



Precision Diaphragm Chucks

NORTHFIELD

NORTHFIELD

Precision Air Chuck Guarantee - Accuracy within Millionths

NORTHFIELD... THE WORLD LEADER IN PRECISION DIAPHRAGM AIR CHUCKS

GUARANTEED ACCURACY

- Radial - .000020 inch T.I.R.
- Axial - .000010 inch T.I.R.

Advantages of a diaphragm chuck:

- Completely sealed from harsh environments
- Jaw motion provides pullback feature
- No metal-to-metal moving parts
- Counterbalanced for higher operating speeds
- No lubrication required, maintenance free
- Uniform, adjustable clamping pressures

Applications:

- Grinding, turning, boring, milling, measuring, inspection, material handling, robotics, CNC, EDM
- All Machines: Rotating, stationary, vertical, horizontal
- Universal workholding: external, thin-wall, rigid

Productivity

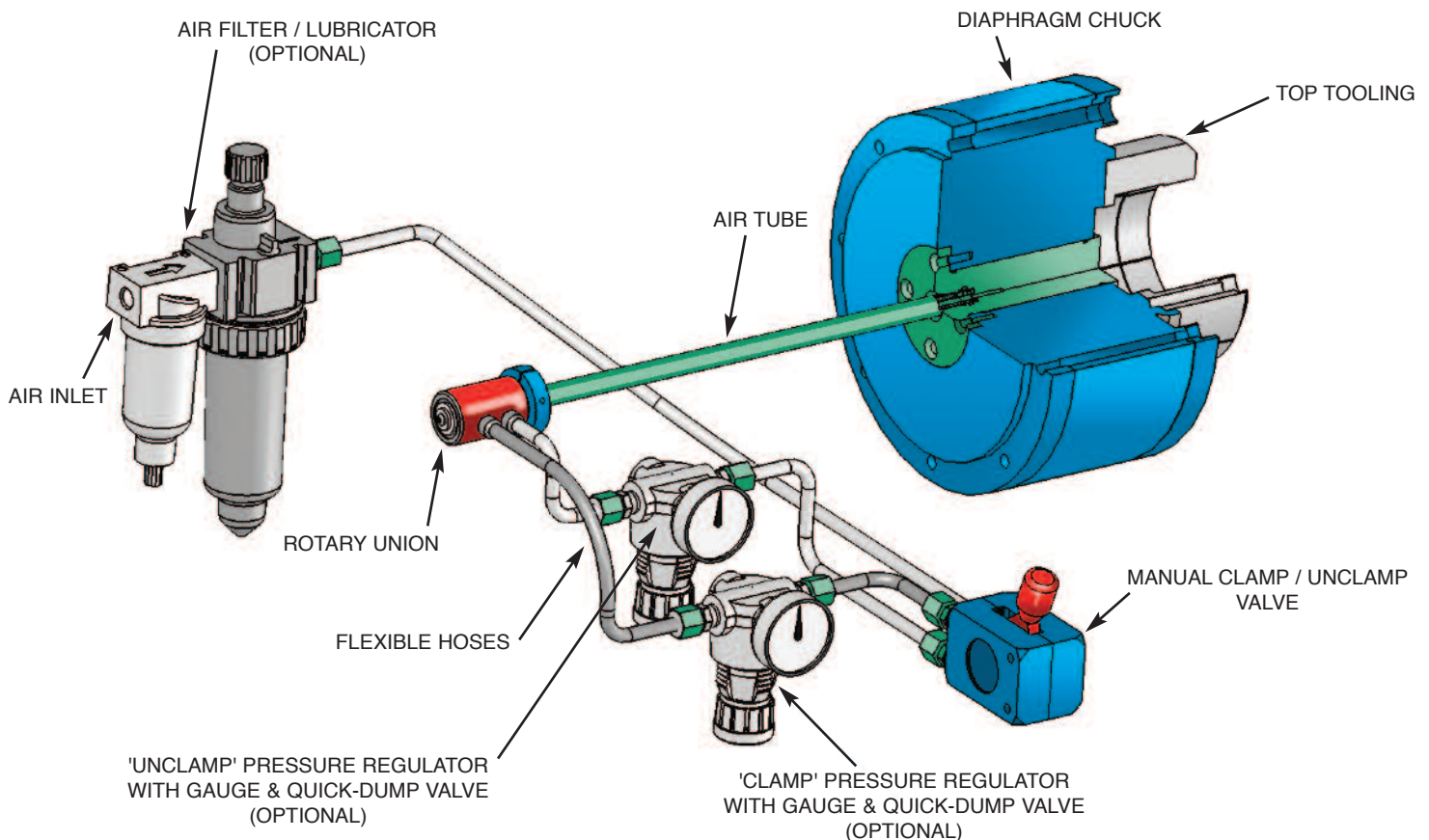
- Simple loading and unloading. No indicating or adjusting.
- Automatic self centering
- Uniform, adjustable holding pressure
- Automatic or manual operation

Reliability

- No metal-to-metal moving parts for extremely long life.
- Counterbalanced to operate at high speeds
- Built-in, self contained air cylinder
- Built-in safety features.

The Precision Workholding source

- Workholding leader in accuracy, reliability, repeatability, concentricity and productivity.
- Standard chuck sizes from 3-inch to 10-inch
- Specials up to 18-inch
- Coolant thru or air thru models available
- Custom designed top tooling. Special jaws and back stops, engineered and manufactured to adhere to your work piece tolerance.
- One competitive price for a complete workholding solution.



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 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, we design jaws to hold the most intricate or fragile parts. The appropriate material is used – from hardened and ground tool steel through aluminum to Delrin plastic and serrated diamond points. Jaws are created for external, thin-wall/rigid, over-the-shoulder, and hundreds of other unique solutions to exactly meet each workholding requirement 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.

In most cases, quotations for these engineering services are free.

U.S. and METRIC

All dimensions and weights listed in this catalog are in U.S. (Imperial) 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" (.051mm).
- (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.
- Quick disconnects.



MODEL DPH-300

3 INCH DIAPHRAGM CHUCK



MODEL DPH-300W

3 INCH COOLANT-THROUGH DIAPHRAGM CHUCK



SPECIFICATIONS

SPECIFICATIONS SUBJECT TO CHANGE

- **Actuation** – Air Open/Close, with or without Diaphragm Clamping
- **Radial Accuracy** – 0.000020" TIR
- **Axial Accuracy** – 0.000010" TIR
- **Jaw Stroke** – 0.020" with Pull-Down Action (1" Top Jaws) @ 100 PSI
- **Speed** – 15,000 RPM Max. with Proper Top Jaws
- **Weight** – 3.4 lbs.
- **Standard Chucking Range** – 0" to 2.5"
- Totally Sealed with No Metal-to-Metal Moving Parts

