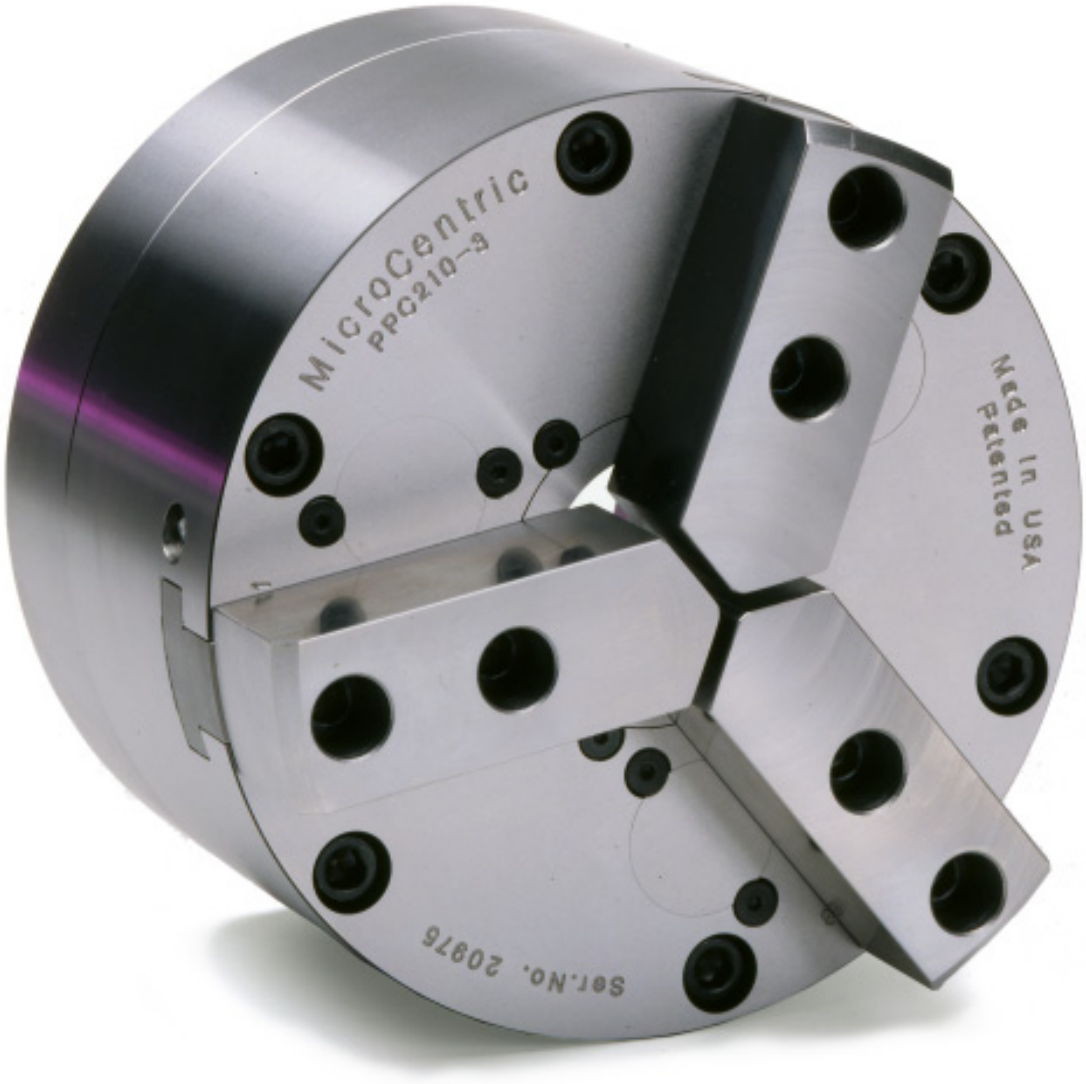
MicroCentric

Precision Workholding Solutions

Precision Power Chucks



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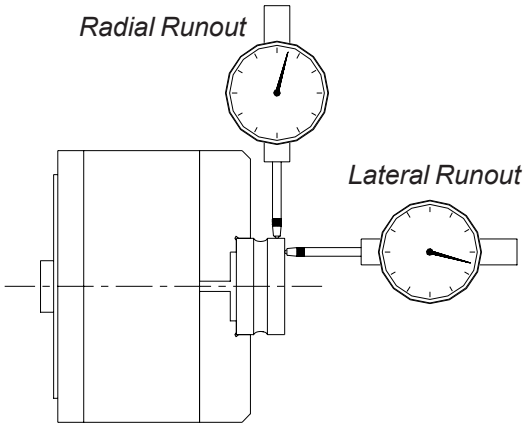
The Ultimate Precision Power Chuck

Improve productivity and lower costs by enhancing workpiece quality . . . . . .

through accurate and repeatable workholding. Manufacturers maintaining high concentricity throughout a workpiece's machining process benefit from lower scrap rates, reduced cycle times and increased production capacity. By holding close tolerances and minimizing the amount of material left for finishing, you not only reduce your cost per part, but you also end up with more parts produced at the end of each shift. The high repeating accuracy of MicroCentric PPC Series Power Chucks also provides the capability to improve workpiece parallelism, roundness, and squareness, as well as holding closer size tolerances.

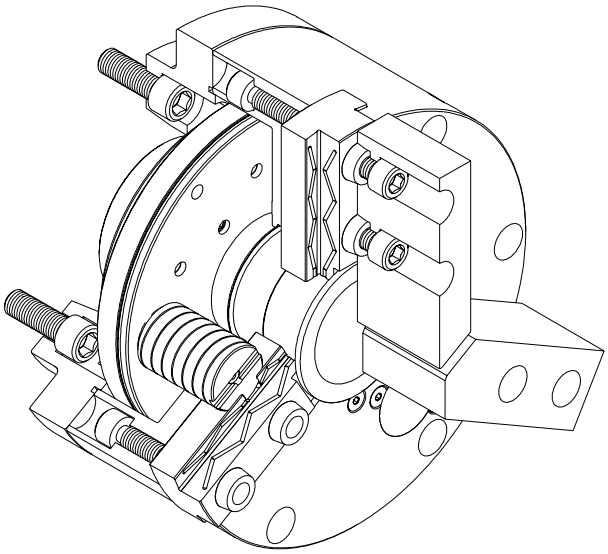


Accuracy to 0.0001" TIR

The standard repeating accuracy of PPC chucks is .0001" TIR. This means that the radial and lateral runout of your workpiece will be held within .0001" from part to part.

PPC Chuck Design

Aircraft quality materials including a hardened alloy steel chuck body, actuators, and base jaws are used to manufacture PPC chucks. The base jaws are precision ground and lapped to achieve high repeating accuracy and minimize jaw lifting as the chuck clamps. PPC chucks can be actuated by either a hydraulic or pneumatic cylinder. Their modular design permits PPC chucks to be adapted to any machine spindle and draw tube configuration.



PPC chucks feature a patented open center design with separate actuators mounted to a piston connected to the draw tube adapter.

PPC Chuck Models

Standard Series

Standard series PPC chucks are designed for precision turning and cylindrical grinding applications requiring high concentricity, parallelism, and/or squareness. Standard series PPC chucks are available in 4, 6, 8, 10, and 12 inch diameter models.

Long Stroke Series

Long Stroke PPC chucks provide larger jaw opening for load clearance or to accommodate a range of workpiece diameters without changing top jaws. Long stroke PPC chuck models are available in 4, 6, 8, 10, and 12 inch diameters.

