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### **NORTHFIELD**

#### PRECISION INSTRUMENT CORPORATION

4400 Austin Blvd., P.O. Box 550, Island Park, NY 11558-0550 • (516) 431-1112 • Fax: (516) 431-1928

Call Toll Free 1-800-810-2482

www.northfield.com • e-mail: sales@northfield.com

# **NORTHFIELD** the world leader in precision workholding air chucks.

Guaranteed accuracy from 0.0001'' ( $2.5\mu$ ) to 0.000010'' ( $0.25\mu$ )

#### **Applications**

- Turning, grinding, boring, milling, measuring, inspection, material handling, robotics, CNC, EDM.
- All machines: rotating, stationary, vertical, horizontal.
- Universal workholding: internal, external, thin-wall, rigid.

#### **Productivity**

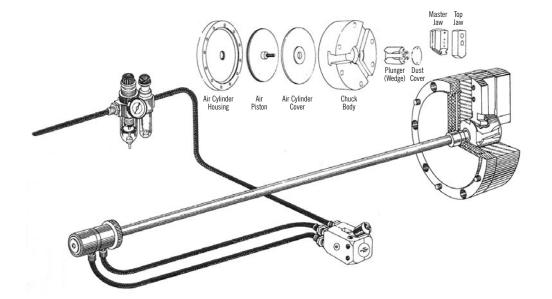
- Finger-tip control can triple output.
- Extremely simple loading/unloading.
   No indicating or adjusting. Can be used by unskilled operators.
- Automatic self-centering.
- Uniform pre-determined holding pressure.
- Adjustable jaw force for semi-rough or fragile holding.
- Automatic or manual operation.

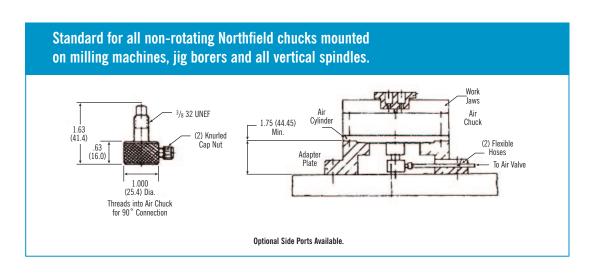
#### Reliability

- Rotary joint air bearing eliminates metal-to-metal wear for extremely long life.
- Simple, sophisticated design: only four metal-to-metal parts in chuck: hardened center wedge, three master jaws.
- Materials: class 80 ductile cast iron body; steel master jaws; hardened steel center wedge.
- Balanced to operate at high speeds.
- Built-in, self-contained air cylinder.
- · Built-in safety features.

#### The Precision Workholding Source

- Workholding leadership in accuracy, reliability, repeatability, concentricity, and productivity.
- Chuck sizes: 3" (76mm) to 18" (457mm).
- "Coolant-thru" models.
- Metric options available for most models.
- Precision top jaws shipped same day.
- Custom-designed jaw tooling service.
   Special jaws engineered and manufactured to your drawings or workpieces.
- Engineered workholding consultation services.





#### U.S. AND METRIC

All dimensions and weights listed in this catalog are in U.S. and metric equivalents.

#### ORDERING INFORMATION

To fit the custom-made air tube to your machine, we need:

- (1) I.D. of the spindle's rear. Within .002" (.051 mm).
- (2) Overall length of the spindle.
- (3) I.D. of the spindle's bore at midpoint for spindles over 25 inches (635mm) in length.

# TERMS: Net 30 days, F.O.B. Island Park, NY Accessories Available

- · Air tube assemblies.
- Manual operating valve.
- Adapter plate machined to your spindle nose configuration.
- Stationary fixture plates.
- Air pressure regulator, filter, lubricator.
- Side-mounted air ports for lower stationary chuck profile.
- Replacement top jaws (specify Model # from pages 14 and 15).
- Quick disconnects.







#### CUSTOM DESIGNED WORKHOLDING JAWS

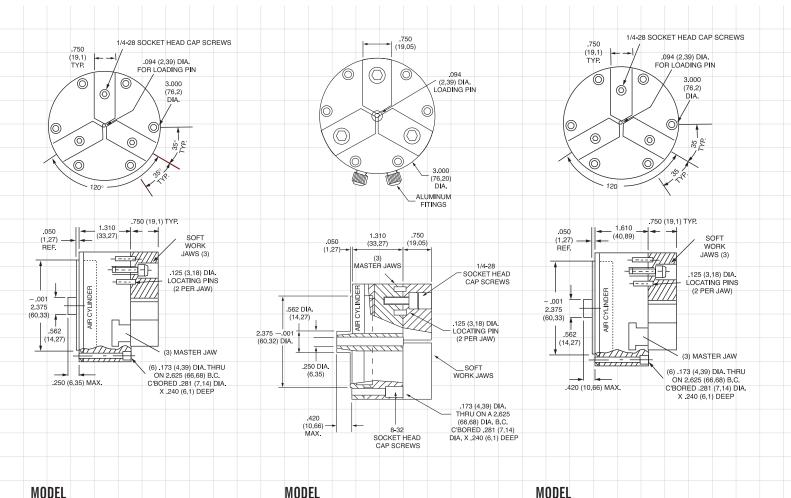
Top jaws are a critical part of a precision workholding system. The same attention must be paid to jaw design and manufacture as to chuck and machine performance if maximum accuracy is to be achieved at the workpiece. Northfield's experienced workholding engineers and specialized manufacturing facilities provide a unique capability for the design and manufacture of custom jaws.

Based on customer drawings or workpieces, Northfield designs jaws to hold the most intricate and fragile parts. A variety of materials can be used to meet your exact workholding requirements, including hardened and ground tool steel, diamond coated steel, aluminum, and DELRIN® plastic. Jaws are created for internal/external gripping, for thin-wall/rigid parts, for over-the-shoulder designs, or any other custom solution necessary to fit your specific application and to bring gauge block accuracy to your production pieces.

#### SPECIAL DEVICES FOR INCREASED PRODUCTIVITY

Quality and productivity are improved by specialized tooling produced by Northfield. Among the workholding products we design and manufacture are devices for parts ejection, coolant direction, chip blow-off, robotic loading/unloading, locating tooling, stand-offs, and chuck redesign for special applications.





#### 3 Inch • 3 Jaw (.020" opening)

(76mm)

(0.51mm opening)

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel Air Cylinder steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws

& secured by socket head cap screws

Weight

with aluminum jaws: 2 lbs. (.91 kg) with steel jaws: 21/2 lbs. (1.14 kg)

Max. Recommended RPM\* 6400 with AL-1-3-3/4 Max. Opening of Jaws .020" (0.51mm) on diameter Force per Jaw variable to 316 lbs. (144 kg)

Reneatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000010"

(10 millionths) (2.5 $\mu$ ) repeatability

Master Jaws move at perfect right angle to centerline of spindle

MODEL

#### 3 Inch • 3 Jaw (.020" opening)

(0.51mm opening)

1/4" (6.35mm) Through Hole Stationary

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel

Air Cylinder steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws & secured by socket head cap screws

with aluminum jaws: 2 lbs. (.91 kg) with steel jaws:  $2^{1/2}$  lbs. (1.14 kg)

Max. Opening of Jaws .020" (0.51mm) on diameter Force per Jaw variable to 316 lbs. (144 kg)

Repeatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000010"