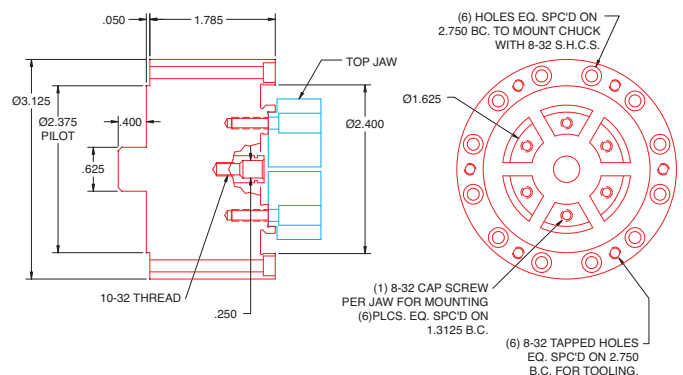
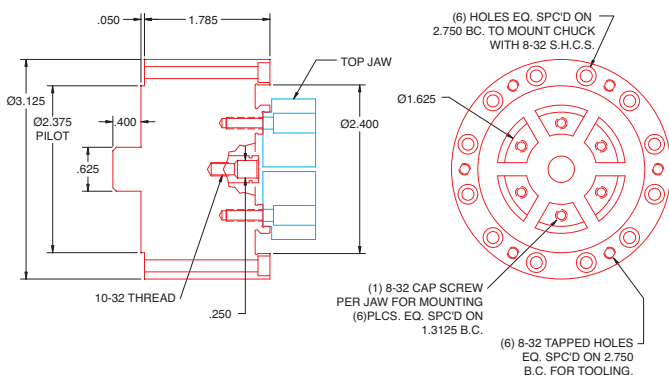
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- **Weight** – 3.4 lbs.
- **Standard Chucking Range** – 0" to 2.5"
- Totally Sealed with No Metal-to-Metal Moving Parts
- Coolant-Through or Air Blast-Through (DPH 300W)

MATERIALS

- **Diaphragm** – Special Multi-Treated High Alloy Steel
- **Air Cylinder Components** – Heat Treated Stainless Steel

- **Diaphragm** – Special Multi-Treated High Alloy Steel
- **Air Cylinder Components** – Heat Treated Stainless Steel

DIMENSIONS



NORTHFIELD
PRECISION INSTRUMENT CORPORATION

4400 Austin Blvd., P.O. Box 550, Island Park, NY 11558-0550
(T) (516) 431-1112 (F) (516) 431-1928 (E) sales@northfield.com (W) www.northfield.com
Call Toll Free 1 (800) 810-2482

MODEL DPH-300I

3 INCH NON-ROTATING AIR TUBE DIAPHRAGM CHUCK



MODEL DPH-400CB

4 INCH - 5/8" COUNTER BORE DIAPHRAGM CHUCK



SPECIFICATIONS

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- **Radial Accuracy** – 0.000020" TIR
- **Axial Accuracy** – 0.000010" TIR
- **Jaw Stroke** – 0.020" with Pull-Down Action (1" top Jaws) @ 100 PSI
- **Speed** – 15,000 RPM Max. with Proper Top Jaws
- **Weight** – 3.5 lbs.
- **Standard Chucking Range** – 0" to 2.5"
- Totally Sealed with No Metal-to-Metal Moving Parts

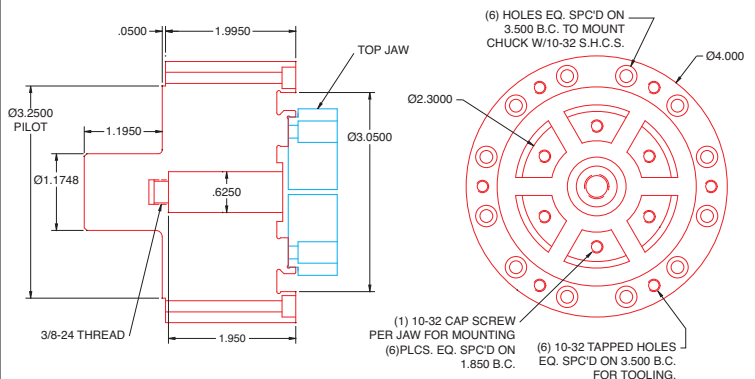
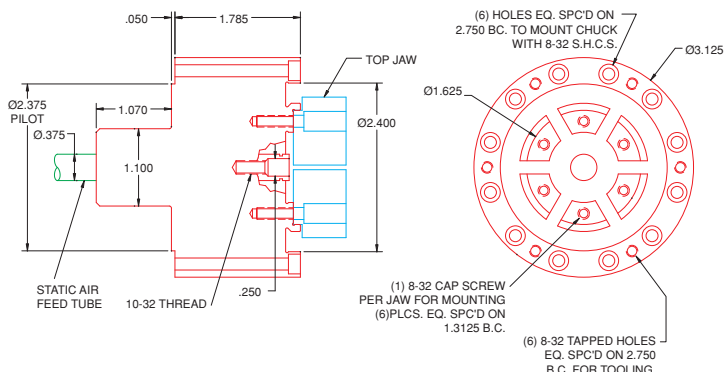
- **Actuation** – Air Open/Close, with or without Diaphragm Clamping
- **Radial Accuracy** – 0.000020" TIR
- **Axial Accuracy** – 0.000010" TIR
- **Jaw Stroke** – 0.048" with Pull-Down Action (1" Top Jaws) @ 100 PSI
- **Speed** – 12,000 RPM Max. with Proper Top Jaws
- **Weight** – 5.6 lbs.
- **Standard Chucking Range** – 0" to 3.0"
- Totally Sealed with No Metal-to-Metal Moving Parts

MATERIALS

- **Diaphragm** – Special Multi-Treated High Alloy Steel
- **Air Cylinder Components** – Heat Treated Stainless Steel

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DIMENSIONS



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MODEL DPH-400CBW

4 INCH COOLANT-THROUGH

5/8" COUNTER BORE DIAPHRAGM CHUCK



MODEL DPH-400

4 INCH DIAPHRAGM CHUCK



SPECIFICATIONS

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- **Radial Accuracy** – 0.000020" TIR
- **Axial Accuracy** – 0.000010" TIR
- **Jaw Stroke** – 0.048" with Pull-Down Action (1" Top Jaws) @ 100 PSI
- **Speed** – 12,000 RPM Max. with Proper Top Jaws
- **Weight** – 5.6 lbs.
- **Standard Chucking Range** – 0" to 3.0"
- Totally Sealed with No Metal-to-Metal Moving Parts
- Coolant through or Air Blast-Through

