 400

### Maximum Dry Suction Lift: 1.5M

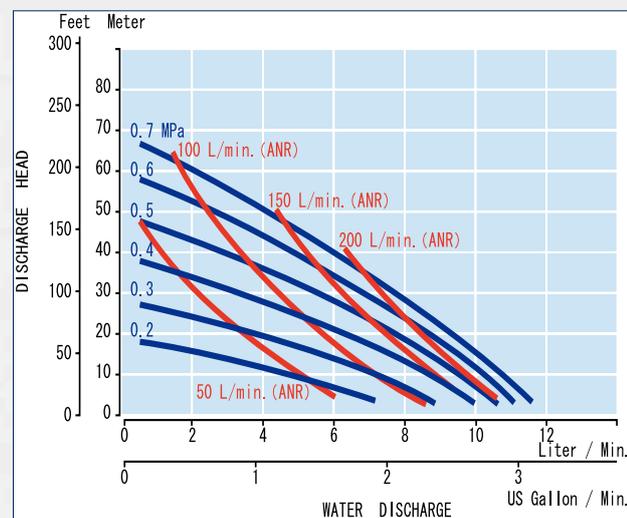
### Pump Air Motor

Ryton® air motor standard

### Model Number Nomenclature

Polypropylene (PPG)	NDP-5FPT
Kynar® (PVDF)	NDP-5FVT
Groundable Acetal(POM)	NDP-5FDT
Aluminum (AC4C-T6)	NDP-5FAT
Stainless Steel (SCS14)	NDP-5FST

### Performance Curve



AutoCAD® drawings are available at [yamadacorp.co.jp/global](http://yamadacorp.co.jp/global)

# DP-10 Series / DP-15 Series

Maximum Fluid Discharge of 20L/min  
Port Size 3/8

Maximum Fluid Discharge of 50L/min  
Port Size 1/2



## DP-10 Aluminum

Dimensions: 186mm W x 241mm H

Net Wt.: 3.5 kg

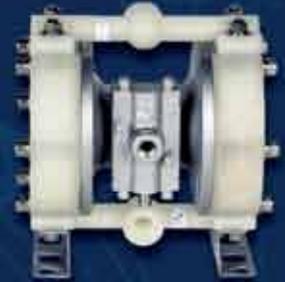
Shipping Wt.: 6.0 kg

## DP-10 Stainless Steel

Dimensions: 186mm W x 241mm H

Net Wt.: 5.2 kg

Shipping Wt.: 6.0 kg



## DP-10

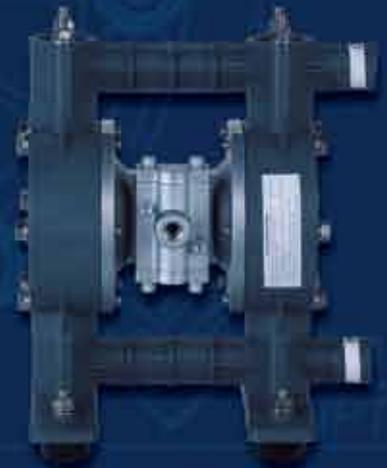
### Polypropylene

Dimensions:

195mm W x 196mm H

Net Wt.: 3.0 kg

Shipping Wt.: 3.3 kg



## DP-15

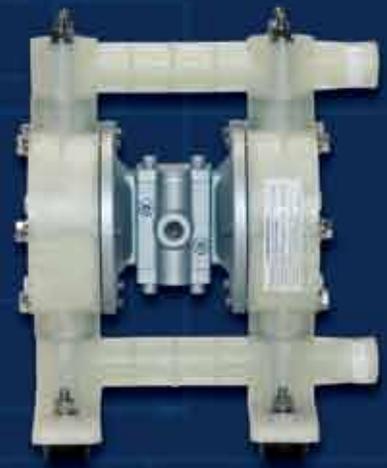
### Groundable Acetal

Dimensions:

246mm W x 297mm H

Net Wt.: 4.0 kg

Shipping Wt.: 5.4 kg



## DP-15

### Polypropylene

Dimensions:

246mm W x 297mm H

Net Wt.: 4.0 kg

Shipping Wt.: 5.4 kg

AutoCAD® drawings are available  
at [yamadacorp.co.jp/global](http://yamadacorp.co.jp/global)

# DP-10/15 Series Specifications

## DP-10 Port Dimensions

Intake & discharge connection:

Polypropylene (PPG)	Rc3/8
Aluminum (ADC12)	Rc3/8
Stainless Steel (SCS14)	Rc3/8

## DP-15 Port Dimensions

Intake & discharge connection:

Polypropylene (PPG)	Rc3/8
Groundable Acetal (POM)	Rc3/8

## Air Inlet / Exhaust

Air inlet (incl. ball valve):	Rc1/4
Air exhaust (incl. silencer):	Rc3/8

## Maximum Liquid Temperature\*

Diaphragm Material	Temperature
Neoprene (CR)	70°C
Buna N (NBR)	70°C
Hytrel® (TPEE)	80°C
Santoprene® (TPO)	100°C
Teflon® (PTFE)	100°C

\*The maximum liquid temperature for metal and Kynar®-fitted pumps is determined by the elastomer (diaphragm material). Polypropylene and Groundable Acetal pumps have a maximum liquid temperature of 60°C regardless of diaphragm material.

## Air Supply Pressure (All Models)

0.2–0.7MPa

## Discharge Volume Per Cycle

DP-10: 50mL

DP-15: 55mL

## Maximum Cycles Per Minute

All diaphragms: 300

## Maximum Size Solid

1/32" (1 mm)

## Maximum Dry Suction Lift

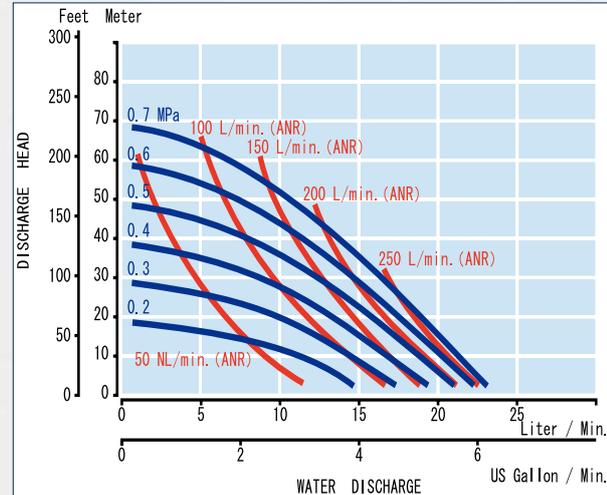
All diaphragms: 3m

## Aluminum Air Motor – Standard

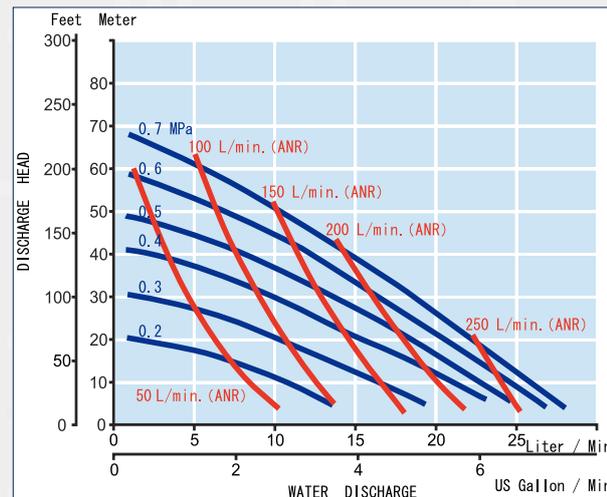
Optional: Epoxy-coated, Teflon®-coated, or Electroless Nickel Plate