(10 millionths) (2.5 $\mu$ ) repeatability

Master Jaws move at perfect right angle to centerline of spindle

#### 3 Inch • 3 Jaw (.060" opening)

(76mm)

(1.52mm opening)

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel

Air Cylinder steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws & secured by socket head cap screws

Weight

with aluminum jaws: 21/2 lbs. (1.14 kg) with steel jaws: 27/8 lbs. (1.31 kg)

Max. Recommended RPM\* 6400 with AL-1-3-3/4 Max. Opening of Jaws .060" (1.5mm) on diameter Force per Jaw variable to 316 lbs. (144 kg)

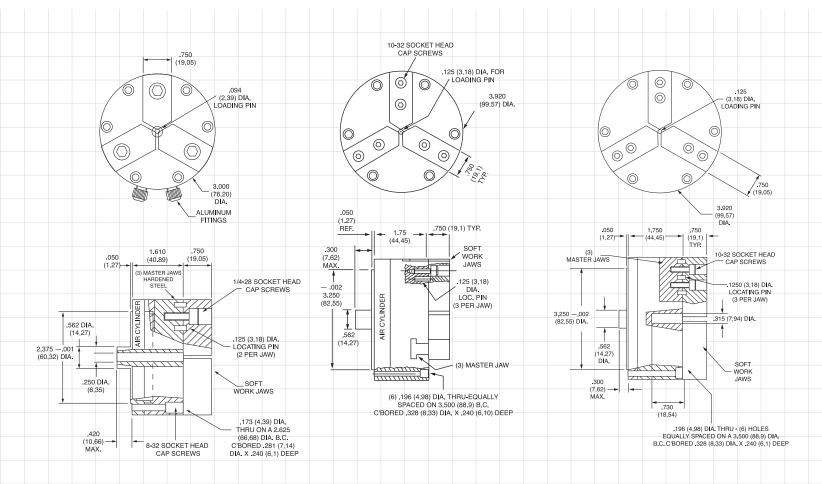
Reneatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000010"

(10 millionths) (2.5 $\mu$ ) repeatability

<sup>\*</sup>The maximum RPM of the chuck is a function of the mass and center of gravity of the jaw assembly, along with applied air pressure. Listed values are calculated using the listed jaw at the maximum chucking pressure. Using top jaws with different mass or geometry or using lower air pressures can decrease the maximum operable RPM.



MODEL

# **350THS**

#### 3 Inch • 3 Jaw (.060" opening)

(76mm) (1.52mm opening)

 $^{1}\!/_{\!4}^{"}$  (6.35mm) Through Hole Stationary

**Body** class 80 ductile cast iron

Master Jaws hardened steel

Wedge hardened steel

Air Cylinder steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws

& secured by socket head cap screws

#### Weight

with aluminum jaws:  $2^{1/2}$  lbs. (1.14 kg) with steel jaws:  $2^{7/8}$  lbs. (1.31 kg)

With steel jaws: 278 lbs. (1.51 kg)

Max. Opening of Jaws .060" (1.5mm) on diameter Force per Jaw variable to 316 lbs. (144 kg)

Repeatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

end lengths — .0001 (2.5 $\mu$ ) 1.1.K. m. Also available with .000010"

(10 millionths) (2.5 $\mu$ ) repeatability

Master Jaws move at perfect right angle to

centerline of spindle

MODEL 400

#### 4 Inch • 3 Jaw (.027" opening)

(100mm)

(0.69mm opening)

Body class 80 ductile cast iron

Master Jaws hardened steel

Wedge hardened steel

Air Cylinder steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws

& secured by socket head cap screws

#### Weight

with aluminum jaws: 4<sup>3</sup>/<sub>4</sub> lbs. (2.16 kg)

with steel jaws:  $5^{1}/_{4}$  lbs. (2.39 kg)

Max. Recommended RPM\* 6300 with AL-1-4-3/4 Max. Opening of Jaws .027" (0.69mm) on diameter

Force per Jaw variable to 625 lbs. (284 kg)

Repeatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max

end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000010"

(10 millionths) (2.5 $\mu$ ) repeatability

Master Jaws move at perfect right angle to centerline of spindle

MODEL

### 400CB

#### 4 Inch • 3 Jaw (.027" opening)

(100mm)

(0.69mm opening)

<sup>5</sup>/<sub>16</sub>" (7.94mm) **counterbore** .73" (18.54mm) **deep** 

Body class 80 ductile cast iron

Master Jaws hardened steel

Wedge hardened steel

Air Cylinder steel, o-ring sealed

Top Jaws  $\,$  located on hardened steel pins in master jaws &

secured by socket head cap screws

#### Weight

with aluminum jaws:  $4^{3}/_{4}$  lbs. (2.16 kg)

with steel jaws:  $5^{1}/_{4}$  lbs. (2.39 kg)

Max. Recommended RPM\* 6300 with AL-1-4-3/4

Max. Opening of Jaws .027" (0.69mm) on diameter Force per Jaw variable to 625 lbs. (284 kg)

#### Repeatability

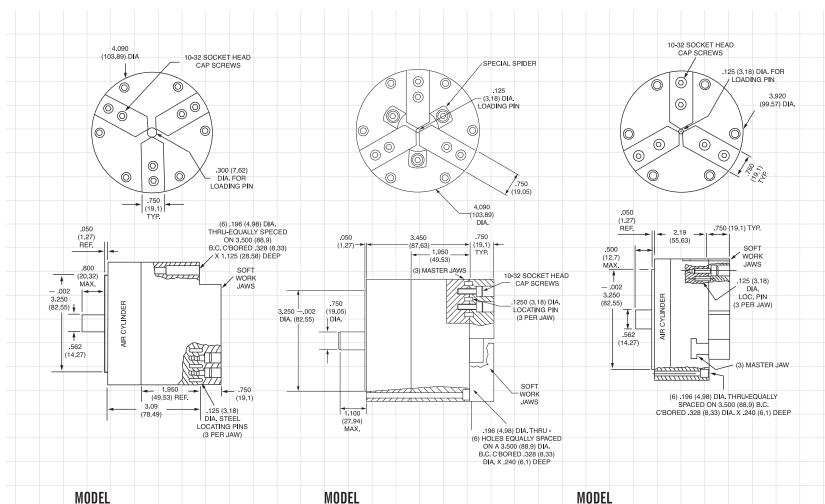
concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000010"

(10 millionths) (2.5 $\mu$ ) repeatability

<sup>\*</sup>The maximum RPM of the chuck is a function of the mass and center of gravity of the jaw assembly, along with applied air pressure. Listed values are calculated using the listed jaw at the maximum chucking pressure. Using top jaws with different mass or geometry or using lower air pressures can decrease the maximum operable RPM.