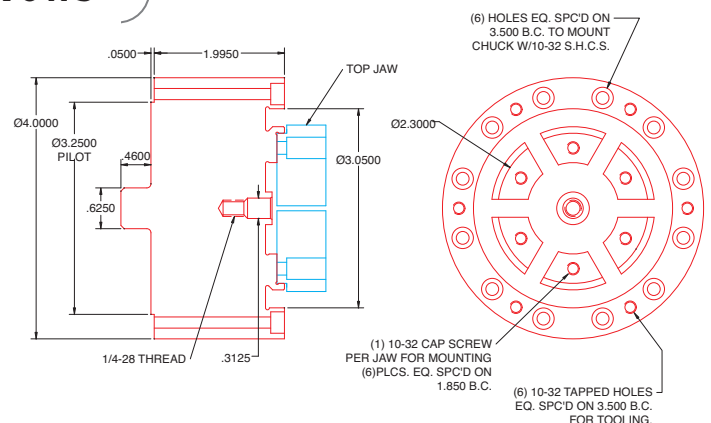
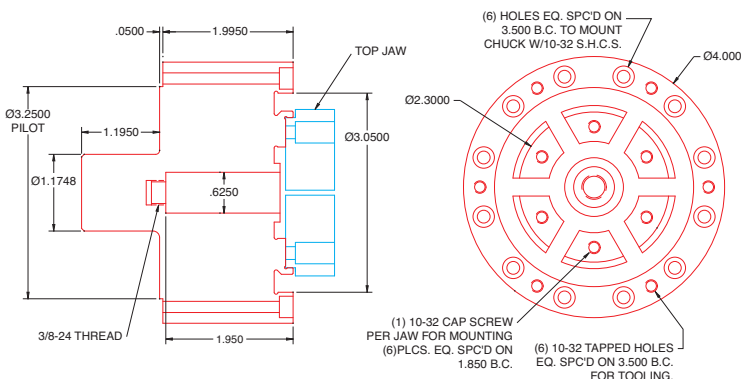
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MATERIALS

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MODEL DPH-400W

4 INCH COOLANT-THROUGH DIAPHRAGM CHUCK



MODEL DPH-400I

4 INCH NON-ROTATING AIR TUBE DIAPHRAGM CHUCK



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- **Speed** – 12,000 RPM Max. with Proper Top Jaws
- **Weight** – 5.6 lbs.
- **Standard Chucking Range** – 0" to 3.0"
- Totally Sealed with No Metal-to-Metal Moving Parts
- Coolant through or Air Blast-Through

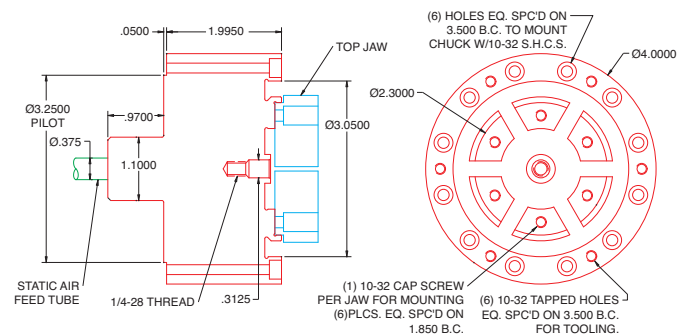
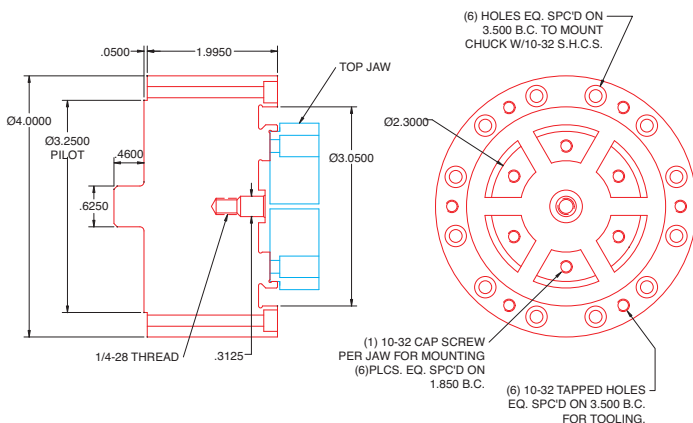
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MATERIALS

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- **Air Cylinder Components** – Heat Treated Stainless Steel

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MODEL DPH-500

5 INCH DIAPHRAGM CHUCK



MODEL DPH-500W

5 INCH COOLANT-THROUGH DIAPHRAGM CHUCK



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- **Radial Accuracy** – 0.000020" TIR
- **Axial Accuracy** – 0.000010" TIR
- **Jaw Stroke** – 0.050" with Pull-Down Action (1.5" Top Jaws) @ 100 PSI
- **Speed** – 12,000 RPM Max. with Proper Top Jaws
- **Weight** – 9.8 lbs.
- **Standard Chucking Range** – 0" to 4.1"
- Totally Sealed with No Metal-to-Metal Moving Parts

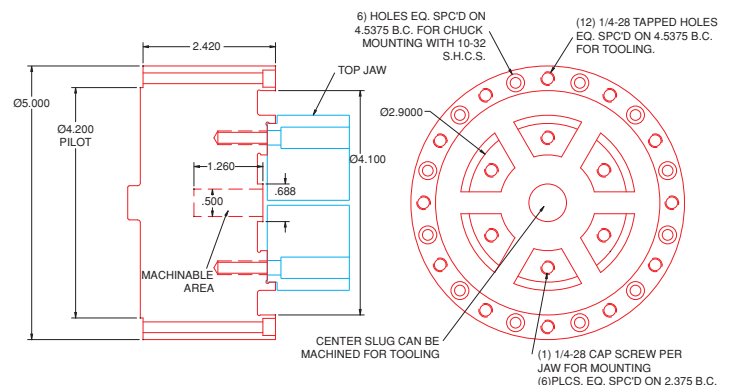
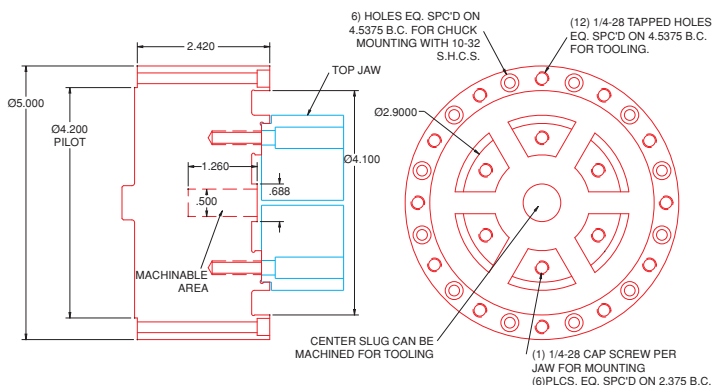
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- **Jaw Stroke** – 0.050" with Pull-Down Action (1.5" Top Jaws) @ 100 PSI
- **Speed** – 12,000 RPM Max. with Proper Top Jaws
- **Weight** – 9.8 lbs.
- **Standard Chucking Range** – 0" to 4.1"
- Totally Sealed with No Metal-to-Metal Moving Parts
- Coolant through or Air Blast-Through

MATERIALS

- **Diaphragm** – Special Multi-Treated High Alloy Steel
- **Air Cylinder Components** – Heat Treated Stainless Steel