## Optional Split Manifold – contact Yamada

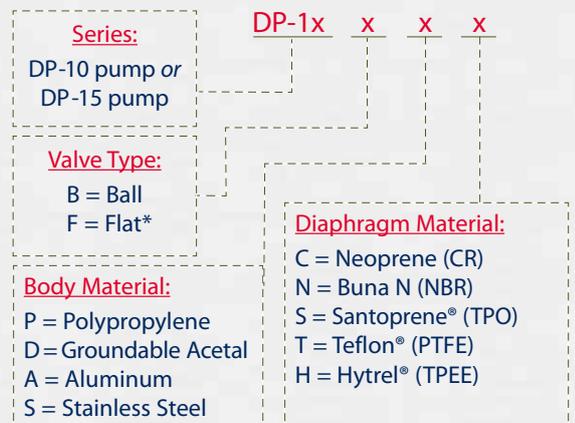
## DP-10 Series Performance Curve



## DP-15 Series Performance Curve



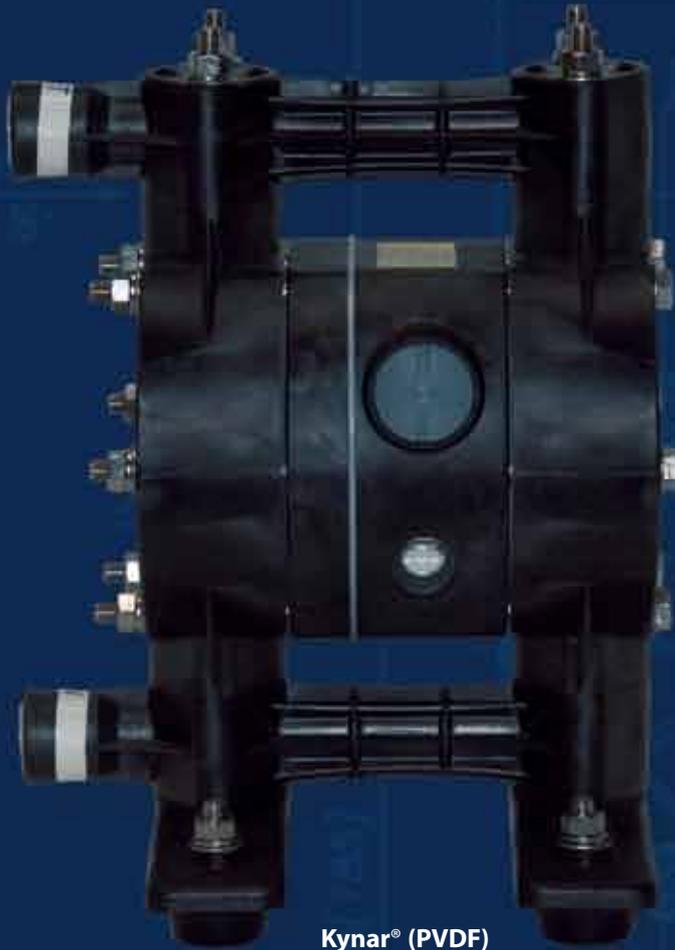
## Model Number Nomenclature



\* Flat valves available for DP-15 pumps only.

# NDP-15 Series

Maximum Fluid Discharge of 50L/min  
Port Size 1/2



**Kynar® (PVDF)**

**Dimensions:** 220mm W x 297mm H

**Net Wt.:** 4.3 kg

**Shipping Wt.:** 5.0 kg



**Polypropylene**

**Dimensions:**

220mm W x 297mm H

**Net Wt.:** 3.5 kg

**Shipping Wt.:** 4.0 kg



**Polypropylene with  
Center Port Option**

**Dimensions:**

220mm W x 297mm H

**Net Wt.:** 3.5 kg

**Shipping Wt.:** 4.0 kg



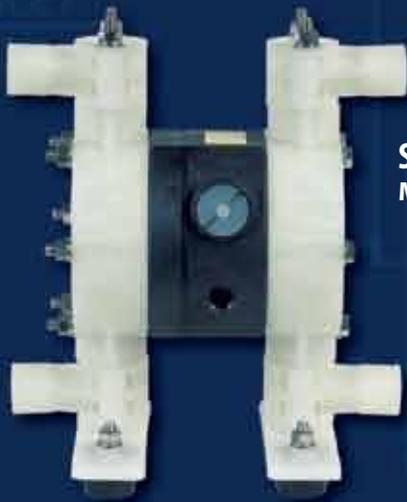
**Groundable Acetal**

**Dimensions:**

220mm W x 297mm H

**Net Wt.:** 3.5 kg

**Shipping Wt.:** 4.5 kg



**Split Manifold Pump  
Model NDP-15FPT-Z**

**Aluminum**

**Dimensions:**

220mm W x 271mm H

**Net Wt.:** 4.1 kg

**Shipping Wt.:** 5.0 kg



**Stainless Steel**

**Dimensions:**

211mm W x 247mm H

**Net Wt.:** 6.3 kg

**Shipping Wt.:** 7.0 kg

AutoCAD® drawings are available  
at [yamadacorp.co.jp/global](http://yamadacorp.co.jp/global)

# NDP-15 Series Specifications

## Port Dimensions

Intake & discharge connection:

Polypropylene (PPG) ■	Rc1/2
Kynar® (PVDF) ◆	Rc1/2
Groundable Acetal (POM) ◆	Rc1/2
Aluminum (ADC12) ▲	Rc1/2
Stainless Steel (SCS14) ▲	Rc1/2
Air inlet (includes ball valve):	Rc1/4
Air exhaust (internal silencer):	Rc3/8

- 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® and Groundable Acetal 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
Neoprene (CR)	70°C
Buna N (NBR)	70°C
Hytrel® (TPEE)	80°C
Santoprene® (TPO)	100°C
Teflon® (PTFE)	100°C

\*The maximum liquid temperature for metal and Kynar®-fitted pumps is determined by the elastomer (diaphragm material). Polypropylene and Groundable Acetal pumps have a maximum liquid temperature of 60°C regardless of diaphragm material.