Standard Series PPC Chucks

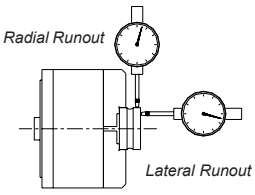
Standard series PPC chucks are designed for precision turning and cylindrical grinding applications required to hold close concentricity and squareness tolerances. PPC chucks can be actuated by a hydraulic or pneumatic cylinder, and can be adapted to any machine spindle or workhead configuration. PPC chucks include a spindle mounting plate and draw tube adapter.

Chuck Accuracy

- .0001" (0.0025 mm) TIR for PPC110, 165 and 210 models
- .0002" (0.005 mm) TIR for PPC250 and 300 models

Standard Series PPC Specifications

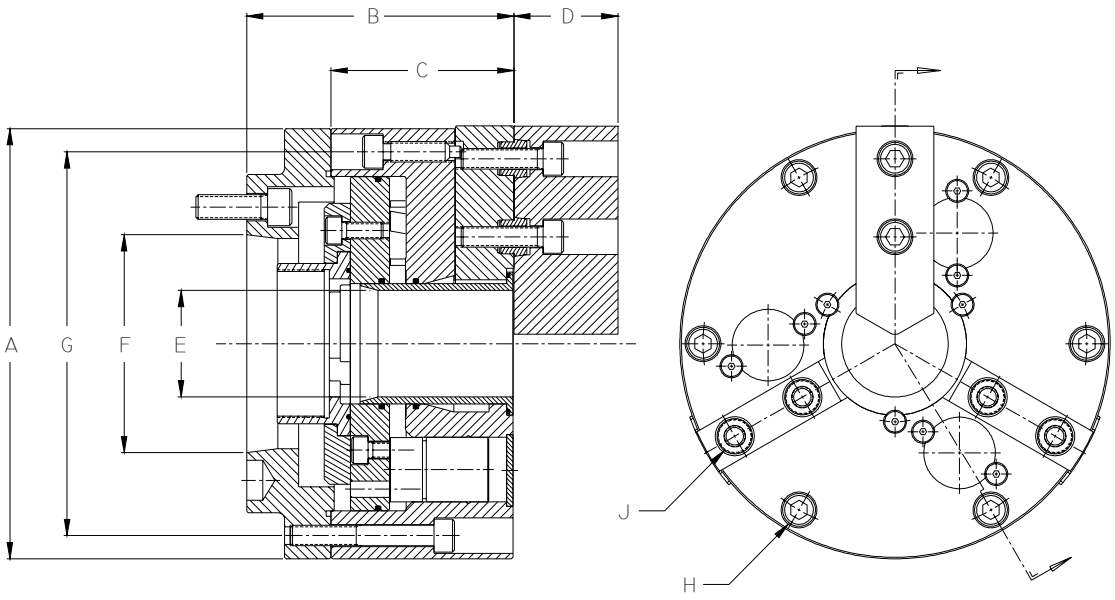
Chuck Model		PPC110	PPC165	PPC210	PPC250	PPC300
Chuck Size	inch	4.33	6.50	8.25	10.00	12.00
	mm	110	165	210	250	300
No. of Jaws*		3	3	3	3	3
Chuck Accuracy**	inch	.0001	.0001	.0001	.0002	.0002
	mm	0.0025	0.0025	0.0025	0.005	0.005
Through Hole Dia.	inch	1.063	1.375	2.047	2.598	3.032
	mm	27	35	52	66	77
Jaw Stroke (on dia.)	inch	.120	.180	.220	.250	.250
	mm	3	4.5	5.5	6.3	6.3
Actuator Stroke	inch	.340	.515	.630	.710	.710
	mm	9	13	16	18	18
Max. Draw Bar Force	lbs	2,060	2,780	4,790	5,820	6,470
	kg	940	1,260	2,180	2,645	2,940
Max. Clamping Force	lbs	3,350	5,560	9,560	11,640	12,940
	kg	1,520	2,530	4,345	5,290	5,880
Max. Speed***	rpm	6,000	5,000	4,000	3,000	2,500
Weight (w/o top jaws)	lbs	9.1	32.2	60.1	95.6	126.3
	kg	4.1	14.6	27.3	43.5	57.4
Moment of Inertia (GD^2)	$lbs•ft^2$	.55	5.4	15.9	30.2	65.8
	$N•m^2$	0.06	0.58	1.73	3.28	7.15