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MODEL DPH-500I

5 INCH NON-ROTATING AIR FEED TUBE DIAPHRAGM CHUCK



MODEL DPH-600

6 INCH COOLANT-THROUGH DIAPHRAGM CHUCK



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- **Weight** – 9.8 lbs.
- **Standard Chucking Range** – 0" to 4.1"
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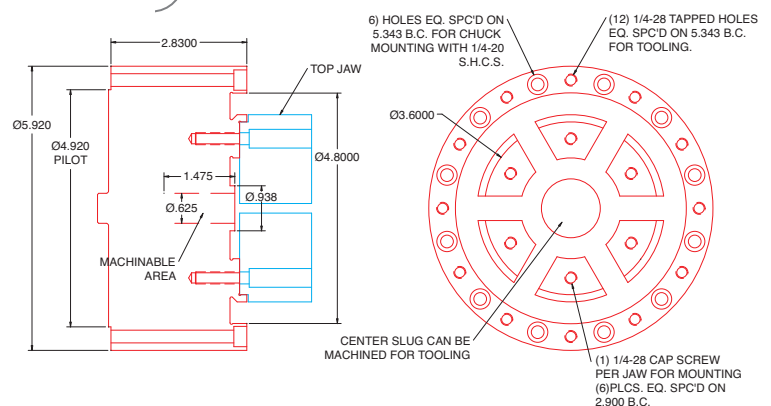
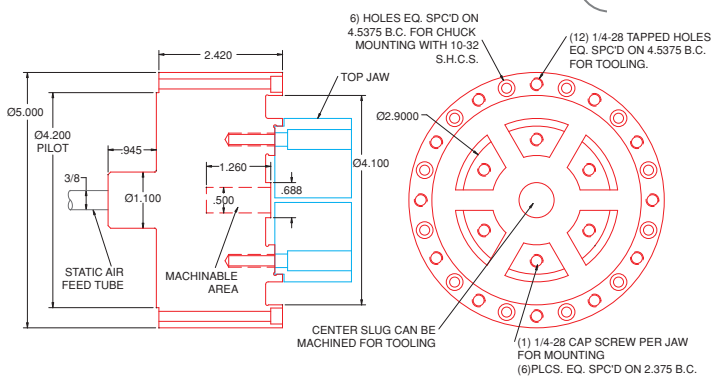
- **Actuation** – Air Open/Close, with or without Diaphragm Clamping
- **Radial Accuracy** – 0.000020" TIR
- **Axial Accuracy** – 0.000010" TIR
- **Jaw Stroke** – 0.060" with Pull-Down Action (1.5" Top Jaws)
- **Speed** – 10,000 RPM Max. with Proper Top Jaws
- **Weight** – 16.1 lbs.
- **Standard Chucking Range** – 0" to 4.8"
- Totally Sealed with No Metal-to-Metal Moving Parts

MATERIALS

- **Diaphragm** – Special Multi-Treated High Alloy Steel
- **Air Cylinder Components** – Heat Treated Stainless Steel

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MODEL DPH-600W

6 INCH COOLANT-THROUGH DIAPHRAGM CHUCK



MODEL DPH-600I

6 INCH NON-ROTATING AIR FEED TUBE DIAPHRAGM CHUCK



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- **Weight** – 16.1 lbs.
- **Standard Chucking Range** – 0" to 4.8"
- Totally Sealed with No Metal-to-Metal Moving Parts
- Coolant through or Air Blast-Through

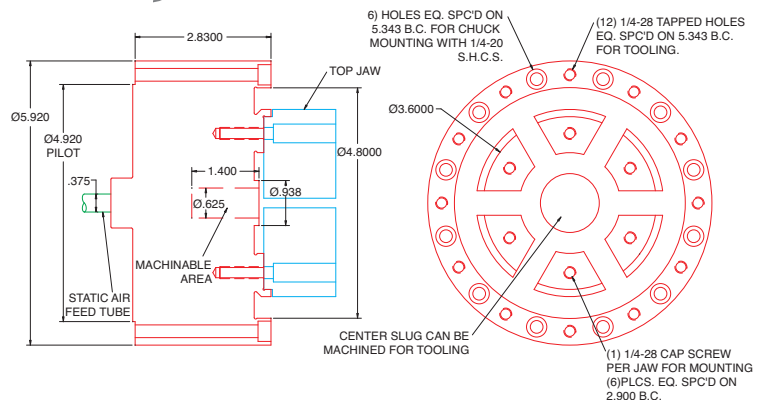
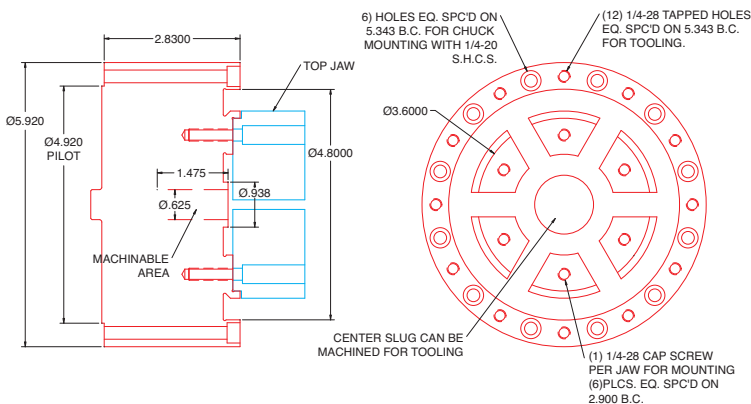
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- **Jaw Stroke** – 0.060" with Pull-Down Action (1.5" Top Jaws)
- **Speed** – 10,000 RPM Max. with Proper Top Jaws
- **Weight** – 16.3 lbs.
- **Standard Chucking Range** – 0" to 4.8"
- Totally Sealed with No Metal-to-Metal Moving Parts

MATERIALS

- **Diaphragm** – Special Multi-Treated High Alloy Steel
- **Air Cylinder Components** – Heat Treated Stainless Steel

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MODEL DPH-600L

6 INCH LOW PROFILE DIAPHRAGM CHUCK



MODEL DPH-600LW

6 INCH LOW PROFILE COOLANT-THROUGH DIAPHRAGM CHUCK



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- **Radial Accuracy** – 0.000020" TIR
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- **Jaw Stroke** – 0.060" with Pull-Down Action (1.5" Top Jaws)
- **Speed** – 3,000 RPM Max. with Proper Top Jaws
- **Weight** – 13.0 lbs.
- **Standard Chucking Range** – 0" to 4.8"
- Totally Sealed with No Metal-to-Metal Moving Parts