## Air Supply Pressure (All Models)

0.2–0.7MPa

## Discharge Volume Per Cycle

70mL

## Maximum Cycles Per Minute

All diaphragms: 400

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

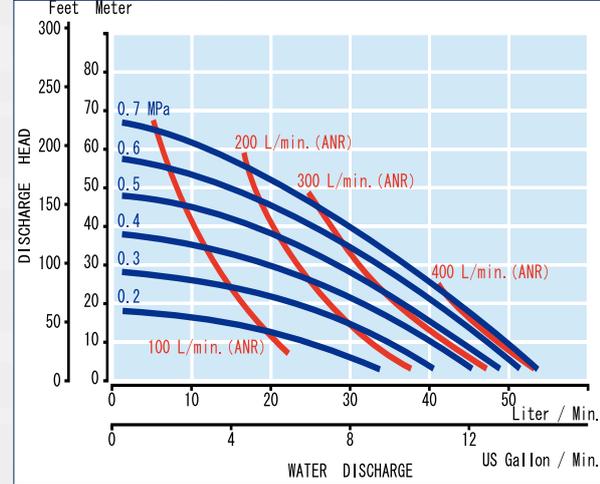
## Maximum Dry Suction Lift

Flat-type check valve: 2.4M

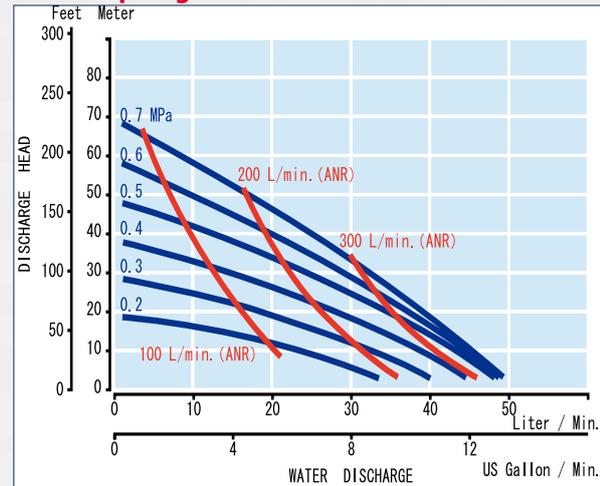
Ball-type check valve: 1.5M

## Pump Air Motor: Ryton® air motor standard

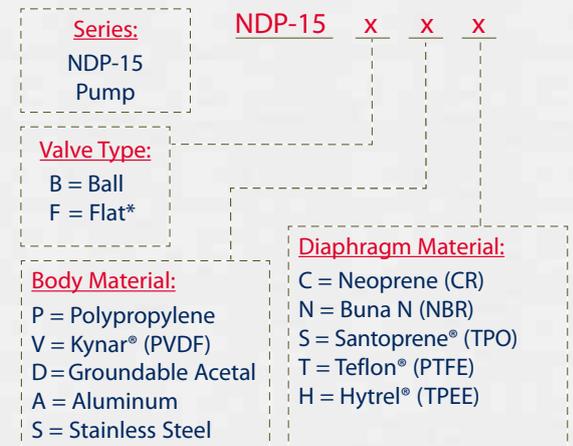
## Rubber Diaphragm Performance Curve



## PTFE Diaphragm Performance Curve



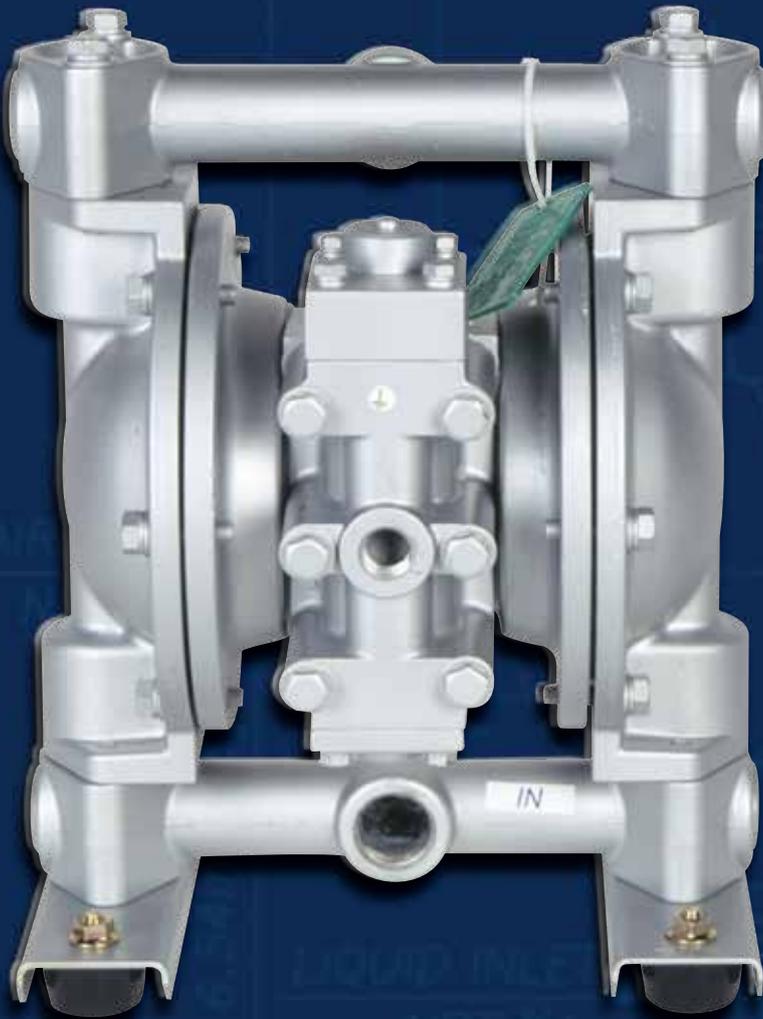
## Model Number Nomenclature



\* Flat valves are available for plastic pumps only.

# NDP-20 Series

Maximum Fluid Discharge of 100L/min  
Port Size 3/4



## Aluminum

Dimensions: 249mm W x 317mm H

Net Wt.: 9.0 kg

Shipping Wt.: 11.0 kg

## Stainless Steel

Dimensions: 245mm W x 315mm H

Net Wt.: 14.0 kg

Shipping Wt.: 15.0 kg



## Polypropylene – Rc

Dimensions: 316mm W x 368mm H

Net Wt.: 8.0 kg

Shipping Wt.: 9.0 kg



## Polypropylene – JIS Flange

Dimensions: 316mm W x 374mm H

Net Wt.: 8.0 kg

Shipping Wt.: 9.0 kg

AutoCAD® drawings are available  
at [yamadacorp.co.jp/global](http://yamadacorp.co.jp/global)

# NDP-20 Series Specifications

## Port Dimensions

Intake & discharge connection:

Polypropylene (PPG)	Rc3/4
Aluminum (ADC12)	Rc3/4
Stainless Steel (316)	Rc3/4
Air inlet (incl. ball valve):	Rc1/4
Air exhaust (incl. silencer):	Rc3/4

**ANSI Flange** also available — consult Yamada.

## Maximum Liquid Temperature\*

Diaphragm Material	Temperature
Neoprene (CR)	70°C
Buna N (NBR)	70°C
EPDM	80°C
Hytre <sup>®</sup> (TPEE)	100°C
Santoprene <sup>®</sup> (TPO)	100°C
Viton <sup>®</sup> fluoroelastomer (FKM)	100°C
Teflon <sup>®</sup> (PTFE)	100°C

\*The maximum liquid temperature for metal and Kynar<sup>®</sup>-fitted pumps is determined by the elastomer (diaphragm material). Polypropylene pumps have a maximum liquid temperature of 60°C regardless of diaphragm material.

## Air Supply Pressure (All Models)

0.2–0.7MPa

## Discharge Volume Per Cycle

Rubber diaphragm: 350mL  
PTFE diaphragm: 240mL

## 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: 5.5m

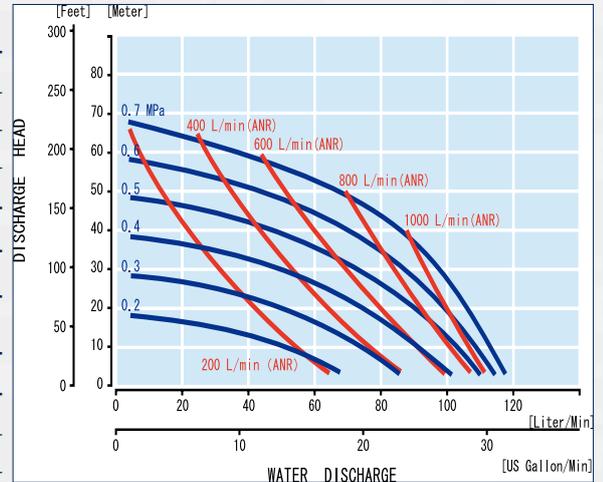
## Air Motors

Aluminum air motors are standard on metal pumps; glass-filled polypropylene air motors are standard on plastic pumps.

**Optional air motors:** Epoxy-coated, Teflon<sup>®</sup>-coated, Electroless Nickel Plate, aluminum and glass-filled polypropylene.