*2 jaw configurations available on all PPC models
6 jaw configurations available on PPC250 and 300 models
**Chucking accuracy is defined as the total indicator reading (maximum radial and lateral runout) of a master gage measured 1.0" (25 mm) from the face of a standard top jaw
***Max. rpm is influenced by the draw tube force and the mass of top jaws

Standard Series PPC Dimensions

Model		A	B	C	D	E	F	G	H	J
PPC110/A4	inch	4.330	3.103	2.165	1.00	1.063	A-4	3.875	M5	M5
	mm	110	78.8	55	25.4	27	A-4	98.4	M5	M5
PPC110/A5	inch	4.330	3.103	2.165	1.00	1.063	A-5	3.875	M5	M5
	mm	110	78.8	55	25.4	27	A-5	98.4	M5	M5
PPC165/A5	inch	6.450	4.373	3.311	2.00	1.375	A-5	5.709	M8	M10
	mm	164	110.1	84.1	50.8	35	A-5	145	M8	M10
PPC165/A6	inch	6.450	4.373	3.311	2.00	1.375	A-6	5.709	M8	M10
	mm	164	110.1	84.1	50.8	35	A-6	145	M8	M10
PPC210/A5	inch	8.268	5.135	3.515	2.00	2.047	A-5	7.375	M10	M10
	mm	210	130.4	89.3	50.8	52	A-5	187.3	M10	M10
PPC210/A6	inch	8.268	5.135	3.515	2.00	2.047	A-6	7.375	M10	M10
	mm	210	130.4	89.3	50.8	52	A-6	187.3	M10	M10
PPC250/A6	inch	9.950	5.840	4.140	2.00	2.598	A-6	9.000	M12	M10
	mm	253	148.3	105.2	50.8	66	A-6	228.6	M12	M10
PPC250/A8	inch	9.950	5.840	4.140	2.00	2.598	A-8	9.000	M12	M10
	mm	253	148.3	105.2	50.8	66	A-8	228.6	M12	M10
PPC300/A8	inch	11.950	5.890	4.140	2.00	3.032	A-8	11.000	M12	M12
	mm	304	149.6	105.2	50.8	77	A-8	279.4	M12	M12
PPC300/A11	inch	11.950	5.890	4.140	2.00	3.032	A-11	11.000	M12	M12
	mm	304	149.6	105.2	50.8	77	A-11	279.4	M12	M12



Spindle Mounting

PPC chucks includes a mounting plate and threaded draw tube adapter.
Mounting plates for spindle noses not listed are quoted upon request.

Long Stroke PPC Chucks

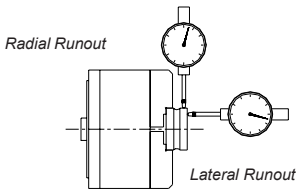
Long Stroke PPC chucks provide a larger jaw stroke for load clearance or to accommodate a range of clamping diameters without changing top jaws. PPC chucks can be actuated by a hydraulic or pneumatic cylinder, and can be adapted to any machine spindle or workhead configuration. PPC chucks include a spindle mounting plate and draw tube adapter.