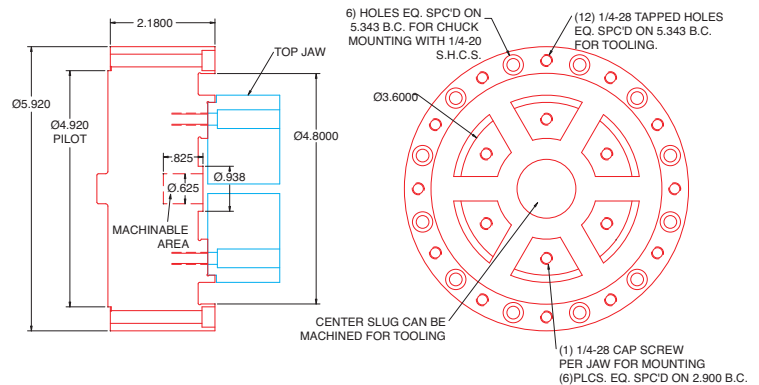
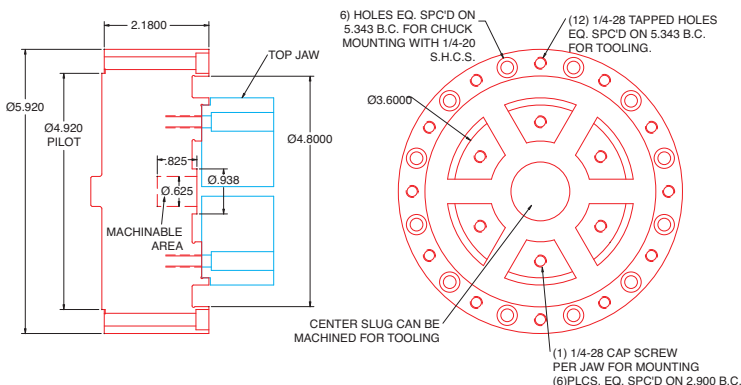
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- **Jaw Stroke** – 0.060" with Pull-Down Action (1.5" Top Jaws)
- **Speed** – 3,000 RPM Max. with Proper Top Jaws
- **Weight** – 13.0 lbs.
- **Standard Chucking Range** – 0" to 4.8"
- Totally Sealed with No Metal-to-Metal Moving Parts
- Coolant through or Air Blast-Through

MATERIALS

- **Diaphragm** – Special Multi-Treated High Alloy Steel
- **Air Cylinder Components** – Heat Treated Stainless Steel

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MODEL DPH-600LI

6 INCH LOW PROFILE NON-ROTATING AIR FEED TUBE DIAPHRAGM CHUCK



MODEL DPH-700

7 INCH DIAPHRAGM CHUCK



SPECIFICATIONS

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- **Standard Chucking Range** – 0" to 4.8"
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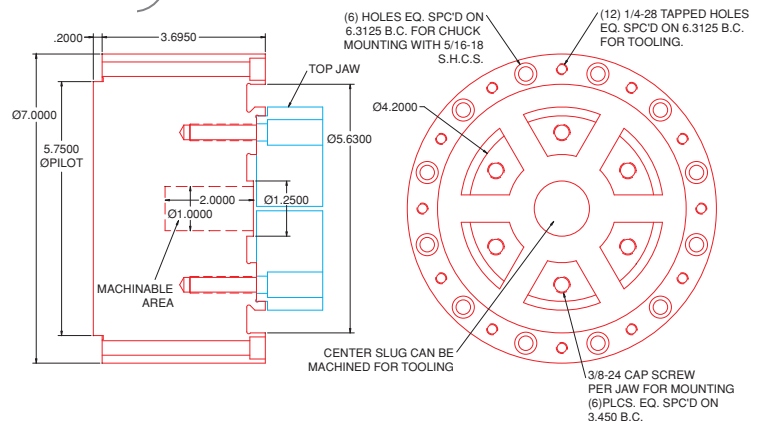
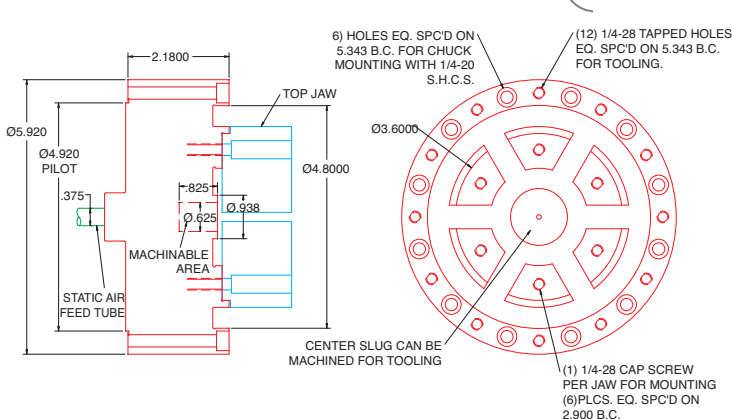
- **Actuation** – Air Open/Close, with or without Diaphragm Clamping
- **Radial Accuracy** – 0.000020" TIR
- **Axial Accuracy** – 0.000010" TIR
- **Jaw Stroke** – 0.065" with Pull-Down Action (1.5" Top Jaws) @ 100 PSI
- **Speed** – 10,000 RPM Max. with Proper Top Jaws
- **Weight** – 31.3 lbs.
- **Standard Chucking Range** – 0" to 5.5"
- Totally Sealed with No Metal-to-Metal Moving Parts

MATERIALS

- **Diaphragm** – Special Multi-Treated High Alloy Steel
- **Air Cylinder Components** – Heat Treated Stainless Steel

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MODEL DPH-700W

7 INCH COOLANT-THROUGH DIAPHRAGM CHUCK



MODEL DPH-700L

7 INCH LOW PROFILE DIAPHRAGM CHUCK



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- **Speed** – 10,000 RPM Max. with Proper Top Jaws
- **Weight** – 31.3 lbs.
- **Standard Chucking Range** – 0" to 5.5"
- Totally Sealed with No Metal-to-Metal Moving Parts
- Coolant through or Air Blast-Through

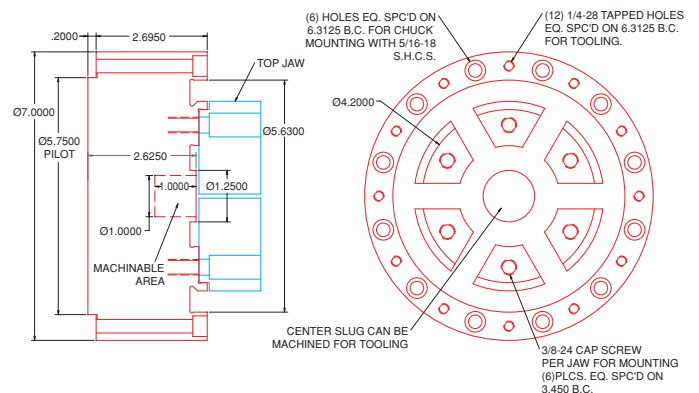
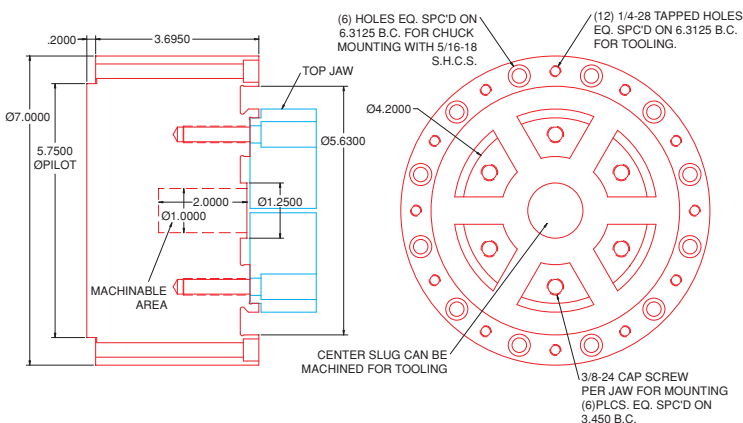
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- **Radial Accuracy** – 0.000020" TIR
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- **Jaw Stroke** – 0.065" with Pull-Down Action (1.5" Top Jaws) @ 100 PSI
- **Speed** – 3,000 RPM Max. with Proper Top Jaws
- **Weight** – 23.2 lbs.
- **Standard Chucking Range** – 0" to 5.5"
- Totally Sealed with No Metal-to-Metal Moving Parts