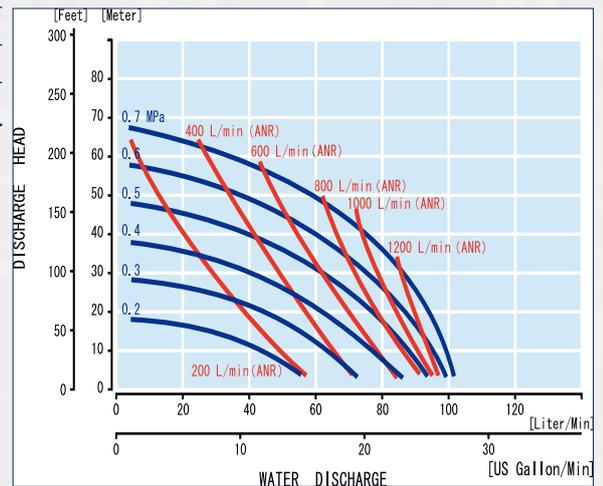
**Optional Split Manifold** – contact Yamada

## Rubber Diaphragm Performance Curve



To calculate performance for Santoprene<sup>®</sup> and Hytre<sup>®</sup>-fitted pumps, use Rubber Diaphragm Curve.

## PTFE Diaphragm Performance Curve



## Model Number Nomenclature

NDP-P20B x x

Flange  
or  
Rc

**Series:**  
NDP-20 Pump  
w/Ball Valve

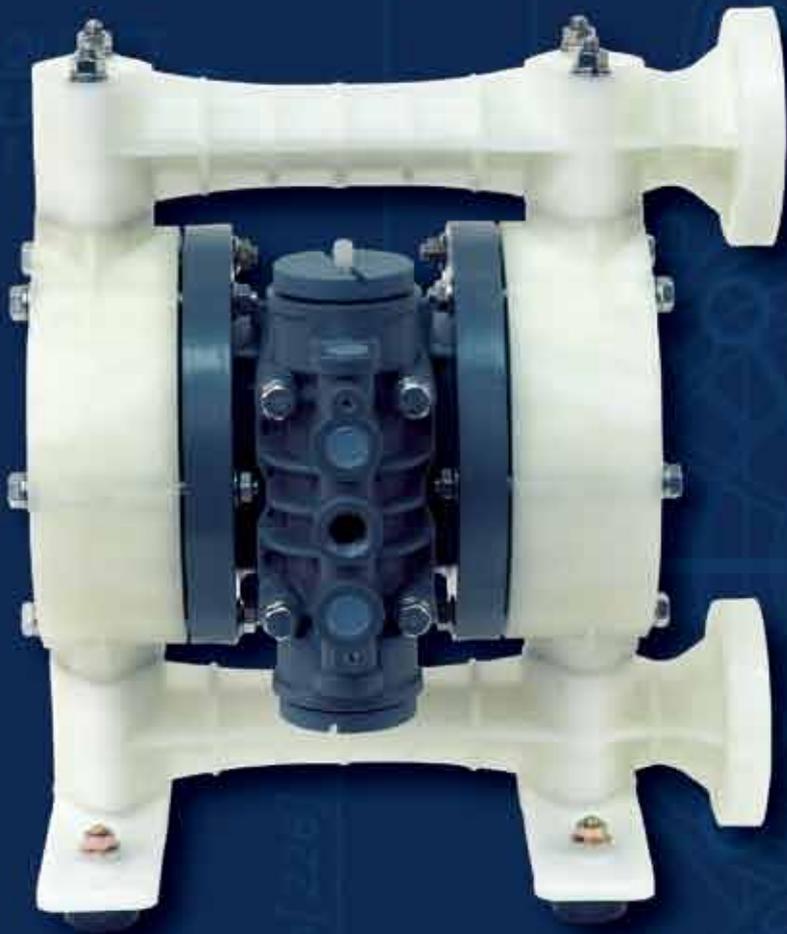
**Plastic Pump  
Air Motor:**  
P=Polypropylene

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

**Diaphragm Material:**  
C = Neoprene (CR)  
N = Buna N (NBR)  
E = Nordel<sup>™</sup> (EPDM)  
S = Santoprene<sup>®</sup> (TPO)  
T = Teflon<sup>®</sup> (PTFE)  
V = Viton<sup>®</sup> (FKM)  
H = Hytre<sup>®</sup> (TPEE)

# NDP-25 Series

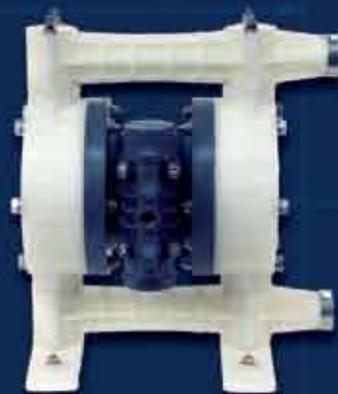
Maximum Fluid Discharge of 160L/min  
Port Size 1



**Polypropylene – JIS Flange**  
Dimensions: 366mm W x 442mm H  
Net Wt.: 11.0 kg  
Shipping Wt.: 14.0kg

AutoCAD® drawings are available  
at [yamadacorp.co.jp/global](http://yamadacorp.co.jp/global)

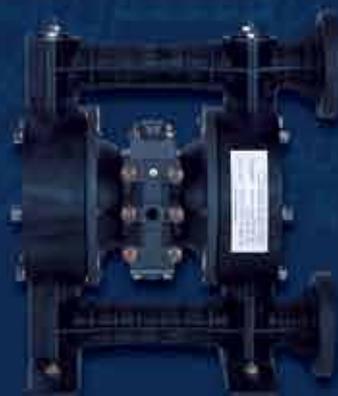
**Polypropylene – Rc**  
Dimensions:  
367mm W x 429mm H  
Net Wt.: 11.0 kg  
Shipping Wt.: 14.0 kg



**Kynar® (PVDF) – Rc**  
Dimensions:  
365mm W x 429mm H  
Net Wt.: 13.5 kg  
Shipping Wt.: 15.5 kg



**Kynar® (PVDF) – JIS Flange**  
Dimensions:  
364mm W x 440mm H  
Net Wt.: 13.5 kg  
Shipping Wt.: 15.0 kg



**Aluminum**  
Dimensions: 287mm W x 375mm H  
Net Wt.: 13.0 kg  
Shipping Wt.: 15.0 kg

**Stainless Steel**  
Dimensions: 281mm W x 375mm H  
Net Wt.: 20.0 kg  
Shipping Wt.: 20.9 kg

**Cast Iron**  
Dimensions: 286mm W x 375mm H  
Net Wt.: 20.0 kg  
Shipping Wt.: 22.0 kg



# NDP-25 Series Specifications

## Port Dimensions

Intake & discharge connection:

Polypropylene (PPG)	Rc1
Kynar® (PVDF)	Rc1
Aluminum (ADC12)	Rc1
Stainless Steel (SCS14)	Rc1
Cast Iron	Rc1
Air inlet (incl. ball valve):	Rc3/8
Air exhaust (incl. silencer):	Rc3/4

**ANSI Flange** also available — consult Yamada.

## Maximum Liquid Temperature\*

Diaphragm Material	Temperature
Neoprene (CR)	70°C
Buna N (NBR)	70°C
EPDM	80°C
Hytrel® (TPEE)	100°C
Santoprene® (TPO)	100°C
Viton® fluoroelastomer (FKM)	100°C
Teflon® (PTFE)	100°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 60°C regardless of diaphragm material.

