

# ATL & ATLB SERIES POWER CHUCK MANUAL



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## Maintenance of the Chuck

A power chuck is a precision device. It requires care and ongoing inspection to assure its optimum performance.

The most basic aspect of its care is lubrication. To achieve good life of the chuck a regular program of lubrication must be adhered to. Inadequate lubrication will adversely affect the grip force of the chuck more than any other factor. This is a particular concern where an initial low grip force is desired such as cases of holding fragile parts. Lubrication assures the chuck will perform efficiently and accurately, reducing wear and animating seizure.

Care should also be taken to remove chips between chuckings. Keep the workholding area as clean as possible at all times and use a coolant that includes a rust preventative.

If it is noticed the chuck requires more hydraulic pressure to grip a particular part than it did before it's a signal something is wrong. Either a component or components of the chuck have become worn, top tooling can be improperly attached, or the chuck is not properly greased. PBA/Atlas supplies an approved

lubricant for use in all our power and manual workholding devices. This is part number PB16OZ

It is recommended that the chuck be greased at least once per shift. There are grease fittings at the periphery of the master jaws for this purpose. In more severe applications where there is a large amount of water soluble cutting oil or high pressure coolant a more aggressive lubrication program should be indoctrinated. The conditions will indicate what is correct in these cases.

In cases where cast iron or brass turning are involved it is even more important to clean and grease with more frequency.

### **REGULAR SCHEDULED MAINTENANCE**

It is suggested that the chuck be disassembled and cleaned every six months. (More often if it is a severe application) Check for hairline cracks or badly worn surfaces. Replace if required. If in doubt call PBA/ATLAS service. Apply grease to all moving parts and reassemble. After the chuck is reinstalled inject grease into the grease fittings. Spin the chuck and stop. Inject more grease. This assures the lubricant has propagated to the areas where it is most needed. Check grip force with PBA grip meter to insure the chuck is properly either static or at speed.

### **CYLINDER & DRAW TUBE INSTALLATION**

#### **(1) Connecting the draw tube**

Screw the draw tube fully into the cylinder piston rod. Assure that the rod is in the "retracted" position when this is done.

#### **(2) Mount the cylinder**

Be certain the run out of the cylinder and cylinder adapter is minimized before connecting the hydraulics. Connect the pressure supply lines and the larger diameter drain line. At a low hydraulic pressure (25-50 psi) cycle the rod a few times to ensure air is purged from the lines. Extend the rod fully and turn off power.

#### **(3) Connecting the chuck**

Remove the top jaws and cover plate from the chuck. Suspend the chuck using eyebolt supplied via overhead crane. Using the chuck wrench supplied connect the chuck by rotating the threaded draw nut onto the

tube. This should engage easily. If it does not **STOP**. Check threads on both tube and draw nut for burrs. Check that they are clean and lubricated with a light machine oil. Take the time required to assure that threads are fully engaged.

Align the mounting holes and drive button, insert screws and tighten in an alternating pattern to the proper torque (recommended torque in chart below). Do not over tighten as this will weaken the bolts. Proper strength bolts are provided with the chuck.

Bolt Size	M6	M8	M10	M12	M14	M16	M18	M20	M24
Torque/FT- LBS	10-20	20-30	40-60	40-60	80-100	80-100	80-100	80-100	80-100

In the case of an **indirect** mount, the back plate (or adapter) must be first mounted to the spindle, then the main chuck body will mount to this adapter. All screws are provided.

Check for proper jaw stroke. If it is less than the specified movement check the engagement of the draw tube threads in the draw nut. Check also that the cylinder has sufficient stroke to match that of the “plunger” or wedge.

Check chuck OD for minimized run out. Strive to attain .001” or better. To improve this reading loosen the main mounting bolts and bump the chuck OD or face with a rubber/plastic hammer until an acceptable reading is attained. Again tighten as described above.

#### **(4) Start up**

Replace the cover plate. Note the operating force required for the chuck. Consult the hydraulic cylinder specifications and set to the proper hydraulic pressure.

## **MACHINING THE DRAW NUT**

### **Disassembly**

Remove the top jaws, cover plate, and adapter from chuck. Place Chuck face down and remove the plunger nut and draw nut as one assembly. Refer to part diagram page. **Note 6" model does not have #8 set screw, only spring and ball.** Remove the set screw, spring, and ball. Remove the 6 SHCS holding the assembly together. Separate assembly.

### **Machining**

There are slots in the draw nut which must not be machined away in order to use the chuck wrench supplied. Observe the shoulder and do not machine past this.