425

#### 4 Inch • 3 Jaw (.250" opening)

(104mm)

(6.35mm opening)

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel

Air Cylinder aluminum and stainless steel, o-ring sealed
Top Jaws located on hardened steel pins in master jaws &
secured by socket head cap screws

Weight

with aluminum jaws:  $7^{1}/_{2}$  lbs. (3.41 kg) with steel jaws: 8 lbs. (3.64 kg)

Max. Recommended RPM\* 5400 with AL-1-4-3/4
Max. Opening of Jaws .250" (6.35mm) on diameter
Force per Jaw variable to 645 lbs. (293 kg)
Reneatability

concentricity—.0001 (2.5 $\mu$ ) T.I.R. max

end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000025"

(25 millionths) (.64 $\mu$ ) repeatability

Master Jaws move at perfect right angle to centerline of spindle

437

#### 4 Inch • 3 Jaw (.375" opening)

(104mm)

(9.53mm opening)

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel

Air Cylinder steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws & secured by socket head cap screws

Weight

with aluminum jaws: 7<sup>1</sup>/<sub>2</sub> lbs. (3.41 kg) with steel iaws: 8 lbs. (3.64 kg)

Max. Recommended RPM\* 5400 with AL-1-4-3/4
Max. Opening of Jaws .375" (9.53mm) on diameter
Force per Jaw variable to 625 lbs. (284 kg)
Reneatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000025'

(25 millionths) (.64 $\mu$ ) repeatability

Master Jaws move at perfect right angle to centerline of spindle

450

#### 4 Inch • 3 Jaw (.100" opening)

(100mm)

(2.54mm opening)

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel

Air Cylinder aluminum and stainless steel, o-ring sealed
Top Jaws located on hardened steel pins in master jaws &
secured by socket head cap screws

Weight

with aluminum jaws: 5<sup>3</sup>/<sub>4</sub> lbs. (2.61 kg) with steel jaws: 6<sup>1</sup>/<sub>4</sub> lbs. (2.84 kg)

Max. Recommended RPM\* 6300 with AL-1-4-3/4
Max. Opening of Jaws .100" (2.54mm) on diameter
Force per Jaw variable to 625 lbs. (284 kg)

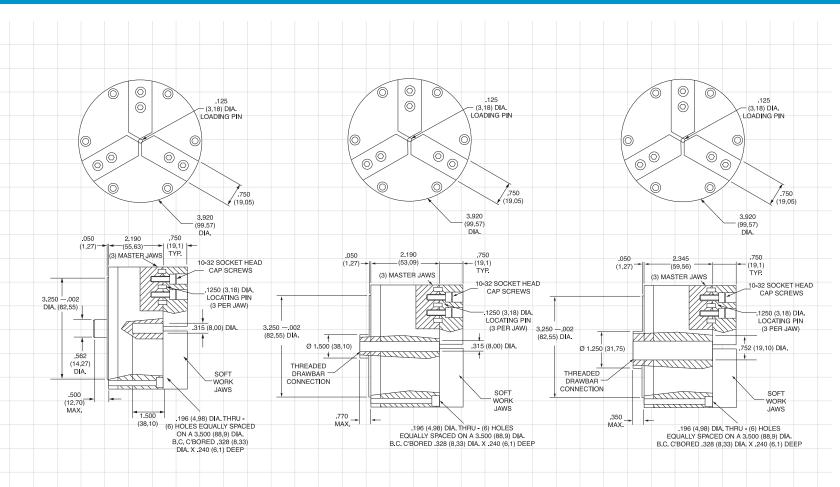
Repeatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000025'

(25 millionths) (.64 $\mu$ ) repeatability

<sup>\*</sup>The maximum RPM of the chuck is a function of the mass and center of gravity of the jaw assembly, along with applied air pressure. Listed values are calculated using the listed jaw at the maximum chucking pressure. Using top jaws with different mass or geometry or using lower air pressures can decrease the maximum operable RPM.



MODEL

### 450CB

#### 4 Inch • 3 Jaw (.100" opening)

(2.54mm opening)  $^{5}/_{16}$ " (8.00mm) counterbore  $1^{1}/_{2}$ " (38.1mm) deep

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel Air Cylinder steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws &

secured by socket head cap screws

with aluminum jaws: 53/4 lbs. (2.61 kg) with steel jaws:  $6^{1}/_{4}$  lbs. (2.84 kg)

Max. Recommended RPM\* 6300 with AL-1-4-3/4 Max. Opening of Jaws .100" (2.54mm) on diameter

Force per Jaw variable to 625 lbs. (284 kg)

#### Repeatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000025"

(25 millionths) (.64 $\mu$ ) repeatability

Master Jaws move at perfect right angle to centerline of spindle

MODEL

### 450THR516

### 4 Inch • 3 Jaw (.100" opening)

(2.54mm opening) 5/16" (8.00mm) Through Hole Rotating

Body class 80 ductile cast iron Master Jaws hardened steel

Wedge hardened steel

Air Cylinder steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws & secured by socket head cap screws

with aluminum jaws: 53/4 lbs. (2.61 kg) with steel jaws: 61/4 lbs. (2.84 kg)

Max. Recommended RPM\* 6300 with AL-1-4-3/4

Max. Opening of Jaws .100" (2.54mm) on diameter Force per Jaw variable to 625 lbs. (284 kg)

#### Repeatability

concentricity - .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000025"

(25 millionths) (.64 $\mu$ ) repeatability

Master Jaws move at perfect right angle to centerline of spindle

**Requires Rear Mounted Actuator** 

MODEL

### 450THR750

#### 4 Inch • 3 Jaw (.100" opening)

(2.54mm opening) 3/4" (19.10mm) Through Hole Rotating

Body class 80 ductile cast iron

Master Jaws hardened steel

Wedge hardened steel

Air Cylinder steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws &

secured by socket head cap screws

with aluminum jaws: 53/4 lbs. (2.61 kg) with steel jaws:  $6^{1}/_{4}$  lbs. (2.84 kg)

Max. Recommended RPM\* 6300 with AL-1-4-3/4

Max. Opening of Jaws .100" (2.54mm) on diameter Force per Jaw variable to 625 lbs. (284 kg)

#### Repeatability

concentricity - .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

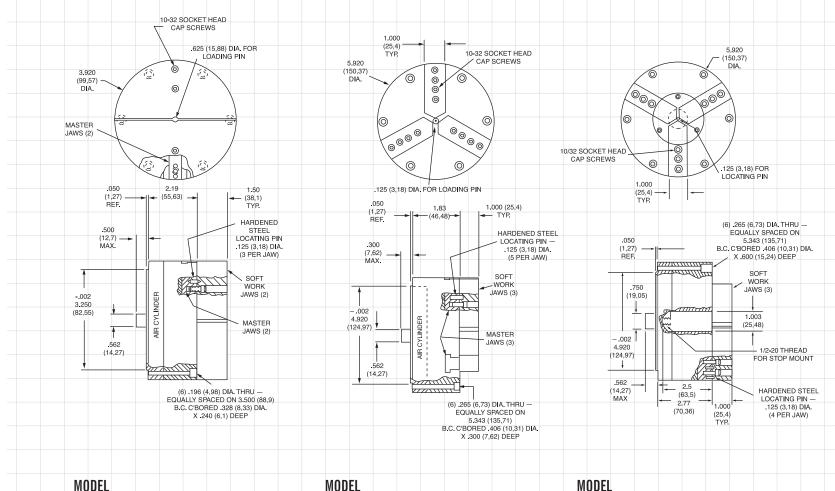
Also available with .000025"

(25 millionths) (.64 $\mu$ ) repeatability

Master Jaws move at perfect right angle to centerline of spindle

**Requires Rear Mounted Actuator** 

<sup>\*</sup>The maximum RPM of the chuck is a function of the mass and center of gravity of the jaw assembly, along with applied air pressure. Listed values are calculated using the listed jaw at the maximum chucking pressure. Using top jaws with different mass or geometry or using lower air pressures can decrease the maximum operable RPM.