## Air Supply Pressure (All Models)

0.2–0.7MPa

## Discharge Volume Per Cycle

Rubber diaphragm: 600mL

PTFE diaphragm: 500mL

## Maximum Cycles Per Minute

Rubber diaphragm: 210

PTFE diaphragm: 210

## Maximum Size Solid

3/16" (4.8 mm)

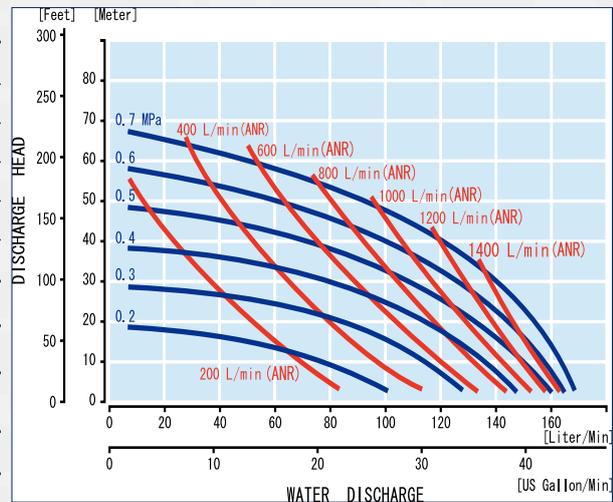
## Maximum Dry Suction Lift

Rubber-fitted pump capability: 5.5M

**Air Motors:** Aluminum air motors are standard on metal pumps; glass-filled polypropylene air motors are standard on plastic and Kynar® pumps. Optional

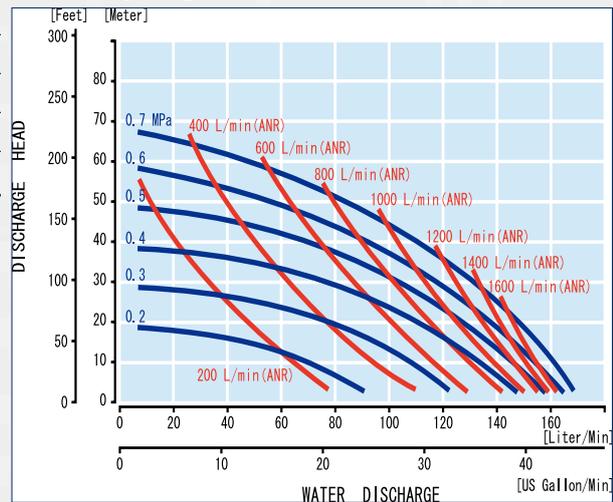
**Optional Split Manifold** – contact Yamada

## Rubber Diaphragm Performance Curve



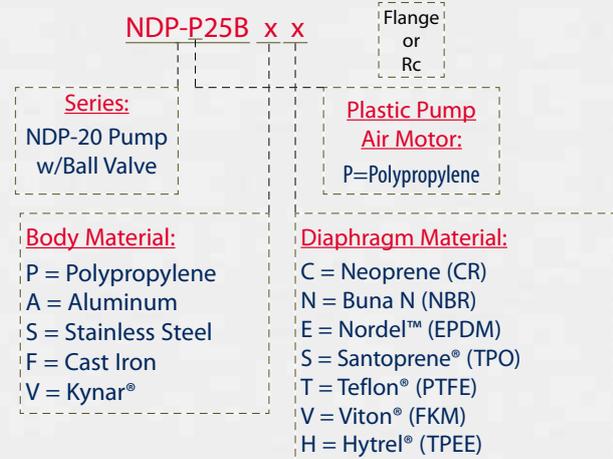
To calculate performance for Santoprene® and Hytrel®-fitted pumps, use Rubber Diaphragm Curve.

## PTFE Diaphragm Performance Curve



## Model Number Nomenclature

NDP-P25B x x



# NDP-40 Series

Maximum Fluid Discharge of 400L/min  
Port Size 1-1/2



## Kynar® (PVDF)

Dimensions: 398mm W x 749mm H  
Net Wt.: 32.0 kg  
Shipping Wt.: 36.0 kg

AutoCAD® drawings are available  
at [yamadacorp.co.jp/global](http://yamadacorp.co.jp/global)

**Polypropylene**  
Dimensions:  
405mm W x 752mm H  
Net Wt.: 27.0 kg  
Shipping Wt.: 36.0 kg



**Aluminum**  
Dimensions:  
412mm W x 710mm H  
Net Wt.: 29.0 kg  
Shipping Wt.: 38.0 kg



**Stainless Steel**  
Dimensions:  
411mm W x 705mm H  
Net Wt.: 40.0 kg  
Shipping Wt.: 49.0 kg



**Cast Iron - Rc**  
Dimensions:  
411mm W x 704mm H  
Net Wt.: 47.0 kg  
Shipping Wt.: 56.0 kg

JIS/DIN Flange on Stainless  
Steel pumps.



# NDP-40 Series Specifications

## Port Dimensions

Intake & discharge connection:

Polypropylene (PPG)	Flange JIS 10K40A/DN40PN10
Kynar® (PVDF)	Flange JIS 10K40A/DN40PN10
Aluminum (ADC12)	Flange JIS 10K40A/DN40PN10
Stainless Steel (SUS14)	Flange JIS 10K40A/DN40PN10
Cast Iron	Rc1-1/2
Air inlet (incl. ball valve):	Rc1/2
Air exhaust (incl. silencer):	Rc1

## Maximum Liquid Temperature\*

Diaphragm Material	Temperature
Neoprene (CR)	70°C
Buna N (NBR)	70°C
EPDM	80°C
Hytrel® (TPEE)	100°C
Santoprene® (TPO)	100°C
Viton® fluoroelastomer (FKM)	100°C
Teflon® (PTFE)	100°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 60°C regardless of diaphragm material.

## Air Supply Pressure (All Models)

0.2–0.7MPa

## Discharge Volume Per Cycle

Rubber diaphragm: 2800 mL  
PTFE diaphragm: 1400 mL

## Maximum Cycles Per Minute

Rubber diaphragm: 148  
PTFE diaphragm: 270

## Maximum Size Solid

9/32" (7 mm)

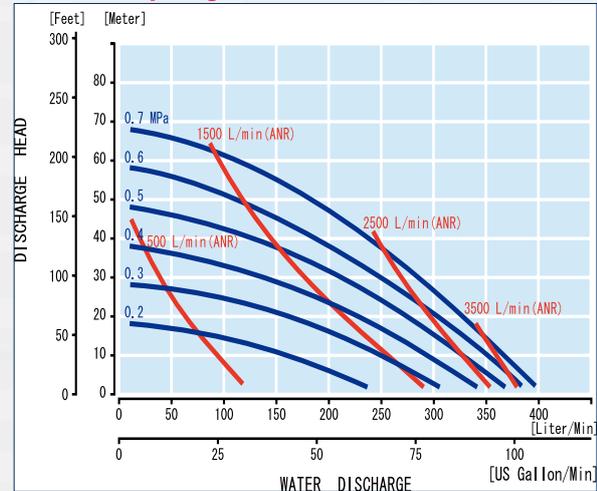
## Maximum Dry Suction Lift

Rubber-fitted pump capability: 5.5M

## Aluminum Air Motor – Standard

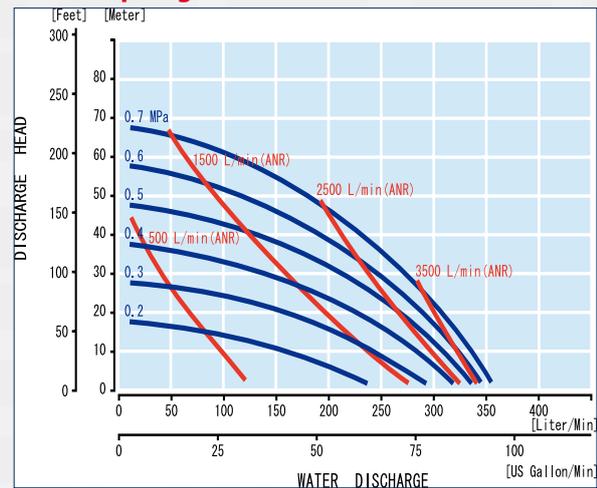
Optional: Epoxy-coated, Teflon®-coated, or Electroless Nickel Plate

## Rubber Diaphragm Performance Curve

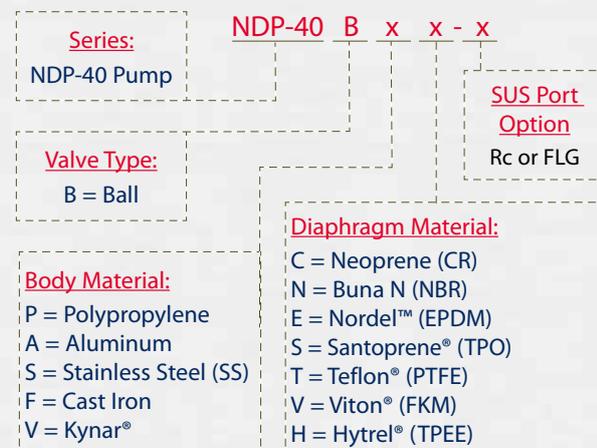


To calculate performance for Santoprene® and Hytrel®-fitted pumps, use Rubber Diaphragm Curve.