Chuck Accuracy

- .0001" (0.0025 mm) TIR for PPC110, 165, and 210 models
- .0002" (0.005 mm) TIR for PPC250 and 300 models

Long Stroke PPC Specifications

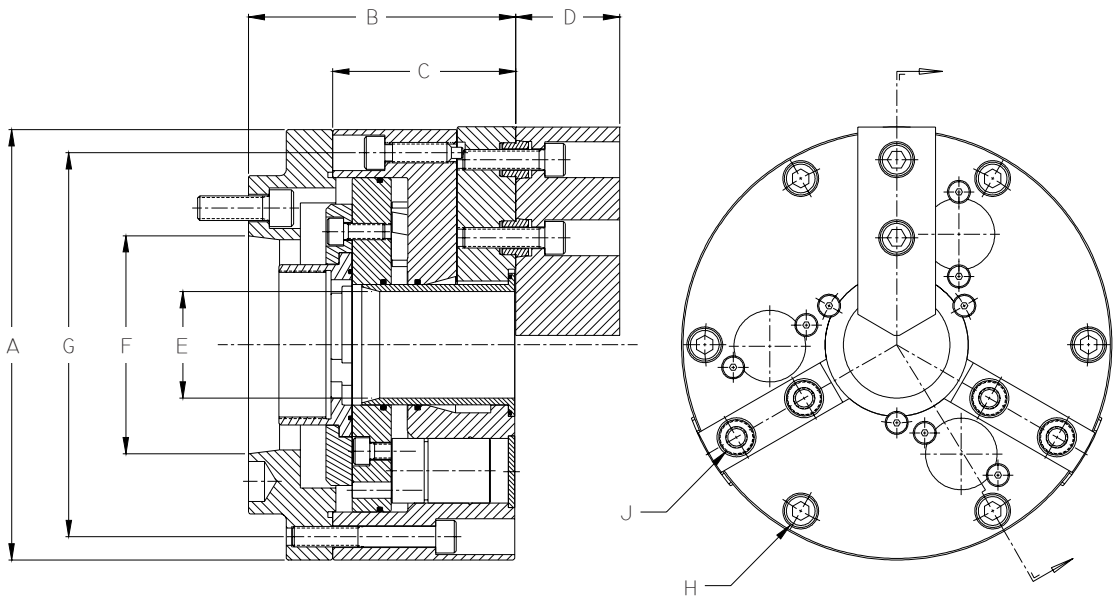
Chuck Model		PPC110-L	PPC165-L	PPC210-L	PPC250-L	PPC300-
Chuck Size	inch	4.33	6.50	8.25	10.00	12.00
	mm	110	165	210	250	300
No. of Jaws*		3	3	3	3	3
Chuck Accuracy**	inch	.0001	.0001	.0001	.0002	.0002
	mm	0.0025	0.0025	0.0025	0.005	0.005
Through Hole Dia.	inch	1.063	1.375	2.047	2.598	3.032
	mm	27	35	52	66	77
Jaw Stroke (on dia.)	inch	.180	.270	.330	.380	.380
	mm	4.6	6.9	8.4	9.6	9.6
Actuator Stroke	inch	.340	.515	.630	.710	.710
	mm	9	13	16	18	18
Max. Draw Bar Force	lbs	2,060	2,780	4,790	5,820	6,470
	kg	940	1,260	2,180	2,645	2,940
Max. Clamping Force	lbs	2,680	4,450	7,650	9,310	10,350
	kg	1,220	2.020	3,480	4,230	4,705
Max. Speed***	rpm	5,000	4,000	3,000	2,500	2,000
Weight (w/o top jaws)	lbs	9.1	32.2	60.1	95.6	126.3
	kg	4.1	14.6	27.3	43.5	57.4
Moment of Inertia (GD^2)	$lbs•ft^2$	.55	5.4	15.9	30.2	65.8
	$N•m^2$	0.06	0.58	1.73	3.28	7.15



*2 jaw configurations available on all PPC-L models
6 jaw configurations available on 250 and 300 models
**Chucking accuracy is defined as the total indicator reading (maximum radial and lateral runout) of a master gage measured 1.0" (25 mm) from the face of a standard top jaw
***Max. rpm is influenced by the draw tube force and the mass of top jaws