MODEL

### 4 Inch • 2 Jaw (.100" opening)

(100mm)

(2.54mm opening)

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel

Air Cylinder aluminum and stainless steel, o-ring sealed, incorporated into the chuck body

**Top Jaws** located on hardened steel pins in master jaws & secured by socket head cap screws

#### Weigh

with aluminum jaws: 6<sup>1</sup>/<sub>3</sub> lbs. (2.88 kg) with steel jaws: 7<sup>1</sup>/<sub>2</sub> lbs. (3.41 kg) Max. Recommended RPM\* 6300 with AL-1-4-3/4

Max. Opening of Jaws .100" (2.54mm) on diameter Force per Jaw variable to 938 lbs. (426 kg)

Repeatability

concentricity — .0001 (2.5μ) T.I.R. max end lengths — .0001 (2.5μ) T.I.R. max Master Jaws move at perfect right angle to centerline of spindle 600

#### 6 Inch • 3 Jaw (.027" opening)

(150mm)

(0.69mm opening)

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel

Air Cylinder aluminum, o-ring sealed, incorporated into the chuck body

Top Jaws located on hardened steel pins in master jaws & secured by socket head cap screws

#### Weight

with aluminum jaws:  $11^{1}/_{3}$  lbs. (5.15 kg) with steel jaws: 12 lbs. (5.45 kg)

Max. Recommended RPM\* 4700 with AL-1-6-1 Max. Opening of Jaws .027" (0.69mm) on diameter Force per Jaw variable to 988 lbs. (449 kg)

Repeatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000025"

(25 millionths) (.64 $\mu$ ) repeatability

Master Jaws move at perfect right angle to centerline of spindle

620CB

#### 6 Inch • 3 Jaw (.100" opening)

(150mm)

(2.54mm opening)

1" (25.48mm) **counterbore** 2<sup>1</sup>/<sub>2</sub>" (63.5mm) **deep** 

Body class 80 ductile cast iron

Master Jaws hardened steel

Wedge hardened steel

Air Cylinder stainless steel, o-ring sealed

**Top Jaws** located on hardened steel pins in master jaws & secured by socket head cap screws

#### Weight

with aluminum jaws:  $16^{1}/4$  lbs. (7.39 kg) with steel jaws: 17 lbs. (7.73 kg)

Max. Recommended RPM\* 5500 with AL-1-6-1 Max. Opening of Jaws .100" (2.54mm) on diameter

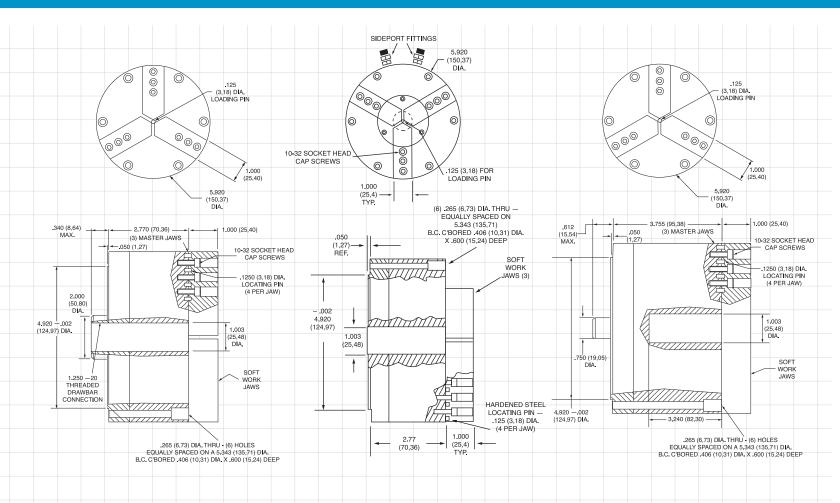
Force per Jaw variable to 1200 lbs. (545 kg) Repeatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000025"

(25 millionths) (.64 $\mu$ ) repeatability

<sup>\*</sup>The maximum RPM of the chuck is a function of the mass and center of gravity of the jaw assembly, along with applied air pressure. Listed values are calculated using the listed jaw at the maximum chucking pressure. Using top jaws with different mass or geometry or using lower air pressures can decrease the maximum operable RPM.



MODEL

# **620THR**

#### 6 Inch • 3 Jaw (.100" opening)

(2.54mm opening)

1" (25.48mm) Through Hole Rotating

Body class 80 ductile cast iron

Master Jaws hardened steel

Wedge hardened steel

Air Cylinder steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws &

secured by socket head cap screws

with aluminum jaws: 161/4 lbs. (7.39 kg) with steel jaws: 17 lbs. (7.73 kg)

Max. Recommended RPM\* 5500 with AL-1-6-1

Max. Opening of Jaws .100" (2.54mm) on diameter

Force per Jaw variable to 1200 lbs. (545 kg)

#### Repeatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000025"

(25 millionths) (.64 $\mu$ ) repeatability

Master Jaws move at perfect right angle to

centerline of spindle

**Requires Rear Mounted Actuator** 

MODEL

#### 6 Inch • 3 Jaw (.100" opening)

(2.54mm opening)

1" (25.48mm) Through Hole Stationary

Body class 80 ductile cast iron

Master Jaws hardened steel

Wedge hardened steel

Air Cylinder aluminum and stainless steel, o-ring sealed Top Jaws located on hardened steel pins in master jaws &

secured by socket head cap screws

#### Weight

with aluminum jaws:  $16^{1}/_{4}$  lbs. (7.39 kg)

with steel jaws: 17 lbs. (7.73 kg)

Max. Opening of Jaws .100" (2.54mm) on diameter

Force per Jaw variable to 1200 lbs. (545 kg)

#### Repeatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max

end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000025'

(25 millionths) (.64 $\mu$ ) repeatability

Master Jaws move at perfect right angle to centerline of spindle

with aluminum jaws: 161/4 lbs. (7.39 kg)

secured by socket head cap screws

6 Inch • 3 Jaw (.250" opening)

1" (25.48mm) **counterbore** 3.24" (82.3mm) **deep** 

Top Jaws located on hardened steel pins in master jaws &

(6.35mm opening)

with steel jaws: 17 lbs. (7.73 kg)

Max. Recommended RPM\* 5500 with AL-1-6-1

Max. Opening of Jaws .250" (6.35mm) on diameter Force per Jaw variable to 1200 lbs. (545 kg)

#### Repeatability

MODEL

**625CB** 

Body class 80 ductile cast iron

Air Cylinder steel, o-ring sealed

Master Jaws hardened steel

Wedge hardened steel

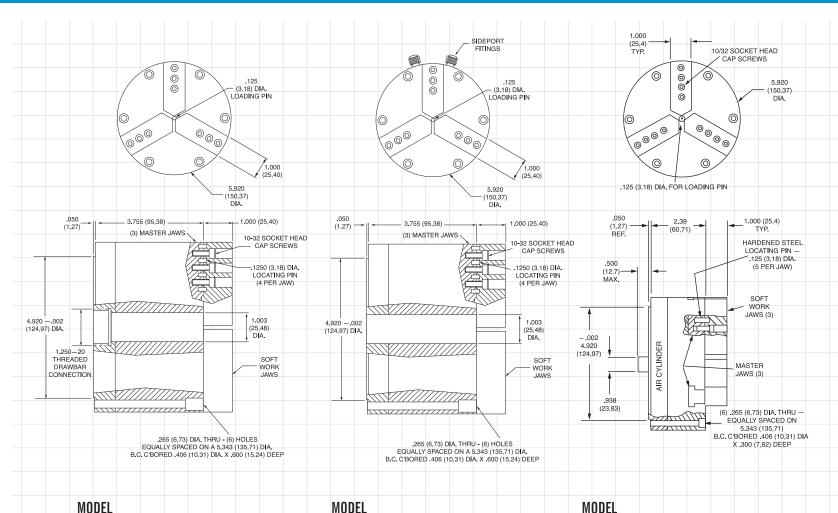
concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000025"

(25 millionths) (.64 $\mu$ ) repeatability

<sup>\*</sup>The maximum RPM of the chuck is a function of the mass and center of gravity of the jaw assembly, along with applied air pressure. Listed values are calculated using the listed jaw at the maximum chucking pressure. Using top jaws with different mass or geometry or using lower air pressures can decrease the maximum operable RPM.