## PTFE Diaphragm Performance Curve



## Model Number Nomenclature



# NDP-50 Series

Maximum Fluid Discharge of 600L/min  
Port Size 2



**Cast Iron**  
**Dimensions:**  
450mm W x 776mm H  
**Net Wt.:** 65.0 kg  
**Shipping Wt.:** 77.0 kg

**Stainless Steel**  
**Dimensions:**  
450mm W x 782mm H  
**Net Wt.:** 60.0 kg  
**Shipping Wt.:** 72.0 kg

**Aluminum**  
**Dimensions:**  
452mm W x 780mm H  
**Net Wt.:** 37.0 kg  
**Shipping Wt.:** 49.0 kg



**Polypropylene**  
**Dimensions:**  
472mm W x 821mm H  
**Net Wt.:** 35.0 kg  
**Shipping Wt.:** 46.0 kg



JIS/ANSI/DIN Flange  
on Stainless Steel models.

**Kynar® (PVDF)**  
**Dimensions:**  
462mm W x 819mm H  
**Net Wt.:** 41.0 kg  
**Shipping Wt.:** 53.0 kg



# NDP-50 Series Specifications

## Port Dimensions

Intake & discharge connection:

Polypropylene (PPG) Flange JIS10K50A/ANSI150 2B/ DN50PN10

Kynar® (PVDF) Flange JIS10K50A/ANSI150 2B/ DN50PN10

Aluminum (ADC12) Flange JIS10K50A/ANSI150 2B/ DN50PN10

Stainless Steel (SCS14) Flange JIS10K50A/ANSI150 2B/ DN50PN10

Cast Iron Rc2

Air inlet (incl. ball valve): Rc3/4

Air exhaust (incl. silencer): Rc1

## Maximum Liquid Temperature\*

Diaphragm Material	Temperature
Neoprene (CR)	70°C
Buna N (NBR)	70°C
EPDM	80°C
Hytrel® (TPEE)	100°C
Santoprene® (TPO)	100°C
Viton® fluoroelastomer (FKM)	100°C
Teflon® (PTFE)	100°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 60°C regardless of diaphragm material.

## Air Supply Pressure (All Models)

0.2–0.7MPa

## Discharge Volume Per Cycle

Rubber diaphragm: 4300mL

PTFE diaphragm: 2100mL

## 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: 5.8M

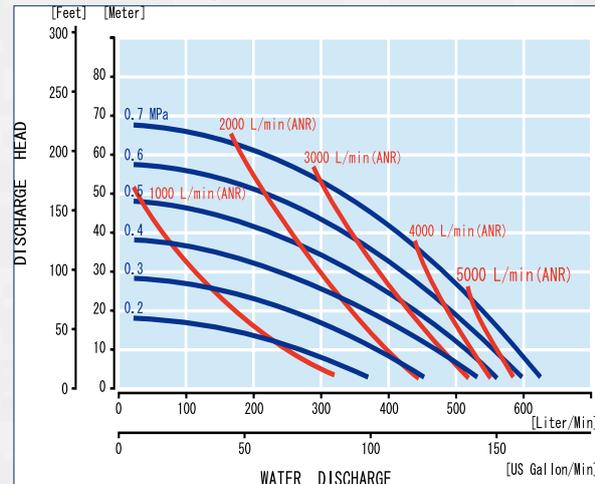
## Aluminum Air Motor – Standard

Optional: Epoxy-coated, Teflon®-coated, or Electroless Nickel Plate

AutoCAD® drawings are available

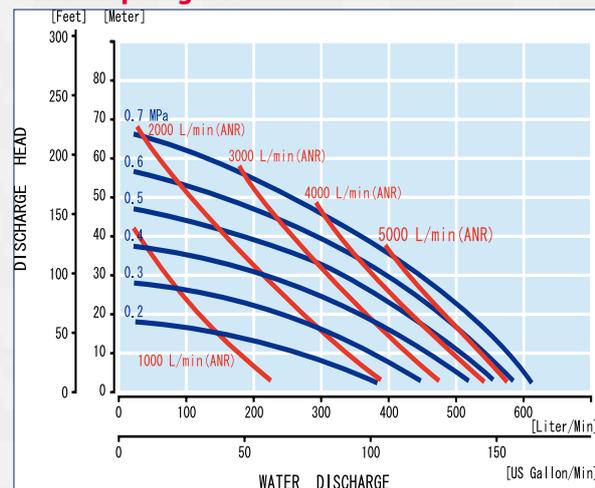
at [yamadacorp.co.jp/global](http://yamadacorp.co.jp/global)

## Rubber Diaphragm Performance Curve

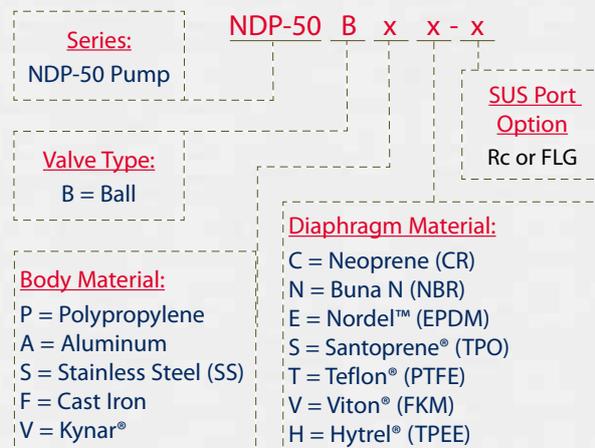


To calculate performance for Santoprene® and Hytrel®-fitted pumps, use Rubber Diaphragm Curve.

## PTFE Diaphragm Performance Curve



## Model Number Nomenclature



# NDP-80 Series

Maximum Fluid Discharge of 800L/min  
Port Size 3



**Stainless Steel**  
Dimensions: 521mm W x 984mm H  
Net Wt.: 102.0 kg  
Shipping Wt.: 117.0 kg

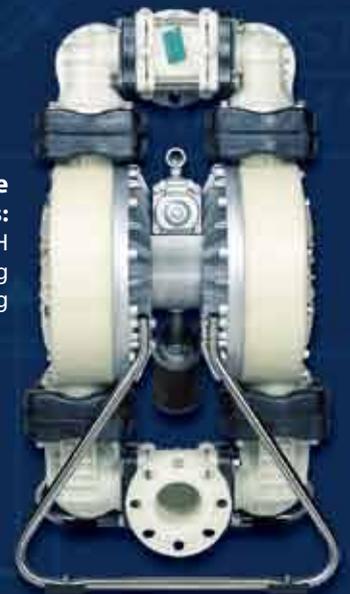
**Aluminum**  
Dimensions:  
522mm W x 998mm H  
Net Wt.: 65.0 kg  
Shipping Wt.: 74.0 kg



