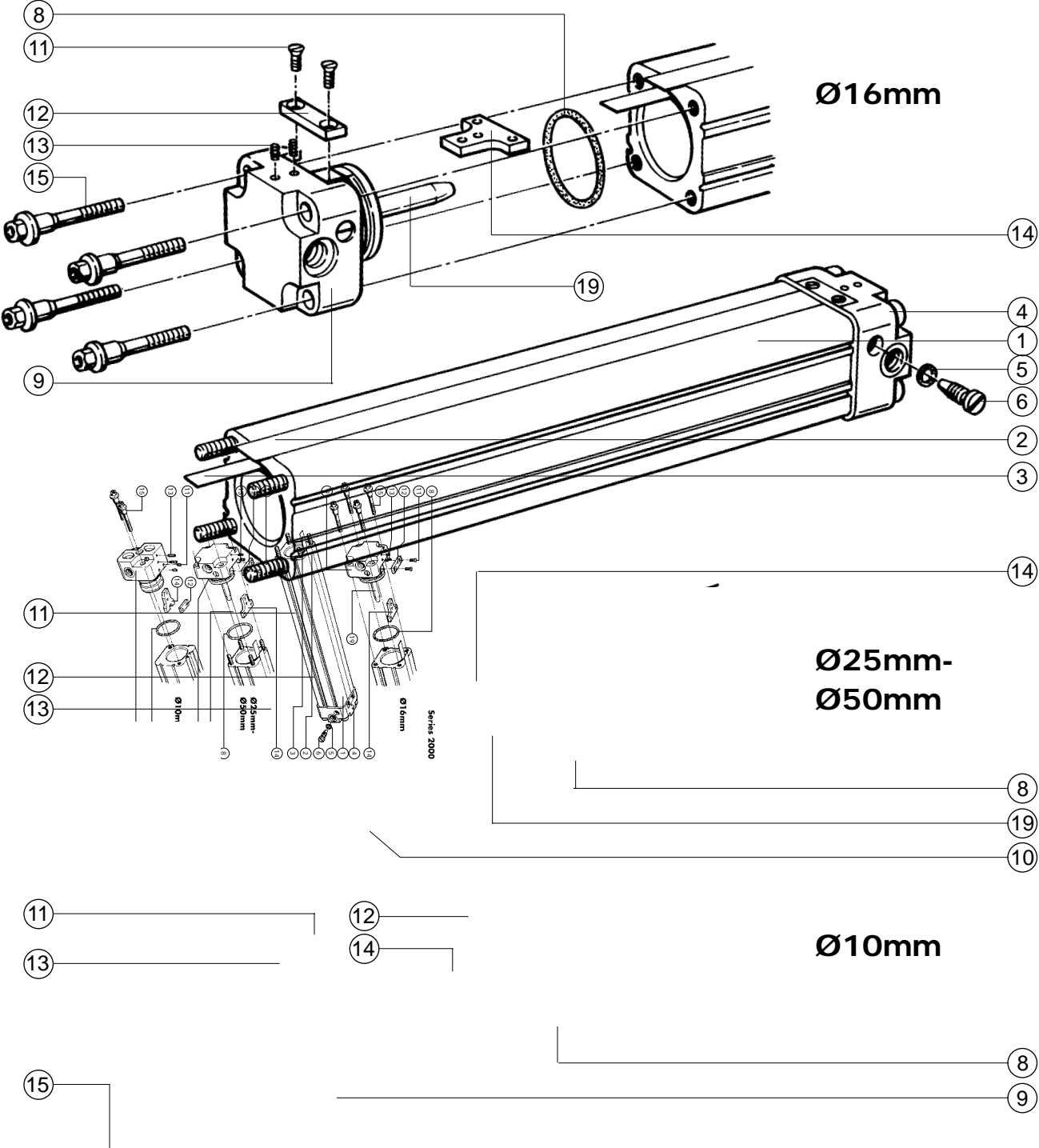


## Assembly Instructions



<b><u>Cylinder Types</u></b>			<b><u>Page</u></b>
Series 2000 -	Basic Cylinder -	Ø10mm - Ø50mm	6.0/2 - 6.0/3
Series P120 -	Basic Cylinder -	Ø40mm - Ø80mm	6.0/2 - 6.0/3
Series 2000 -	Powerguide™ -	Ø25mm - Ø50mm	6.0/4 - 6.0/5
Series 2000 -	NR50 -	Ø16mm - Ø50mm	6.0/6 - 6.0/7
All Series -	Service Packs -	Ø10mm - Ø80mm	6.0/8

### Series 2000



## Assembly Instructions (Series P120, Series 2000)

Typified by ideally matched materials and fully developed design details, Origa cylinders have a very long operational life. However, the service life may be reduced by extreme and demanding environmental conditions, therefore occasional maintenance is recommended.

### Dismantling of the cylinder

Comply with local safety regulations:

1. Disconnect air and electrical supplies.
2. Remove cylinder from framework.
3. Remove piston mounting
4. Remove outer band by removing band locking screws at each end.
5. Loosen inner band locking screws at each end.
6. Remove screws, nuts and bolts at each end.
7. Gently remove end caps - avoid tilting.
8. For series **P120**. Push inboard cap rings. Remove locking rings and slide the cap ring off the barrel.
9. Slide out piston and inner band (4). Use caution when handling the inner band - edges are sharp.

### Inspection

1. Clean and inspect all parts
  - seals for wear.
  - bands for nicks and dents
  - tube for wear along the slot and damage to the bore.
2. Replace worn parts.

### Pre-Assembly

1. Apply ample grease to seals and O-rings.
2. Lightly grease cylinder bore with grease.
3. Ensure that all bearing rings/piston ends and bearing strips are in position.