MODEL

### **625THR**

#### 6 Inch • 3 Jaw (.250" opening)

(6.35mm opening) 1" (25.48mm) Through Hole Rotating

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel

Air Cylinder steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws & secured by socket head cap screws

with aluminum jaws: 161/4 lbs. (7.39 kg) with steel jaws: 17 lbs. (7.73 kg) Max. Recommended RPM\* 4200 with AL-1-6-1

Max. Opening of Jaws .250" (6.35mm) on diameter Force per Jaw variable to 1200 lbs. (545 kg)

Repeatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000025"

(25 millionths) (.64 $\mu$ ) repeatability

Master Jaws move at perfect right angle to centerline of spindle

**Requires Rear Mounted Actuator** 

MODEL

### **625THS**

#### 6 Inch • 3 Jaw (.250" opening)

(6.35mm opening) 1" (25.48mm) Through Hole Stationary

Body class 80 ductile cast iron Master Jaws hardened steel

Wedge hardened steel Air Cylinder steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws & secured by socket head cap screws

with aluminum jaws: 161/4 lbs. (7.39 kg) with steel jaws: 17 lbs. (7.73 kg)

Max. Opening of Jaws .250" (6.35mm) on diameter Force per Jaw variable to 1200 lbs. (545 kg)

Repeatability

concentricity—.0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000025'

(25 millionths) (.64 $\mu$ ) repeatability

Master Jaws move at perfect right angle to centerline of spindle

#### 6 Inch • 3 Jaw (.100" opening)

(150mm)

(2.54mm opening)

Body class 80 ductile cast iron Master Jaws hardened steel

Wedge hardened steel

Air Cylinder aluminum and stainless steel, o-ring sealed Top Jaws located on hardened steel pins in master jaws & secured by socket head cap screws

Weight

with aluminum jaws: 141/8 lbs. (6.42 kg) with steel iaws:  $14^{7}/8$  lbs. (6.76 kg) Max. Recommended RPM\* 4700 with AL-1-6-1

Max. Opening of Jaws .100" (2.54mm) on diameter Force per Jaw variable to 988 lbs. (449 kg)

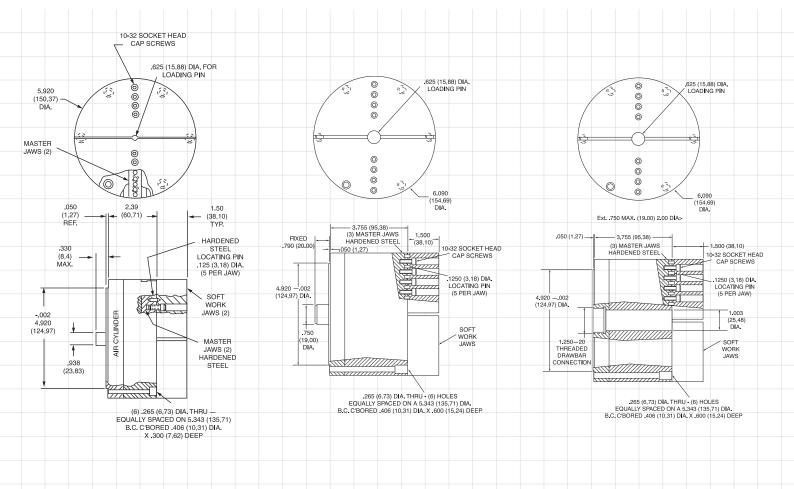
Reneatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000025'

(25 millionths) (.64 $\mu$ ) repeatability

<sup>\*</sup>The maximum RPM of the chuck is a function of the mass and center of gravity of the jaw assembly, along with applied air pressure. Listed values are calculated using the listed jaw at the maximum chucking pressure. Using top jaws with different mass or geometry or using lower air pressures can decrease the maximum operable RPM.



MODEL

#### 6 Inch • 2 Jaw (.100" opening)

(150mm)

(2.54mm opening)

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel

Air Cylinder aluminum and stainless steel, o-ring sealed Top Jaws located on hardened steel pins in master jaws & secured by socket head cap screws

Weight

with aluminum jaws: 14 lbs. (6.36 kg) with steel jaws: 19 lbs. (8.64 kg) Max. Recommended RPM\* 5700 with AL-1-6-1 Max. Opening of Jaws .100" (2.54mm) on diameter Force per Jaw variable to 1482 lbs. (674 kg) Repeatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max Master Jaws move at perfect right angle to centerline of spindle

MODEL

### 6 Inch • 2 Jaw (.250" opening)

(155mm)

(6.35mm opening)

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel

Air Cylinder steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws & secured by socket head cap screws

Weight

with aluminum jaws: 14 lbs. (6.36 kg) with steel jaws: 19 lbs. (8.64 kg)

Max. Recommended RPM\* 5700 with AL-1-6-1 Max. Opening of Jaws .250" (6.35mm) on diameter Force per Jaw variable to 1482 lbs. (674 kg)

Reneatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Master Jaws move at perfect right angle to

centerline of spindle

#### MODEL

### 675THR

#### 6 Inch • 2 Jaw (.250" opening)

(6.35mm opening)

1" (25.48mm) Through Hole Rotating

Body class 80 ductile cast iron Master Jaws hardened steel

Wedge hardened steel

Air Cylinder steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws & secured by socket head cap screws

with aluminum jaws: 14 lbs. (6.36 kg) with steel jaws: 19 lbs. (8.64 kg)

Max. Recommended RPM\* 5700 with AL-1-6-1 Max. Opening of Jaws .250" (6.35mm) on diameter Force per Jaw variable to 1482 lbs. (674 kg)

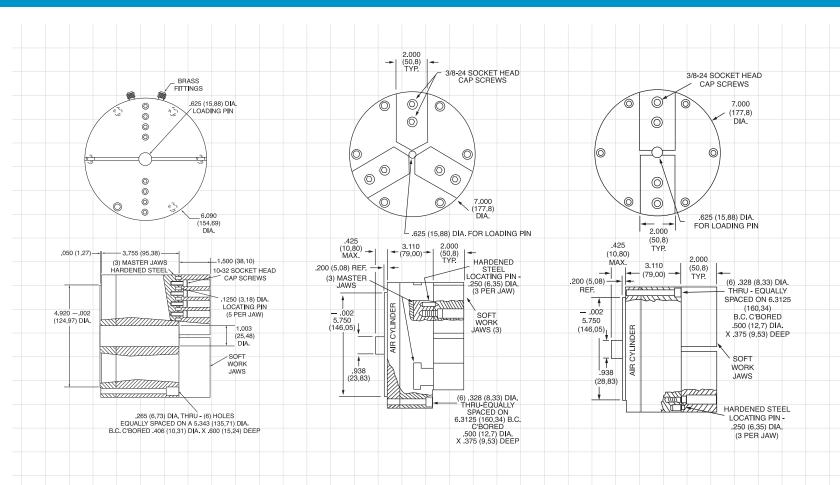
Repeatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Master Jaws move at perfect right angle to centerline of spindle

**Requires Rear Mounted Actuator** 

<sup>\*</sup>The maximum RPM of the chuck is a function of the mass and center of gravity of the jaw assembly, along with applied air pressure. Listed values are calculated using the listed jaw at the maximum chucking pressure. Using top jaws with different mass or geometry or using lower air pressures can decrease the maximum operable RPM.