MATERIALS

- **Diaphragm** – Special Multi-Treated High Alloy Steel
- **Air Cylinder Components** – Heat Treated Stainless Steel

- **Diaphragm** – Special Multi-Treated High Alloy Steel
- **Air Cylinder Components** – Heat Treated Stainless Steel

DIMENSIONS



NORTHFIELD
PRECISION INSTRUMENT CORPORATION

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Call Toll Free 1 (800) 810-2482

MODEL DPH-700LW

7 INCH LOW PROFILE COOLANT-THROUGH DIAPHRAGM CHUCK



MODEL DPH-700LIW

7 INCH LOW PROFILE COOLANT-THROUGH NON-ROTATING AIR FEED TUBE DIAPHRAGM CHUCK



SPECIFICATIONS

SPECIFICATIONS SUBJECT TO CHANGE

- **Actuation** – Air Open/Close, with or without Diaphragm Clamping
- **Radial Accuracy** – 0.000020" TIR
- **Axial Accuracy** – 0.000010" TIR
- **Jaw Stroke** – 0.065" with Pull-Down Action (1.5" Top Jaws) @ 100 PSI
- **Speed** – 3,000 RPM Max. with Proper Top Jaws
- **Weight** – 23.2 lbs.
- **Standard Chucking Range** – 0" to 5.5"
- Totally Sealed with No Metal-to-Metal Moving Parts
- Coolant through or Air Blast-Through

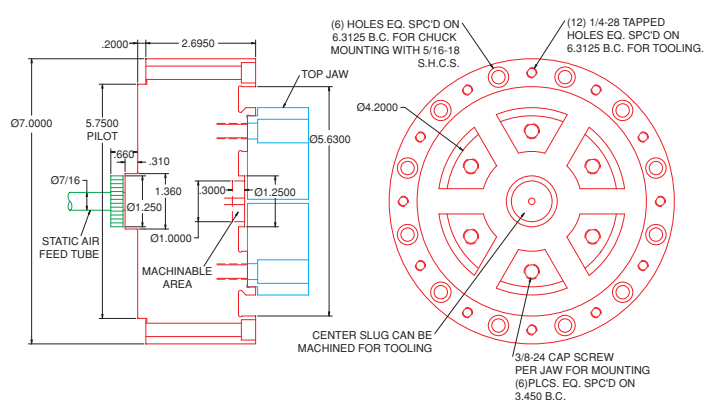
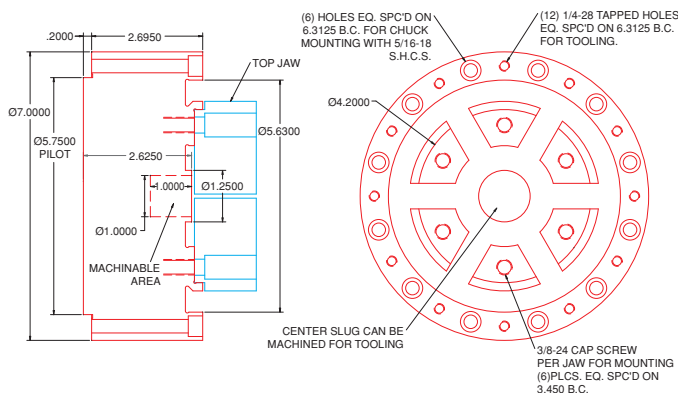
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MATERIALS

- **Diaphragm** – Special Multi-Treated High Alloy Steel
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MODEL DPH-800

8 INCH COOLANT-THROUGH DIAPHRAGM CHUCK



MODEL DPH-800W

8 INCH COOLANT-THROUGH DIAPHRAGM CHUCK



SPECIFICATIONS

SPECIFICATIONS SUBJECT TO CHANGE

- **Actuation** – Air Open/Close, with or without Diaphragm Clamping
- **Radial Accuracy** – 0.000050" TIR
- **Axial Accuracy** – 0.000050" TIR
- **Jaw Stroke** – 0.060" with Pull-Down Action (2" Top Jaws) @ 100 PSI
- **Speed** – 8,000 RPM Max. with Proper Top Jaws
- **Weight** – 40.8 lbs.
- **Standard Chucking Range** – 0" to 6.5"
- Totally Sealed with No Metal-to-Metal Moving Parts

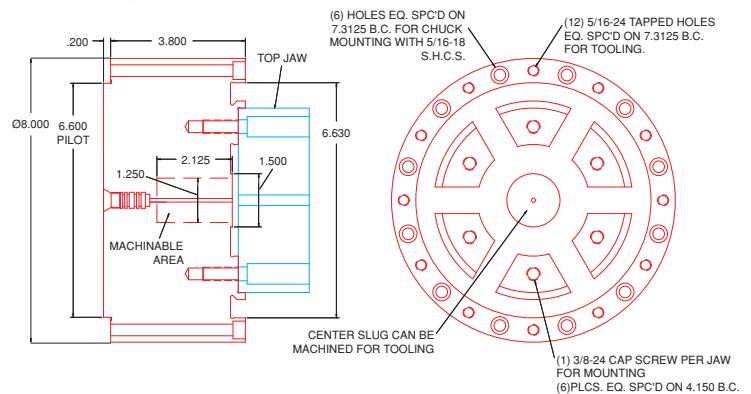
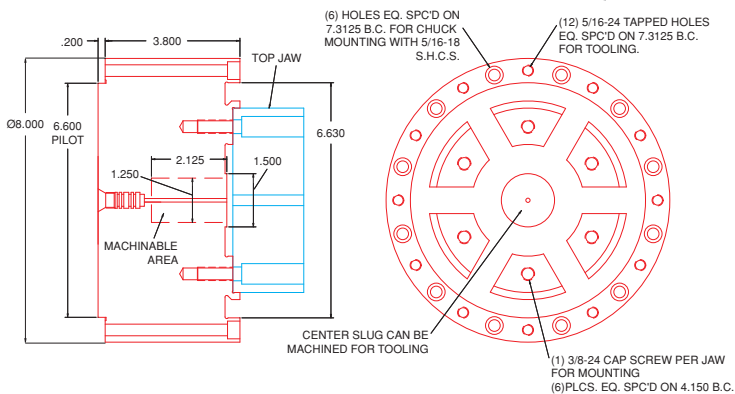
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MATERIALS

- **Diaphragm** – Special Multi-Treated High Alloy Steel
- **Air Cylinder Components** – Heat Treated Stainless Steel