**Cast Iron - Rc**  
Dimensions:  
521mm W x 984mm H  
Net Wt.: 112.0 kg  
Shipping Wt.: 127.0 kg



**Polypropylene**  
Dimensions:  
580mm W x 1044mm H  
Net Wt.: 64.0 kg  
Shipping Wt.: 79.0 kg



# NDP-80 Series Specifications

## Port Dimensions

Intake & discharge connection:

Polypropylene (PPG)	Flange JIS10K80A/ANSI150 3B/DN80PN10
Aluminum (ADC12)	Flange JIS10K80A/ANSI150 3B/DN80PN10
Stainless Steel (SCS14)	Flange JIS10K80A/ANSI150 3B/DN80PN10

Cast Iron	Rc3
Air inlet (incl. ball valve):	Rc3/4
Air exhaust (incl. silencer):	Rc1

## Maximum Liquid Temperature\*

Diaphragm Material	Temperature
Neoprene (CR)	70°C
Buna N (NBR)	70°C
EPDM	80°C
Hytre <sup>l</sup> ® (TPEE)	100°C
Santoprene <sup>®</sup> (TPO)	100°C
Viton <sup>®</sup> fluoroelastomer (FKM)	100°C
Teflon <sup>®</sup> (PTFE)	100°C

\*The maximum liquid temperature for metal pumps is determined by the elastomer (diaphragm material). Polypropylene pumps have a maximum liquid temperature of 60°C regardless of diaphragm material.

## Air Supply Pressure (All Models)

0.2–0.7MPa

## Discharge Volume Per Cycle

Rubber diaphragm: 8500mL

PTFE diaphragm: 3800mL

## 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: 5.8M

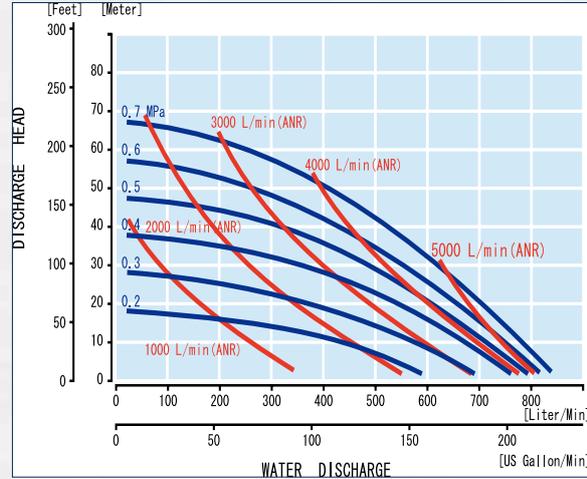
## Aluminum Air Motor – Standard

Optional: Epoxy-coated, Teflon<sup>®</sup>-coated, or Electroless Nickel Plate

Notes: Hytre<sup>l</sup>®-fitted pumps include Buna N check balls & wetted o-rings. Santoprene<sup>®</sup>-fitted pumps include EPDM check balls & wetted o-rings.

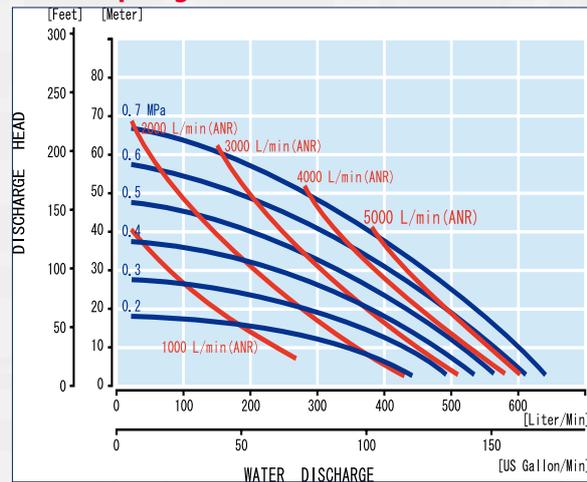
AutoCAD<sup>®</sup> drawings are available at [yamadacorp.co.jp/global](http://yamadacorp.co.jp/global)

## Rubber Diaphragm Performance Curve

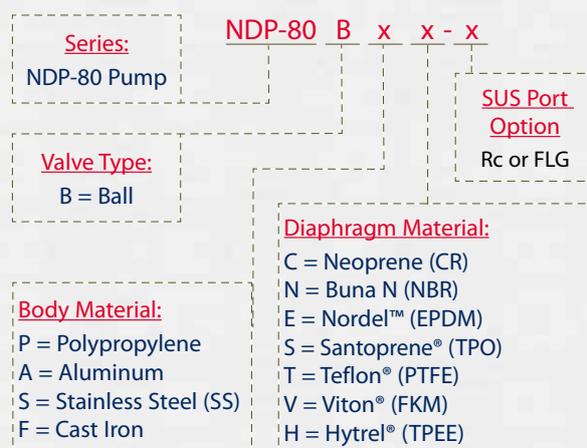


To calculate performance for Santoprene<sup>®</sup> and Hytre<sup>l</sup>®-fitted pumps, use Rubber Diaphragm Curve.

## PTFE Diaphragm Performance Curve



## Model Number Nomenclature



# Flap Valve Diaphragm Pump

## Flapper Pump for Solids Handling

The New Yamada Flap Valve Pump was designed and engineered to address the problems normally associated with flap valve pumps. I.e. Normally due to severe working conditions, there is often a need to remove a pump from service for repairs, cleaning or parts changeovers.

Based on Yamada field proven NDP series foundation, this pump has all of the features and benefits associated with every Yamada pump.

Ingenious Flap Valve design allows for passage of large solids up to 50 mm

Easy access to valve chambers allows easy maintenance when you need it most without the need to remove the pump from service.

Vented diaphragm chambers serve to alleviate problems associated with trapped air/gas.



Model NDP-50FAN



# Mechanical Switch Series

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. Air power is reduced versus a standard air-actuated valve, providing higher pump efficiency.



Model NDP-H80BA Seires



Model NDP-H40BP Seires

F-Series  
Ultra-High Purity  
Pumps



## F-Series

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.

F-Series pumps are available in six sizes

Fluid connections	JIS Flange, or Rc
Maximum Flow rate	95L/min
Air control	internal shuttle valve or external timer-based control
Air pressure range	0.2–0.7MPa
Temperatures up to	100°C

For additional information, please request the *Yamada High-Purity PTFE Pumps* catalog or visit [yamadacorp.co.jp/global](http://yamadacorp.co.jp/global)

## NDP-20 to 80E Series (Electronic Sensor Switching System)

This range of pumps is designed to operate using an External Electronic Pump Driver coupled to a Proximity Sensor built into the pump. They provide the operator with unrivaled operational performance, reliability and cost effectiveness. This system removes any chance of pump stoppages caused from blockages or failures of a standard Internal Air Switching System. Moreover due to the proximity sensors inside the pump, it operates in a de-stroke situation. This will greatly increase the life of the pumps diaphragms, as well as other working parts. These pumps also create high operational stability especially at slow pumping speeds.

- Operating system. Using a proximity sensor installed into the pump and reciprocated with an external solenoid valve. Operation is controlled through an Instrument Sequencer, or Signal Transmit Controller.
- Accessories include a Stroke Counter and a Diaphragm Rupture Sensor.
- Take care as these pumps are not standard stock items and must be specially ordered.

\*As these pumps operate using an electrical control system, they are not suited to flammable applications.



Model NDP-40BA -E Seires



Model NDP-20BS -E Seires

# Drum Pumps

Yamada AODD 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 suction tube.

Drum pumps are available in 3/8", 1/2", and 3/4" port sizes (3/8" metal only & 1/2" plastic only) with flow rates up to 100L/min.