MODEL

# **675THS**

### 6 Inch • 2 Jaw (.250" opening)

(155mm) (6.35mm opening) 1" (25.48mm) **Through Hole Stationary** 

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel Air Cylinder steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws & secured by socket head cap screws

#### Weigh

with aluminum jaws: 14 lbs. (6.36 kg)
with steel jaws: 19 lbs. (8.64 kg)

Max. Opening of Jaws .250" (6.35mm) on diameter

Force per Jaw variable to 1482 lbs. (674 kg)

Repeatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max Master Jaws move at perfect right angle to centerline of spindle

MODEL

### 700

### 7 Inch • 3 Jaw (.100" opening)

(178mm)

(2.54mm opening)

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel

Air Cylinder aluminum and stainless steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws &
secured by socket head cap screws

#### Weight

with aluminum jaws: 32½ lbs. (14.66 kg)
with steel jaws: 39½ lbs. (18.07 kg)

Max. Recommended RPM\* 3000 with AL-1-7-2

Max. Opening of Jaws .100" (2.54mm) on diameter

Force per Jaw variable to 1667 lbs. (758 kg)

Repeatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max so available with .00025"

Also available with .000025" (25 millionths) (.64 $\mu$ ) repeatability

Master Jaws move at perfect right angle to centerline of spindle

MODEL

### 7 Inch • 2 Jaw (.100" opening)

(178mm)

(2.54mm opening)

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel

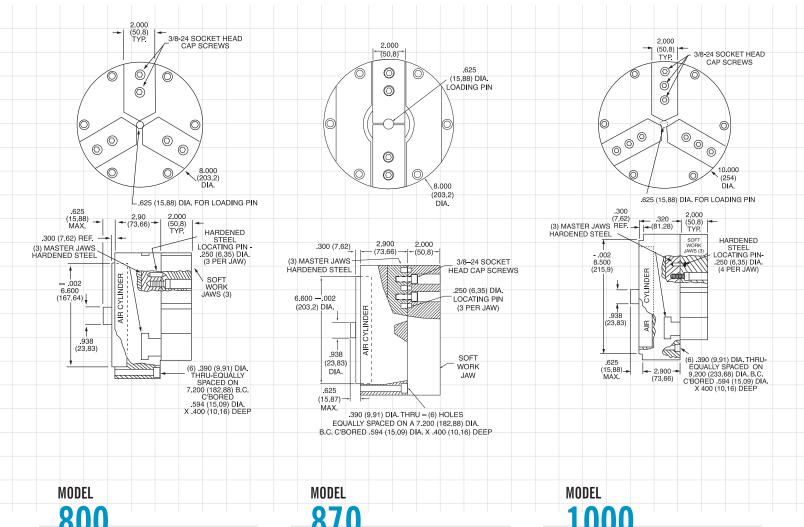
Air Cylinder aluminum and stainless steel, o-ring sealed
Top Jaws jig bored & located on hardened steel pins in
master jaws & secured by socket head cap screws

Weight

with aluminum jaws: 30<sup>1</sup>/4 lbs. (13.75 kg) with steel jaws: 35<sup>1</sup>/<sub>2</sub> lbs. (16.14 kg) Max. Recommended RPM\* 3000 with AL-1-7-2 Max. Opening of Jaws .100" (2.54mm) on diameter Force per Jaw variable to 2500 lbs. (1136 kg) Reneatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max Master Jaws move at perfect right angle to centerline of spindle

\*The maximum RPM of the chuck is a function of the mass and center of gravity of the jaw assembly, along with applied air pressure. Listed values are calculated using the listed jaw at the maximum chucking pressure. Using top jaws with different mass or geometry or using lower air pressures can decrease the maximum operable RPM.



### 8 Inch • 3 Jaw (.100" opening)

(203mm)

(2.54mm opening)

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel

Air Cylinder aluminum and stainless steel, o-ring sealed, incorporated into the chuck body

Top Jaws located on hardened steel pins in master jaws & secured by socket head cap screws

#### Weight

with aluminum jaws: 38 lbs. (17.27 kg) with steel jaws: 47 lbs. (21.36 kg)

Max. Recommended RPM\* 2300 with AL-1-8-2 Max. Opening of Jaws .100" (2.54mm) on diameter

Force per Jaw variable to 1667 lbs. (758 kg) Repeatability

concentricity—.0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000025"

(25 millionths) (.64 $\mu$ ) repeatability

Master Jaws move at perfect right angle to centerline of spindle

### 8 Inch • 2 Jaw (.100" opening)

(203mm)

(2.54mm opening)

Body class 80 ductile cast iron Master Jaws hardened steel

Wedge hardened steel

Air Cylinder steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws & secured by socket head cap screws

#### Weight

with aluminum jaws: 36 lbs. (16.36 kg) with steel jaws: 45 lbs. (20.45 kg)

Max. Recommended RPM\* 2300 with AL-1-8-2 Max. Opening of Jaws .100" (2.54mm) on diameter

Force per Jaw variable to 2500 lbs. (1136 kg) Reneatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Master Jaws move at perfect right angle to centerline of spindle

#### 10 Inch • 3 Jaw (.100" opening)

(254mm)

(2.54mm opening)

Body class 80 ductile cast iron

Master Jaws hardened steel

Wedge hardened steel

Air Cylinder aluminum and stainless steel. o-ring sealed, incorporated into the body

Top Jaws located on hardened steel pins in master jaws & secured by socket head cap screws

#### Weight

with aluminum jaws: 60 lbs. (27.27 kg) with steel jaws: 70 lbs. (31.82 kg)

Max. Recommended RPM\* 2000 with AL-1-10-2

Max. Opening of Jaws .100" (2.54mm) on diameter Force per Jaw variable to 2660 lbs. (1206 kg)

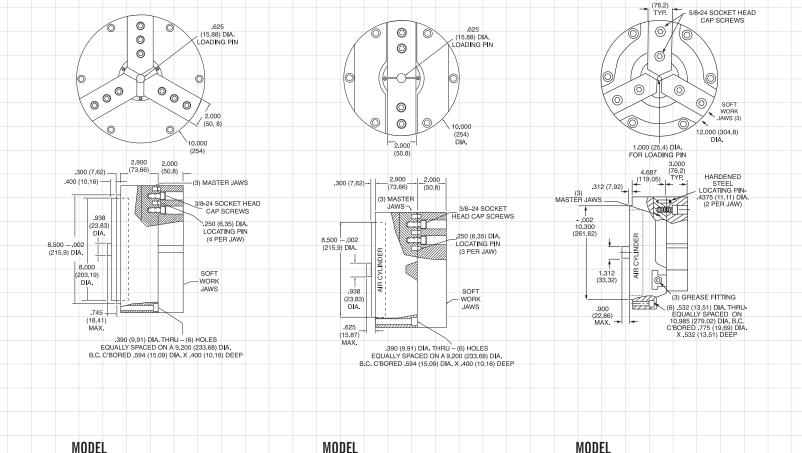
#### Repeatability

concentricity—.0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000025'

(25 millionths) (.64 $\mu$ ) repeatability

<sup>\*</sup>The maximum RPM of the chuck is a function of the mass and center of gravity of the jaw assembly, along with applied air pressure. Listed values are calculated using the listed jaw at the maximum chucking pressure. Using top jaws with different mass or geometry or using lower air pressures can decrease the maximum operable RPM.