6" chuck M55 Max

8" chuck M60 Max

10" chuck M85 Max

12" chuck M100 Max

15" chuck M130 Max

18" chuck M130 Max

20" chuck M190 Max

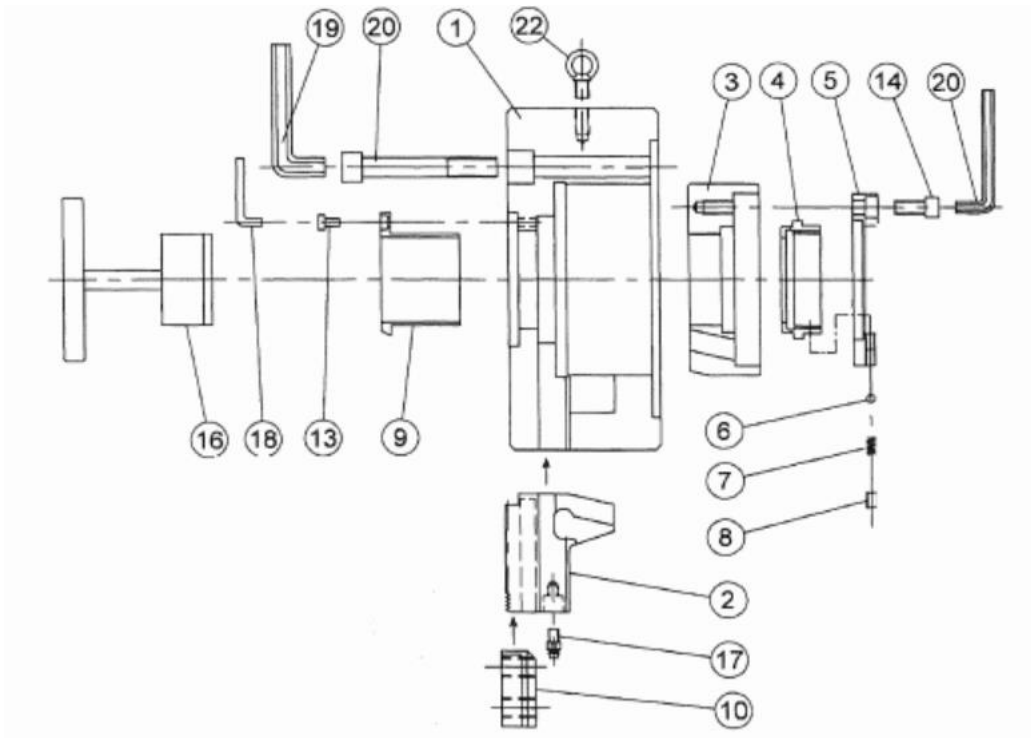
24" chuck M215 Max

32" chuck M250 Max

### **RE-ASSEMBLY**

Inspect draw nut and remove any burrs or chips generated during the machining process. Insert the machined draw nut into the wedge plunger. Replace the plunger nut and the six screws. Reinstall the steel ball, then spring and set screw. Test to see the draw nut moves freely and reinstall back into chuck. If the chuck is Direct mount attach the adapter and go to Cylinder and Draw tube Installation.

**Parts Identification for Series ATL and ATLB Open Center Power Chucks**



No.	Name of Part	Qty.	No.	Name of Part	Qty.
1	Body	1	12	Chuck Mounting Bolts	3 or 6
2	Master Jaw	3	13	Socket Head Screw	3
3	Wedge Plunger	1	14	Socket Head Screw	6
4	Draw Nut	1	16	Joint Handle	1
5	Plunger Nut	1	17	Grease Nipple	3
6	Steel Ball	1	18	Hex Wrench	1
7	Spring	1	19	Hex Wrench	1
8	Set Screw	1	20	Hex Wrench	1
9	Cover	1	22	Sling Bolt	1
10	T-nut	3			

## Series ATL & ATLB Replacement Parts Listing

### ATL Series Standard Thru-Hole Chucks

Part Description	Chuck No.	Chuck No.	Chuck No.	Chuck No.	Chuck No.	Chuck No.	Chuck No.	Chuck No.
	ATL6	ATL8	ATL10	ATL12	ATL15	ATL18	ATL21	ATL24
Master Jaw 1set of 3	N206-2	N208-2	N210-2	N212-2	N215-2	N218-2	N220-2	N224-2
Wedge Plunger	N206-3	N208-3	N210-3	N212-3	N215-3	N218-3	N220-3	N224-3
Draw Nut	N206-4	N208-4	N210-4	N212-4	N215-4	N218-4	N220-4	N224-4
Plunger Nut	N206-5	N208-5	N210-5	N212-5	N215-5	N218-5	N220-5	N224-5
Steel Ball	N206-6	N208-6	N210-6	N212-6	N215-6	N218-6	N220-6	N224-6
Spring	N206-7	N208-7	N210-7	N212-7	N215-7	N218-7	N220-7	N224-7
Cover	N206-9	N208-9	N210-9	N212-9	N215-9	N218-9	N220-9	N224-9
T-Nut (3)	N206-10	N208-10	N210-10	N212-10	N215-10	N218-10	N220-10	N224-10

### ATLB Large Thru-Hole Chucks

Large Thru-Hole	Chuck No.	Chuck No.	Chuck No.	Chuck No.	Chuck No.	Chuck No.
Part Description	ATLB6	ATLB8	ATLB10	ATLB12	ATLB15	ATLB18
Master Jaw 1set of 3	NB306-2	NB208-2	NB210-2	NB212-2	NB215-2	NB218-2
Wedge Plunger	NB306-3	NB208-3	NB210-3	NB212-3	NB215-3	NB218-3
Draw Nut	NB306-4	NB208-4	NB210-4	NB212-4	NB215-4	NB218-4
Plunger Nut	NB306-5	NB208-5	NB210-5	NB212-5	NB215-5	NB218-5
Steel Ball	NB306-6	NB208-6	NB210-6	NB212-6	NB215-6	NB218-6
Spring	NB306-7	NB208-7	NB210-7	NB212-7	NB215-7	NB218-7
Cover	NB306-9	NB208-9	NB210-9	NB212-9	NB215-9	NB218-9
T-Nut (3)	NB306-10	NB208-10	NB210-10	NB212-10	NB215-10	NB218-10