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MODEL DPH-800L

8 INCH LOW PROFILE DIAPHRAGM CHUCK



MODEL DPH-800LW

8 INCH LOW PROFILE COOLANT-THROUGH DIAPHRAGM CHUCK



Also Available: **DPH-800L LOW PROFILE DIAPHRAGM CHUCK**

SPECIFICATIONS

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- **Jaw Stroke** – 0.060" with Pull-Down Action (2" Top Jaws) @ 100 PSI
- **Speed** – 3,000 RPM Max. with Proper Top Jaws
- **Weight** – 30.1 lbs.
- **Standard Chucking Range** – 0" to 6.5"
- Totally Sealed with No Metal-to-Metal Moving Parts

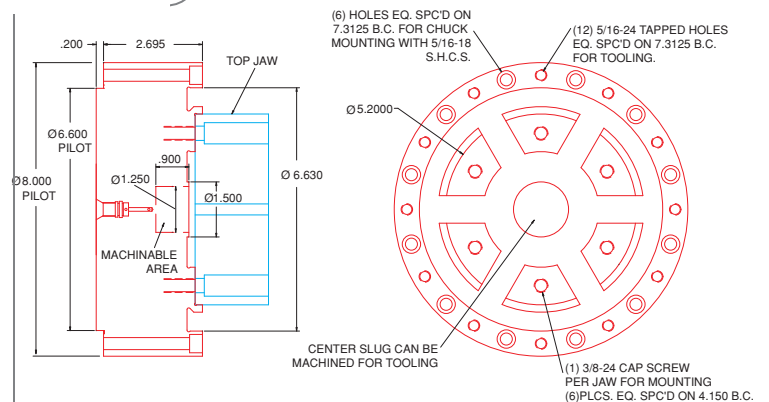
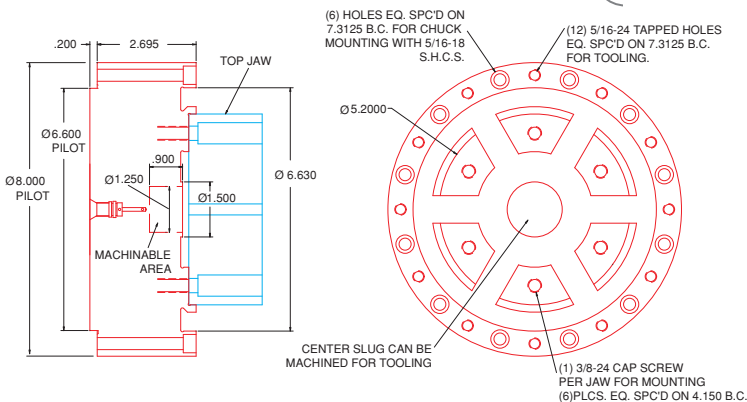
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MATERIALS

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MODEL DPH-800LIW

8 INCH LOW PROFILE COOLANT-THROUGH NON-ROTATING AIR FEED TUBE DIAPHRAGM CHUCK



MODEL DPH-1000

10 INCH DIAPHRAGM CHUCK



SPECIFICATIONS

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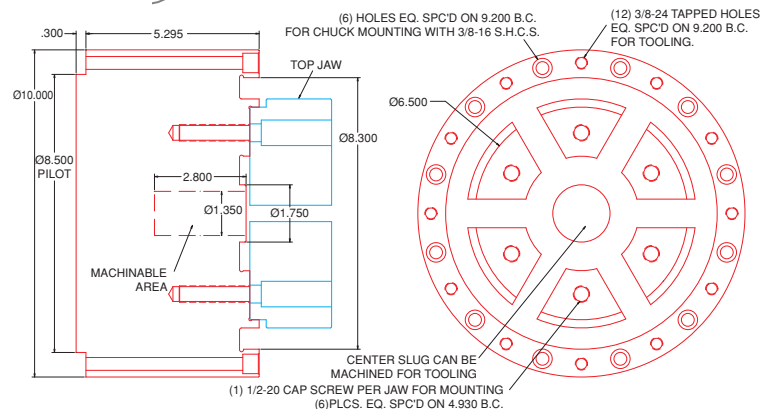
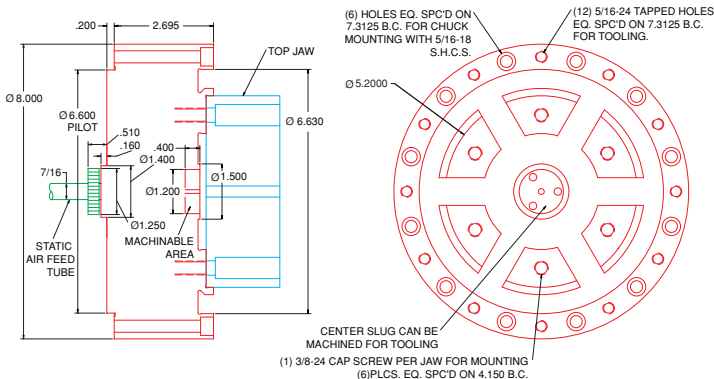
- **Actuation** – Air Open/Close, with or without Diaphragm Clamping
- **Radial Accuracy** – 0.000050" TIR
- **Axial Accuracy** – 0.000050" TIR
- **Jaw Stroke** – 0.120" with Pull-Down Action (2.5" Top Jaws) @ 100 PSI
- **Speed** – 8,000 RPM Max. with Proper Top Jaws
- **Weight** – 92.9 lbs.
- **Standard Chucking Range** – 0" to 8.3"
- Totally Sealed with No Metal-to-Metal Moving Parts

MATERIALS

- **Diaphragm** – Special Multi-Treated High Alloy Steel
- **Air Cylinder Components** – Heat Treated Stainless Steel