#### 10 Inch • 3 Jaw (.250" opening)

(254mm)

(6.35mm opening)

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel Air Cylinder steel, o-ring sealed

Top Jaws located on hardened steel pins in master jaws & secured by socket head cap screws

#### Weight

with aluminum jaws: 60 lbs. (27.27 kg) with steel jaws: 70 lbs. (31.82 kg) Max. Recommended RPM\* 2000 with AL-1-10-2 Max. Opening of Jaws .250" (6.35mm) on diameter Force per Jaw variable to 2658 lbs. (1208 kg)

Reneatability concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000025"

(25 millionths) (.64 $\mu$ ) repeatability

Master Jaws move at perfect right angle to centerline of spindle

#### 10 Inch • 2 Jaw (.100" opening)

(254mm)

(2.54mm opening)

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel

Air Cylinder aluminum, o-ring sealed

Top Jaws located on hardened steel pins in master jaws & secured by socket head cap screws

#### Weight

with aluminum jaws: 60 lbs. (27.27 kg) with steel jaws: 70 lbs. (31.82 kg) Max. Recommended RPM\* 2000 with AL-1-10-2 Max. Opening of Jaws .100" (2.54mm) on diameter

Force per Jaw variable to 3990 lbs. (1810 kg) Reneatability

concentricity — .0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Master Jaws move at perfect right angle to centerline of spindle

MODEL

12 Inch • 3 Jaw (.375" opening)

3.000

(305mm)

(9.53mm opening)

Body class 80 ductile cast iron Master Jaws hardened steel Wedge hardened steel

Air Cylinder aluminum and stainless steel, o-ring sealed, incorporated into the chuck body

Top Jaws jig bored & located on hardened steel pins in master jaws & secured by socket head cap screws

#### Weight

with aluminum jaws: 100 lbs. (45.45 kg) with steel jaws: 123 lbs. (55.91 kg)

Max. Recommended RPM\* 1600 with AL-1-12-3 Max. Opening of Jaws .375" (9.53mm) on diameter Force per Jaw variable to 3143 lbs. (1429 kg)

Repeatability

concentricity—.0001 (2.5 $\mu$ ) T.I.R. max end lengths — .0001 (2.5 $\mu$ ) T.I.R. max

Also available with .000025'

(25 millionths) (.64 $\mu$ ) repeatability

<sup>\*</sup>The maximum RPM of the chuck is a function of the mass and center of gravity of the jaw assembly, along with applied air pressure. Listed values are calculated using the listed jaw at the maximum chucking pressure. Using top jaws with different mass or geometry or using lower air pressures can decrease the maximum operable RPM.

# Standard Jaws for Series 300 Chucks

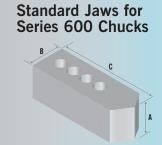
Material	Order by Jaw Number	Jaw Dimensions Inches (mm)			Chucking External	Range Internal
		A	В	C	Inches (mm)	Inches (mm)
ALUMINUM	AL-1-3-3/4	3/4 (19,05)				
ALUMINUM	AL-1-3-1	1.0 (25,40)				
ALUMINUM	AL-1-3-1½	1½ (38,10)	.750	1.453	.094-2.830	.250-2.830
MILD STEEL	ST-1-3-3/4	3/4 (19,05)	(19,05)	(36,91)	(2,39-71,88)	(6,35-71,88)
MILD STEEL	ST-1-3-1	1.0 (25,40)				
MILD STEEL	ST-1-3-1½	1½ (38,10)				
MILD STEEL	ST-1-3-2	2.0 (50,80)				

**SERIES 400** 



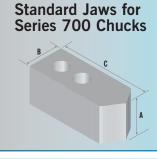
Material	Order by Jaw Number	Jaw Dimensions Inches (mm)			Chucking External	Range Internal
		A	В	С	Inches (mm)	Inches (mm)
ALUMINUM	AL-1-4-3/4	3/4 (19,05)				
ALUMINUM	AL-1-4-1½	1½ (38,10)				
ALUMINUM	AL-1-4-3	3.0 (76,20)	.750	1.895	.130-3.750	.250-3.750
MILD STEEL	ST-1-4-3/4	3/4 (19,05)	(19,05)	(48,13)	(3,30-95,25)	(6,35-95,25)
MILD STEEL	ST-1-4-1½	1½ (38,10)				
MILD STEEL	ST-1-4-2	2.0 (50,80)				
MILD STEEL	ST-1-4-3	3.0 (76,20)	7			

**SERIES 600** 



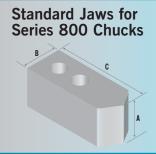
Material	Order by Jaw Number	Jaw Dimensions Inches (mm)			Chucking External	Range Internal
		A	В	C	Inches (mm)	Inches (mm)
ALUMINUM	AL-1-6-1	1.0 (25,40)				
ALUMINUM	AL-1-6-1½	1½ (38,10)				
ALUMINUM	AL-1-6-3	3.0 (76,20)	1.0	2.895	.130-5.750	.250-5.750
MILD STEEL	ST-1-6-1	1.0 (25,40)	(25,40)	(73,53)	(3,30-146,05)	(6,35-146,05)
MILD STEEL	ST-1-6-1½	1½ (38,10)				
MILD STEEL	ST-1-6-2	2.0 (50,80)				
MILD STEEL	ST-1-6-3	3.0 (76,20)				

SERIES 700



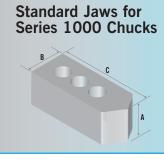
Material	Order by Jaw Number	Jaw Dimensions Inches (mm)			Chucking External	Range Internal
		Α	В	C	Inches (mm)	Inches (mm)
ALUMINUM	AL-1-7-2	2.0 (50,80)				
ALUMINUM	AL-1-7-3	3.0 (76,20)				
ALUMINUM	AL-1-7-4	4.0 (101,60)	2.0	3.187	.750-6.750	1.00-6.750
MILD STEEL	ST-1-7-2	2.0 (50,80)	(50,80)	(80,95)	(19,05-171,45)	(25,40-171,45)
MILD STEEL	ST-1-7-3	3.0 (76,20)				
MILD STEEL	ST-1-7-4	4.0 (101,60)	1			

**SERIES 800** 



Material	Order by Jaw Number	Jaw Dimensions Inches (mm)			Chucking External	Range Internal
		Α	В	C	Inches (mm)	Inches (mm)
ALUMINUM	AL-1-8-2	2.0 (50,80)				
ALUMINUM	AL-1-8-3	3.0 (76,20)				
ALUMINUM	AL-1-8-4	4.0 (101,60)	2.0	3.687	.750-7.750	1.00-7.750
MILD STEEL	ST-1-8-2	2.0 (50,80)	(50,80)	(93,65)	(19,05-196,85)	(25,40-196,85)
MILD STEEL	ST-1-8-3	3.0 (76,20)	1			
MILD STEEL	ST-1-8-4	4.0 (101,60)	1			