Note: Some Yamada plastic drum pumps incorporate side liquid ports and utilize a 90° elbow on the top of the drum. Refer to DP-10 & NDP-20 technical information for additional performance data. Use applicable NDP nomenclature adding a "D" at the end of the model number. Other sizes and materials are available, consult Yamada.

**Port Dimensions**

<i>Intake &amp; discharge connection:</i>	
<b>Aluminum (ADC12)</b> <i>Includes Aluminum Male Rc Bung adapter and suction pipe</i>	Rc3/8 or Rc3/4
<b>Stainless Steel (316)</b> <i>Includes Stainless Steel Male Rc Bung adapter and suction pipe</i>	Rc3/8 or Rc3/4
<b>Polypropylene (PPG)</b> <i>Includes PVC suction pipe, elbow, &amp; Bung adapter (PPG also avail.)</i> <i>Note: Yamada recommends utilizing flat-type check valves for the NDP-15 series polypropylene pumps.</i>	Rc1/2 or Rc3/4
<b>Kynar® (PVDF)</b> <i>Includes PVDF suction pipe, elbow, and Bung adapter</i>	Rc1/2
<b>Drum inlet connection</b>	2" Bung

**Drum Pumps**  
3/8", 3/4"  
Port Sizes



**FDA-Compliant Drum Pumps are available.**  
Please consult the factory for details.

# 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-grained, low-bulk density dry powders in a dust-free operation.

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

Also refer to the *Powder Pump flyer* and *Pumpable Powders data sheet*.





### Rubber Compounds

#### Neoprene (CR)

Excellent for non-corrosive abrasive applications.

Identification: Dull Black with No Dot  
Temperature Range: 0 to 70°C

#### Buna-N (NBR)

Excellent for petroleum based fluids.

Identification: Black with a Red or Pink Dot  
Temperature Range: 0 to 70°C

#### Nordel™ (EPDM)

Excellent for low temperatures, caustics and some acids.

FDA Compliant Material (must be specified).  
Identification: Black with Green Dot  
Temperature Range: 0 to 80°C

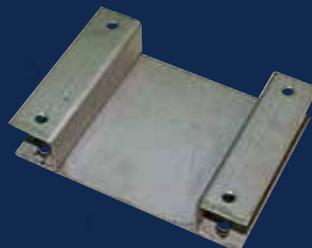
#### Viton® (FKM)

Excellent for aggressive fluids and high temperature applications.

Identification: Black with Silver or Blue Dot  
Temperature Range: 0 to 100°C



Companion Flange



Pump Bracket

# Pump Diaphragms

### What to Consider When Selecting the Proper Diaphragm Material

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

### Thermoplastic Compounds

#### Hytel® (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 to 80°C

#### Santoprene® (TPO)

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

Identification: Black Thermoplastic  
Temperature Range: 0 to 100°C

#### Teflon® (PTFE)

Excellent choice for pumping highly aggressive fluids, including solvents.

Identification: White diaphragm with No Dot  
Temperature Range: 0 to 100°C

■ Please note that excessive inlet pressure or excessive suction lift can shorten diaphragm life. Please consult Yamada for further information.

# Accessories

### Companion Flange:

Various flanges equipped with a short pipe are available for use in a line. Flanges made of SUS304 or resin (PP) according to the various standards such as JIS, DIN, ANSI and JPI.

### Pump Bracket:

A common base pump (mounting rack) is to be manufactured on orders. (Standard specifications: SUS304)

## Basic Model Variations

- Eight different sizes of pumps
- Six different types of pump bodies "wetted parts"
- Seven different types of diaphragm

This gives a total of 150 or more basic models in the Yamada Air Operated Double Diaphragm Pump range.

In addition, Yamada also manufactures the high purity DP-F series of diaphragm pumps which are used specifically for industries like semiconductor manufacturing.

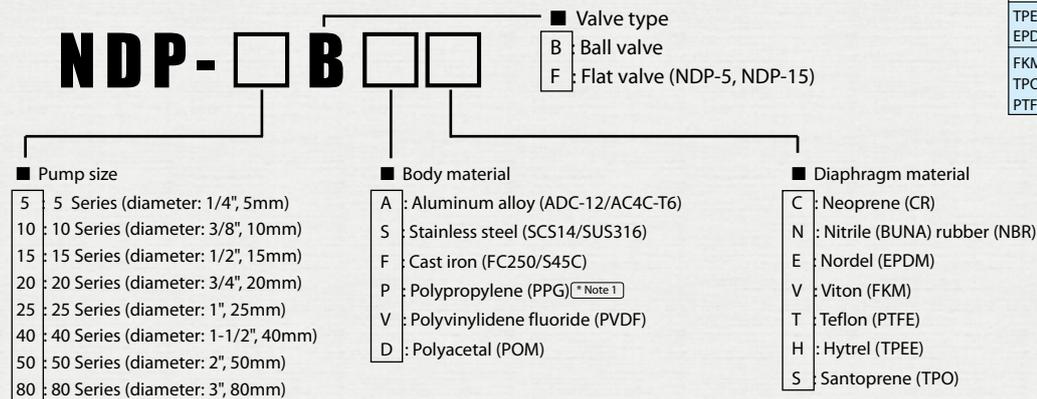
This graph gives a general indication of the applications available by using different pump models.

Diaphragm Material	C: Neoprene (CR)	N: Buna N (NBR)	E: Nordel™ (EPDM)	V: Viton® (FKM)	T: Teflon® (PTFE)	H: Hytrel® (TPEE)	S: Santoprene® (TPO)
A: Aluminum (ADC12 AC4C-T6)	Glaze Bilge waste water	Lubricant Kerosene Wax Cutting oil	Acetone solution	Ethylene alcohol Xylene Jet fuel	Latex Paint Ink	Lubricant, heavy oil, brake oil, naphtha, kerosene, mold lubricant	Acetone Bilge waste water
S: Stainless steel (SCS14 SUS316)	Ammonia water Slack lime	L.P.G Ethyl chloride Sodium peroxide	Coal slurry CMP	Methylene chloride Lactic acid Trichloroethylene	Sulfuric acid (98%) Nitric acid (less than 25%) MEK Acetone		
F: Cast iron (FC250 S45C)	Kaolin liquid Ferrite slurry Active sludge Sewage water						
P: Polypropylene (PPG) <small>*Note1</small>	Ferrous chloride Glaze	Whiskey Sodium silicate Methyl alcohol	Sulfuric acid (less than 20%)	Ethyl alcohol Perchloroethylene	Plating solution Photograph developing liquid Benzene Hydrogen peroxide		
V: Kynar® (PVDF)					Sodium hypochlorite		
D: Groundable Acetal (POM)	Methyl alcohol Sodium sulfate Ammonium sulfate	Ethyl alcohol Methyl alcohol Ammonium nitrate	Acetaldehyde Butylnitryl Chromic acid	Copper sulfate (II) Sodium sulfate Barium sulfate	Ammonium nitrate Barium sulfate Dimethyl ether	Ethyl alcohol Ammonium chloride Calcium chloride	Acetone Ammonia water Butyl acetate

## Model Indicator

■ When choosing a Yamada AODD Pump, use the below model indicator to select pump size (Diameter of fluid ports) main body material (Wetted Parts) and the type of Diaphragm.

■ If using a pump with fluid temperatures of 70°C or higher, the switching mechanism and other parts may have to be changed. Contact your closest distributor or Yamada Corporation for distributor.



### Temperature Range

Body material	Liquid temperature range
Aluminum	0 to 100°C
Cast iron	
Stainless steel	0 to 60°C
Polypropylene	

Diaphragm material	Liquid temperature range
NBR	0 to 70°C
CR	
TPEE	0 to 80°C
EPDM	
FKM	0 to 100°C
TPO	
PTFE	

\* N indication is not provided for the 10 series and F series.

\*Note 1 Glass-reinforced polypropylene