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MODEL DPH-1000W

10 INCH COOLANT-THROUGH DIAPHRAGM CHUCK



MODEL DPH-1000L

10 INCH LOW PROFILE DIAPHRAGM CHUCK



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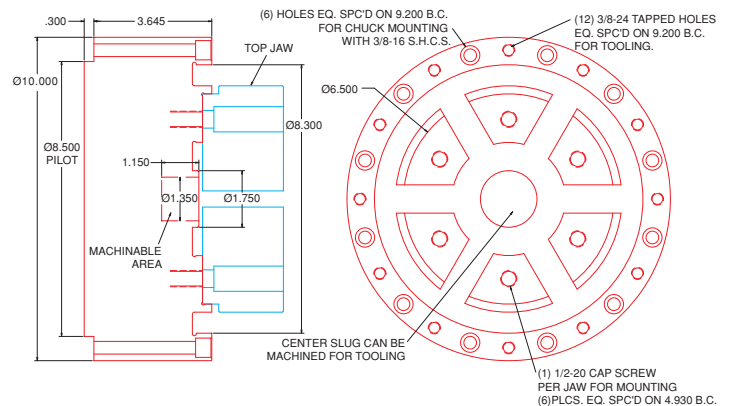
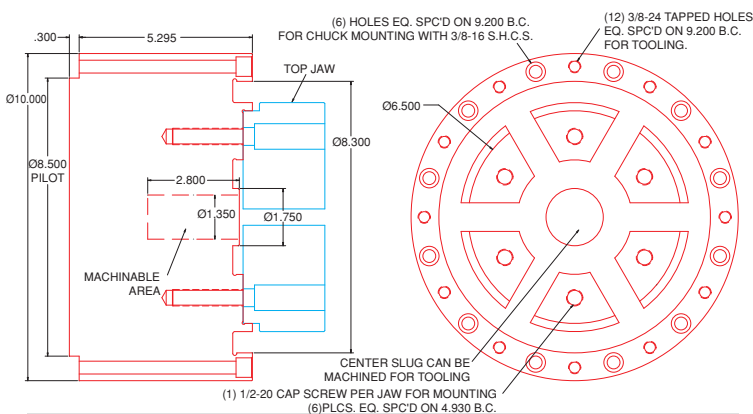
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- **Speed** – 3,000 RPM Max. with Proper Top Jaws
- **Weight** – 68.7 lbs.
- **Standard Chucking Range** – 0" to 8.3"
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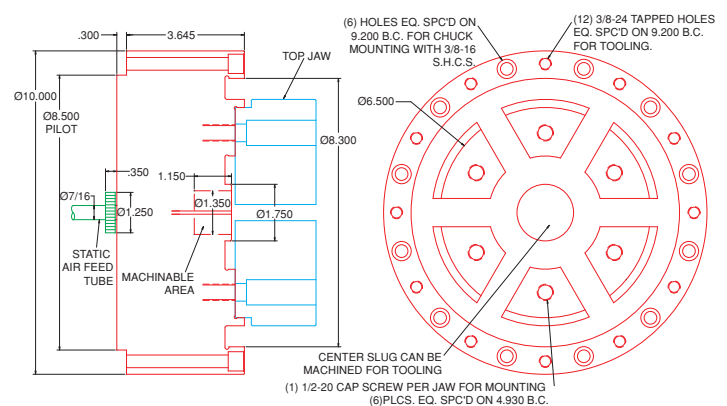
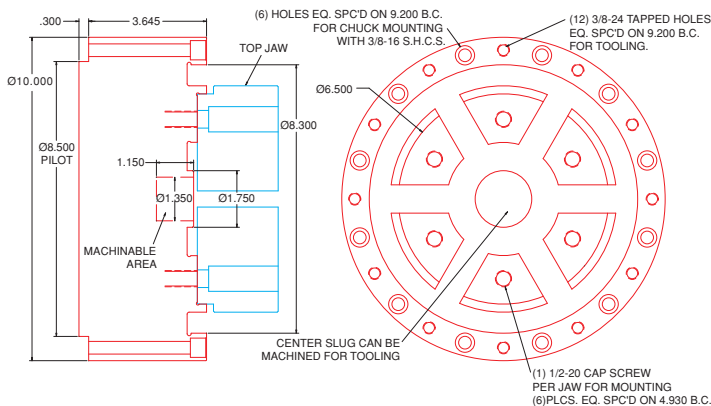
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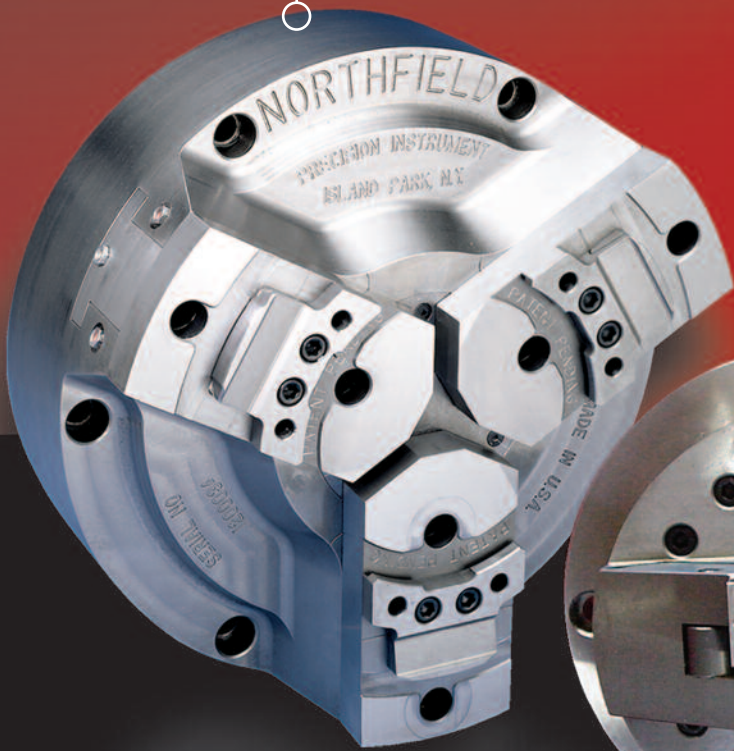
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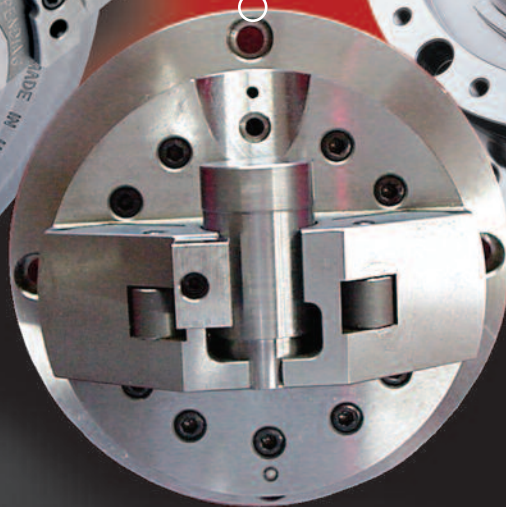
**12 IN. SLIDING JAW CHUCK WITH
QUICK CHANGE SUB JAW**



**7 IN. COMPENSATING
DIAPHRAGM CHUCK**



HOT DOG CHUCK





SPECIAL 5 IN. DIAPHRAGM CHUCK WITH COUNTER BORE

3 IN. DIA. CHUCK WITH OUTER RING ROTARY UNION

7 IN. DIAPHRAGM CHUCK WITH FACE CLAMPS

4 IN. DIA. DIAPHRAGM CHUCK TO GRIP CIRCULATOR PUMP BEARING HOUSE

3 IN. STATIONARY DIAPHRAGM CHUCK

Precision Air Chucks

Northfield Precision works closely with a world-wide 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, customdesigned to solve the most difficult workholding problems. Northfield supplies precision products to the international automotive, aerospace, electrical/electronic, medical/optical, machine tool, plastics/ceramics and appliance industries.

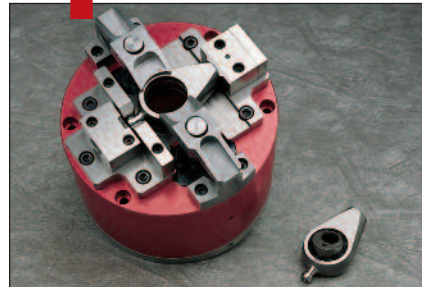
Pull-down fixture for high-speed turning



Sealed chuck for lens grinding



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



2-jaw offset chuck with dual locators



ID gripping chuck for OD turning

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

NORTHFIELD

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