**SERIES 1000** 



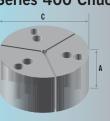
Material	Order by Jaw Number	Jaw Dimensions Inches (mm)			Chucking External	Range Internal
		A	В	C	Inches (mm)	Inches (mm)
ALUMINUM	AL-1-10-2	2.0 (50,80)				
ALUMINUM	AL-1-10-3	3.0 (76,20)				
ALUMINUM	AL-1-10-4	4.0 (101,60)	2.0	4.687	.750-9.750	1.00-9.750
MILD STEEL	ST-1-10-2	2.0 (50,80)	(50,80)	(119,05)	(19,05-247,65)	(25,40-247,65)
MILD STEEL	ST-1-10-3	3.0 (76,20)				
MILD STEEL	ST-1-10-4	4.0 (101,60)	1			

Full Circle J Series 300	
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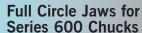
Material	Order by Jaw Number	Jaw Dimo Inches (		Chucking Range External Interna	
		Α	С	Inches (mm)	Inches (mm)
ALUMINUM	AL-3-3-3/4	3/4 (19,05)			
ALUMINUM	AL-3-3-1½	1½ (38,10)	3.0	.130-2.830	.250-2.830
MILD STEEL	ST-3-3-3/4	3/4 (19,05)	(76,20)	(3,30-71,88)	(6,35-71,88
MILD STEEL	ST-3-3-1½	1½ (38,10)			
MILD STEEL	ST-3-3-2	2.0 (50,80)			

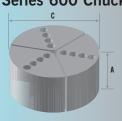
Material	Order by	Jaw Dime		Chucking	
	Jaw Number	Inches (	mm)	External	Internal
		A	C	Inches (mm)	Inches (mm)
ALUMINUM	AL-3-4-1	1.0 (25,40)			
ALUMINUM	AL-3-4-2	2.0 (50,80)			
ALUMINUM	AL-3-4-3	3.0 (76,20)	3.920	.750-3.750	.750-3.750
MILD STEEL	ST-3-4-3/4	3/4 (19,05)	(99,57)	(19,05-95,25)	(19,05-95,25)
MILD STEEL	ST-3-4-1½	1½ (38,10)			
MILD STEEL	ST-3-4-2	2.0 (50,80)			
MILD STEEL	ST-3-4-3	3.0 (76,20)			

		Jaws f	
	C		
-			



Material	Order by	Jaw Dimensions		Chucking	Range
	Jaw Number	Inches	(mm)	External	Internal
		A	С	Inches (mm)	Inches (mm)
ALUMINUM	AL-3-6-1	1.0 (25,40)			
ALUMINUM	AL-3-6-2	2.0 (50,80)			
ALUMINUM	AL-3-6-3	3.0 (76,20)	5.920	.750-5.750	.750-5.750
MILD STEEL	ST-3-6- <sup>3</sup> / <sub>4</sub>	3/4 (19,05)	(150,37)	(19,05-146,05)	(19,05-146,05)
MILD STEEL	ST-3-6-1½	1½ (38,10)			
MILD STEEL	ST-3-6-2	2.0 (50,80)			
MILD STEEL	ST-3-6-3	3.0 (76,20)			

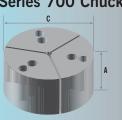




SERIES 600

Material	Order by	Jaw Dimensions Inches (mm)		Chucking Range External Internal	
material	Jaw Number				
		Α	C	Inches (mm)	Inches (mm)
ALUMINUM	AL-3-7-2	2.0 (50,80)			
ALUMINUM	AL-3-7-3	3.0 (76,20)			
ALUMINUM	AL-3-7-4	4.0 (101,60)	7.0	.750-6.750	1.00-6.750
MILD STEEL	ST-3-7-2	2.0 (50,80)	(177,80)	(19,05-171,45)	(25,40-171,45)
MILD STEEL	ST-3-7-3	3.0 (76,20)			
MILD STEEL	ST-3-7-4	4.0 (101.60)			

Full Ci	ircle J	laws	for
<b>Series</b>	700	Chu	cks



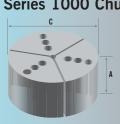
Material	Order by	Jaw Dimensions		Chucking Range	
	Jaw Number	Inches	(mm)	External	Internal Inches (mm)
		A	С	Inches (mm)	
ALUMINUM	AL-3-8-2	2.0 (50,80)			
ALUMINUM	AL-3-8-3	3.0 (76,20)			
ALUMINUM	AL-3-8-4	4.0 (101,60)	8.0	.750-7.750	1.00-7.750
MILD STEEL	ST-3-8-2	2.0 (50,80)	(203,20)	(19,05-196,85)	(25,40-196,85)
MILD STEEL	ST-3-8-3	3.0 (76,20)			
MILD STEEL	ST-3-8-4	4.0 (101,60)			

# Full Circle Jaws for Series 800 Chucks



Material	Order by	Jaw Dimensions		Chucking Range	
	Jaw Number Inches		mm)	External	Internal
		Α	С	Inches (mm)	Inches (mm)
ALUMINUM	AL-3-10-2	2.0 (50,80)			
ALUMINUM	AL-3-10-3	3.0 (76,20)			
ALUMINUM	AL-3-10-4	4.0 (101,60)	10.00	.750-9.750	1.00-9.750
MILD STEEL	ST-3-10-2	2.0 (50,80)	(254,0)	(19,05-247,65)	(25,40-247,6
MILD STEEL	ST-3-10-3	3.0 (76,20)			
MILD STEEL	ST-3-10-4	4.0 (101,60)			

# Full Circle Jaws for Series 1000 Chucks



#### WARRANTY

Northfield Precision Instrument Corp. warrants its Air Chucks and appurtenances thereto to be free from defective material and workmanship. The chucks are guaranteed to perform as represented herein provided all installation instructions have been followed and chuck is mounted and prepared properly. This guarantee will prevail for a period of 90 days from date of delivery during which time Northfield will repair or replace any defective parts at no cost to purchaser if the chuck is returned to the factory.

Northfield Precision Instrument Corp. 4400 Austin Blvd. P.O. Box 550 Island Park, NY 11558

**T:** [516] 431.1112 **F:** [516] 431.1928



### Precision Air Chucks

Northfield Precision works closely with a worldwide network of representatives and distributors to provide sales and service for the most accurate line of air chucks in the world. This network is supported by factory engineers, full documentation and a national advertising program.

In addition, Northfield is continually developing new products, custom designed to solve the most difficult workholding problems. Northfield supplies precision products to the automotive, aerospace, electrical/electronic, medical/optical, machine tool, plastics/ceramics and appliance industries.

Sealed chuck for

lens grinding

Pull-down fixture for high speed turning





Swivel action pull-down

fixture for hard turning





Draw-bar cam action pull-down chuck for hard turning

High-speed balancing chuck for CV joints



ID gripping chuck for OD turning

2-jaw offset chuck with dual locators

> Northfield provides special accessories such as: automatic lubrication; air or spring ejectors; parts locators; coolant redirection; rubber covers; multiple chuck pallets; metric chucks; quick-change top jaws. Northfield engineers provide custom workholding solutions for any part that may seem to be impossible to hold.

### ORTHFIE

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