Long Stroke PPC Dimensions

Model		A	B	C	D	E	F	G	H	J
PPC110-L/A4	inch	4.330	3.103	2.165	1.00	1.063	A-4	3.875	M5	M5
	mm	110	78.8	55	25.4	27	A-4	98.4	M5	M5
PPC110-L/A5	inch	4.330	3.103	2.165	1.00	1.063	A-5	3.875	M5	M5
	mm	110	78.8	55	25.4	27	A-5	98.4	M5	M5
PPC165-L/A5	inch	6.450	4.373	3.311	2.00	1.375	A-5	5.709	M8	M10
	mm	164	110.1	84.1	50.8	35	A-5	145	M8	M10
PPC165-L/A6	inch	6.450	4.373	3.311	2.00	1.375	A-6	5.709	M8	M10
	mm	164	110.1	84.1	50.8	35	A-6	145	M8	M10
PPC210-L/A5	inch	8.268	5.135	3.515	2.00	2.047	A-5	7.375	M10	M10
	mm	210	130.4	89.3	50.8	52	A-5	187.3	M10	M10
PPC210-L/A6	inch	8.268	5.135	3.515	2.00	2.047	A-6	7.375	M10	M10
	mm	210	130.4	89.3	50.8	52	A-6	187.3	M10	M10
PPC250-L/A6	inch	9.950	5.840	4.140	2.00	2.598	A-6	9.000	M12	M10
	mm	253	148.3	105.2	50.8	66	A-6	228.6	M12	M10
PPC250-L/A8	inch	9.950	5.840	4.140	2.00	2.598	A-8	9.000	M12	M10
	mm	253	148.3	105.2	50.8	66	A-8	228.6	M12	M10
PPC300-L/A8	inch	11.950	5.890	4.140	2.00	3.032	A-8	11.000	M12	M12
	mm	304	149.6	105.2	50.8	77	A-8	279.4	M12	M12
PPC300-L/A11	inch	11.950	5.890	4.140	2.00	3.032	A-11	11.000	M12	M12
	mm	304	149.6	105.2	50.8	77	A-11	279.4	M12	M12



Spindle Mounting

PPC chucks includes a mounting plate and threaded draw tube adapter.
Mounting plates for spindle noses not listed are quoted upon request.

QC Jaw System

Patented jaw locating system maintains .0002" (0.005mm) TIR runout after jaw change without remachining top jaws.*

MicroCentric's QC precision locating jaw system reduces setup time and increases a machine's flexibility for JIT scheduling by eliminating the time consuming process of remachining top jaws after jaw changes. QC top jaws can also be machined *off-line* on a QC Jaw Turning Fixture or on another QC chuck.

QC System Accuracy

PPC110, PPC165 & PPC210 Models

- .0002" (0.005mm) TIR when jaws are machined and replaced onto the same PPC/QC chuck
- .0008" (0.02mm) TIR when jaws are machined on another PPC chuck or QC turning fixture

PPC250 & PPC300 Models

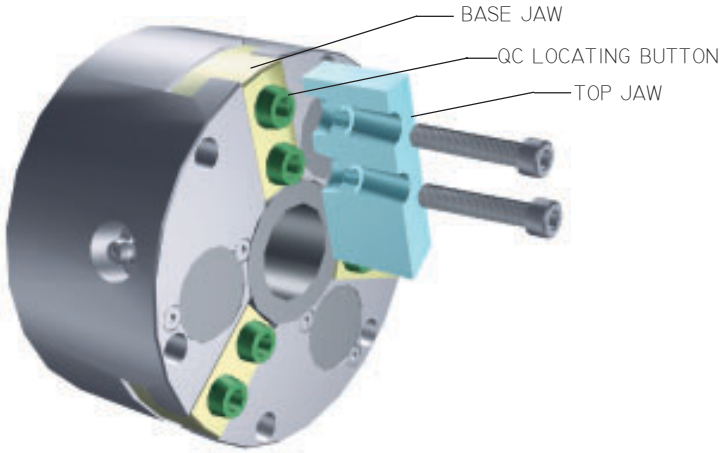
- .0004" (0.01mm) TIR when jaws are machined and replaced onto the same PPC/QC chuck
- .001" (0.025mm) TIR when jaws are machined on another PPC chuck or QC turning fixture