### Assembly

1. Insert inner band into the bore with the band washer facing up towards the slot.
2. Draw sufficient band out to thread through the piston, slide the piston into the bore and move to a mid-stroke position.

Note: A very small piece of old inner band can be used as a threading strip. Additionally, bend up the first 20mm of band to approx. 30°. This will allow the band to pass freely through the piston.

3. Pull the inner band through until evenly positioned in the tube.
4. For series **P120**. Fit cap rings lock rings outer band locks fit end cap and tighten retaining screws.
5. Check that the inner band washers are visible through the cap ring top center hole.
6. Fit inner band locks.
7. Tighten inner band lock screws on one end only.
8. Insert a small screwdriver through the cap rings top center hole. Gently apply leverage to remove any slackness in the band. Release and tighten the remaining inner band lock screws.

### Series 2000

9. Fit end caps
10. Check inner band washer up to one end cap. Tighten locking screws.
11. At the opposite end use a small screwdriver, gently push the inner band washer towards the end cap. Release and tighten the locking screws.

### Series P120

12. Check that the inner band is laying smooth and that there is no sag. Note: to check for proper tension, depress the band through the slot about 3/16", ensure that it springs back.
13. Fit the outer band and the piston mounting. Tighten the locking screws on the mounting and then each end cap.
14. Fit yoke/mounting O-ring.
15. Manually move the piston through it's full stroke to insure there is no resistance to it's movement.

### Cleaning if inner band (use eye protection)

During assembly dirt particles may become lodged between the sealing band and the cylinder tube contact surfaces. These particles can cause leaks and must be removed.

1. Remove mounting and outer band.
2. Apply 30 PSI (2 bar) air pressure.
3. Insert cleaning tool into the slot and depress where it is leaking. The expelled air will "blow out" any foreign particles, if present.
4. When complete, reinstall the outer band and mounting

### Note:

If the band continues to leak a full cylinder inspection is recommended.

### Defect Diagnosis

Defect	Cause	Correction
Audible leak in stopped position	Leakage at inner band due to dirt	Clean inner band with LRF cleaning tool
	Leakage at inner band due to abrasion	Replace inner band
	Leakage at end cap	Replace end cap O-ring
	Leakage at piston	Replace piston seals
Cylinder speed is inconsistent	Insufficient lubrication	Relubricate
	Piston seals worn out	Replace piston seals
Cylinder impacts in end position	Overloaded	Reduce overload or install hydraulic shocks
	Incorrect setting of cushion screws	Reset
	Insufficient buildup of backpressure	Install flow controls or readjust existing ones
	Cushion seal defect	Replace cushion seals

## Assembly Instructions - Powerguide™

**Repair the basic cylinder as per Series P120/Series 2000 assembly instructions.**

### Slide system adjustment

Important:- Excessive pre-load must not be applied during the adjustment process.

All Powerguide™ components associated with the slide system are factory set prior to delivery and should not require adjustment. If however, play should occur requiring re-adjustment the following procedure should be followed:

1. Remove non-Powerguide™ components attached to carriage plate **(1)**.
2. Remove one of the drive blocks **(7)** to free the carriage assembly.
3. Remove the complete carriage assembly from the slide **(5)**.
4. Remove cap seals **(4)** and return carriage assembly to the slide.
5. Slacken eccentric bearing assembly fixing nuts **(3)** slightly using a socket.  
25 Dia. Size 13mm  
32 Dia. Size 17mm  
50 Dia. Size 22mm
6. Rotate each eccentric bearing assembly **(3)** using the special wrench until play is removed taking care to induce only minimal pre-load. Re-tighten fixing nuts whilst preventing the eccentric stud from rotating using the special wrench.

7. Check one of each pair of opposing bearing assemblies for correct pre-load by rotating the bearings between forefinger and thumb so that the bearing skids against the slide. A degree of resistance should be felt, but the bearings should rotate without difficulty.
8. Remove carriage assembly from the slide and refit cap seals.
9. Return carriage assembly to the slide and adjust cap seals to just make contact with the slide until smearing of the lubricant is observed whilst operating.  
NB: Excess adjustment will result in increased friction.
10. Replace drive block and adjust for no play condition against location bracket.
11. Re-lubricate cap seals according to "lubrication instructions".

Powerguide™ Part No	Special Wrench
25-2021/PG	AT 25
32-2020/PG	AT 34
50-2020/PG	AT 54

## Addendum

The following is an update to the information contained within this catalog

Page	Correction												
3.5/3	Referencing the drawing for "Piston Mounting S/20" the values for dimensions "X" and "Z" are as follows. <table border="1" data-bbox="503 661 966 829"> <thead> <tr> <th>Bore</th> <th>X</th> <th>Z</th> </tr> </thead> <tbody> <tr> <td>40mm</td> <td>3.54"</td> <td>M6</td> </tr> <tr> <td>63mm</td> <td>5.51"</td> <td>M8</td> </tr> <tr> <td>80mm</td> <td>7.09"</td> <td>M10</td> </tr> </tbody> </table>	Bore	X	Z	40mm	3.54"	M6	63mm	5.51"	M8	80mm	7.09"	M10
Bore	X	Z											
40mm	3.54"	M6											
63mm	5.51"	M8											
80mm	7.09"	M10											
5.1/4	The part number for Item 29, 10mm bore cylinder has been changed to 3033.												
5.1/7	The tension pins (item 31) have been eliminated from all Series 2000 cylinders and are no longer required.												
5.1/11	When ordering item 50, both the top and bottom rails are included.												
5.1/16	When ordering item 33, items 30 and 32 are included as an assembly.												