QC System Features

- Blank QC top jaws are made from A-2 tool steel
- QC Jaw Turning fixtures are available to machine top jaws *off-line*
- Hardened and finish ground QC top jaws for specific workpiece applications quoted on request

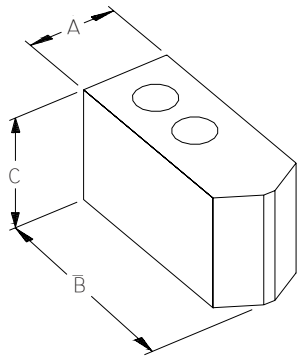
QC System Design

QC top jaws are located on two tapered buttons that are mounted in jig ground locating holes on the chuck's base jaw. QC top jaws feature ground tapered locating holes that locate with the tapered buttons. The top jaw seats on the OD of the tapered button as well as on the face of the base jaw, assuring high accuracy and rigidity.



*QC system accuracy for PPC250 and PPC300 chucks is .0004" (0.01mm)

Blank QC Top Jaws



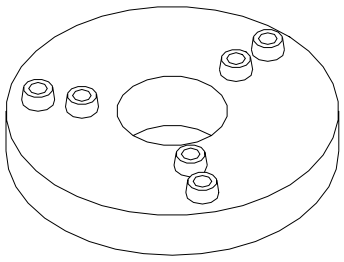
Blank QC Top Jaws are made from A-2 tool steel and feature finish machined tapered seats for accurate location. Blank QC jaws can be heat treated to a hardness up to Rc 62.

Other Blank QC Top Jaws including pie-shaped jaws are quoted upon request.

Chuck	Jaw Model	Matl.	A	B	C	Weight*
PPC110	QP4-150S	A-2	.75"	2.12"	1.50"	.59 lb
		A-2	19mm	54mm	38mm	.27 kg
	QP4-200S	A-2	.75"	2.12"	2.00"	.78 lb
		A-2	19mm	54mm	50mm	.35 kg
PPC165	QP6-200S	A-2	1.25"	3.22"	2.00"	1.8 lb
		A-2	32mm	82mm	50mm	.82 kg
	QP6-300S	A-2	1.25"	3.22"	3.00"	2.7 lb
		A-2	32mm	82mm	76mm	1.2kg
PPC210	QP8-200S	A-2	1.50	4.00"	2.00"	2.9 lb
		A-2	38	102mm	50mm	1.3 kg
	QP8-300S	A-2	1.50	4.00"	3.00"	4.4 lb
		A-2	38	102mm	76mm	2.0 kg
PPC250	QP10-200S	A-2	1.50	4.88"	2.00"	3.7 lb
		A-2	38mm	124mm	50mm	1.7 kg
	QP10-300S	A-2	1.50"	4.88"	3.00"	5.5 lb
		A-2	38mm	124mm	76mm	2.5 kg
PPC300	QP12-200S	A-2	1.50"	5.88"	2.00"	6.0 lb
		A-2	38mm	149mm	50mm	2.7 kg
	QP12-300S	A-2	1.50"	5.88"	3.00"	9.0 lb
		A-2	38mm	149mm	76mm	4.1 kg

*Weights are per piece

QC Jaw Turning Fixtures



Chuck	Turning Fixture Model
PPC110	QC/JTF-P110
PPC165	QC/JTF-P165
PPC210	QC/JTF-P210
PPC250	QC/JTF-P250
PPC300	QC/JTF-P300

QC jaw turning fixtures simulate the locating pattern of a QC chuck. They are used to rough and/or finish machine Blank QC Top Jaws *off-line* to maximize a machine's production capacity. The clamping position of the jaw turning fixture is set in the middle of the chuck's stroke. Other positions are available upon request.

PPC Accessories

Chuck Lubricant

Model	Quantity	Manufacturer	Chuck Model
DTE-HH-32	1 qt. (.95L)	Mobil	PPC110
DTE-HH-128	1 gal. (3.8L)	Mobil	PPC110
CM-P-14	14 oz. (.42L)	Mobil	PPC165 and larger

DTE-HH is a high performance oil formulated to provide a high level of protection from wear, with proprietary additives for superior protection against rust and resistance to oxidation.

CM-P is a premium quality NLGI grade 2 lithium moly complex grease that provides exceptional protection against wear with superior protection against rust and resistance to oxidation.

Grease Guns

Model	Capacity	Chuck Model
H-1	6 oz.	PPC110
P-1	14 oz.	PPC165 and larger

The H-1 is a pump style oil gun with an internal reservoir and includes a tip suited to the grease fittings on PPC110 models.

The P-1 is a lever operated cartridge style grease gun with a tip suited to the fittings on PPC165 and larger chuck models.

Loading Rings

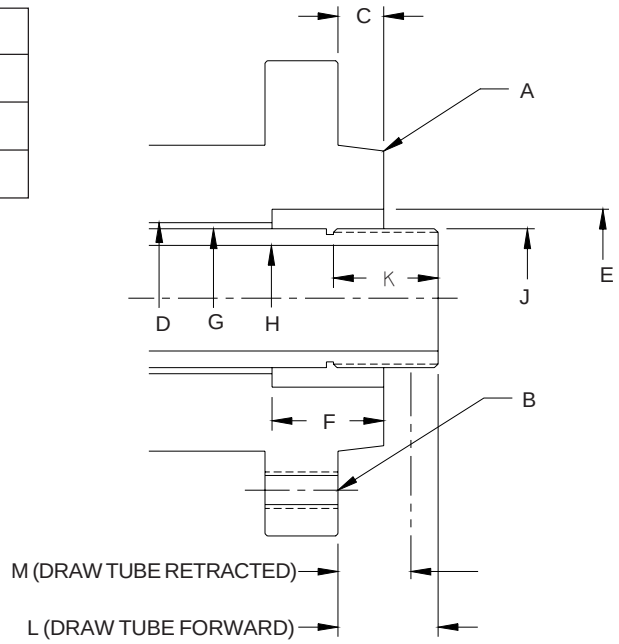
Chuck Size	Model	Application
PPC110	CR-P4	OD Clamping
	LR-P4	ID Clamping
PPC165	CR-P6	OD Clamping
	LR-P6	ID Clamping
PPC210	CR-P8	OD Clamping
	LR-P8	ID Clamping
PPC250	CR-P10	OD Clamping
	LR-P10	ID Clamping

Loading rings are used to set the chuck in a clamping position for machining top jaws. CR loading rings are a cam design which provide easy adjustment of the loading position for OD clamping. LR loading rings are used for ID clamping jaws.

Spindle & Draw Tube Data Sheet

Company	
Chuck Model	
Date	
Ref. No.	

Contact us at ***1-800-573-1139*** if you have any questions about completing this data sheet.



Machine Make			
Machine Model			
Machine Serial No.			
A* taper size			
B mounting thread			
C length of pilot			
D through hole diameter			
E ID counterbore or taper (if any)			
F depth of counterbore (if any)			
G OD of draw tube	H ID of draw tube		
J thread data	thread diameter		
	thread pitch		
	☐ right hand	☐ left hand	
	☐ OD thread	☐ ID thread	
K length of thread			
L** forward position			
M retracted position			

* For machines with a straight spindle pilot a detail drawing of the spindle must be submitted

** Positive (+) indicates draw tube is in front of the spindle face (as shown)
Negative (-) indicates draw tube is behind the spindle face

MicroCentric

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