

ÖHLINS

**WORKSHOP MANUAL
VERKSTADSHANDBOK
TWIN SHOCK**



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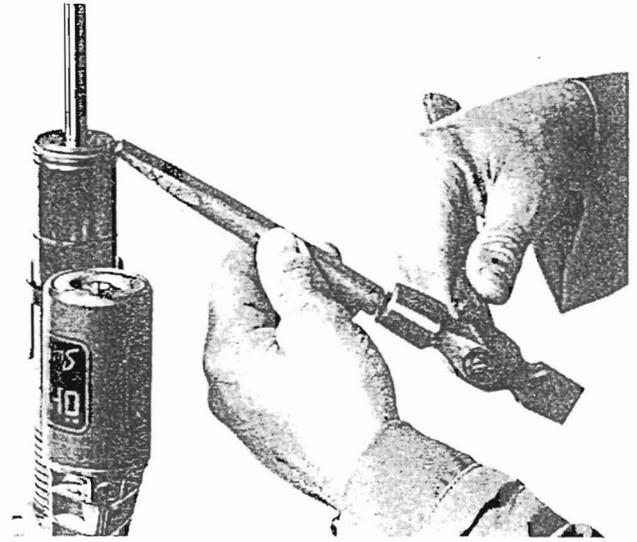
1. Instructions for dismantling shock absorber assy (PIGGY BACK)

1. Remove spring (if fitted).
2. Clean shock absorber externally.
3. Fit shock absorber to stand 705-01 (fig. 1:1).
4. Relieve gas pressure by removing valve needle. Shock absorber with gas valve 603-01 Use needle tool 780-01 to relieve pressure (fig. 1:1).
5. Remove scraper retainer by using a cold chisel (fig. 1:2).
6. Press seal head down using tool 714-01 (fig. 1:3).
7. Remove circlip using tool 715-0. Remove burrs, if any, from circlip groove with a riffler.
8. Press reservoir end down and remove circlip. Remove reservoir end.
9. Fit measuring stick 720-01 to reservoir piston.
10. Lift seal head by pressing reservoir piston with measuring stick (fig.1:4).
11. Use measuring stick to reduce fluid level.
12. Remove lower circlip.
13. Carefully pull piston shaft assy up.
14. Remove reservoir piston.
15. Pour fluid away. Remove all o-rings.
16. Clean all parts. Hone bore of body tube. Remove burrs, if any, from end of body tube using a file (fig. 1:5).
17. Carefully check reservoir internally for signs of damage that might cause gas leakage.
18. Use drift 717-01 to change ball joint.

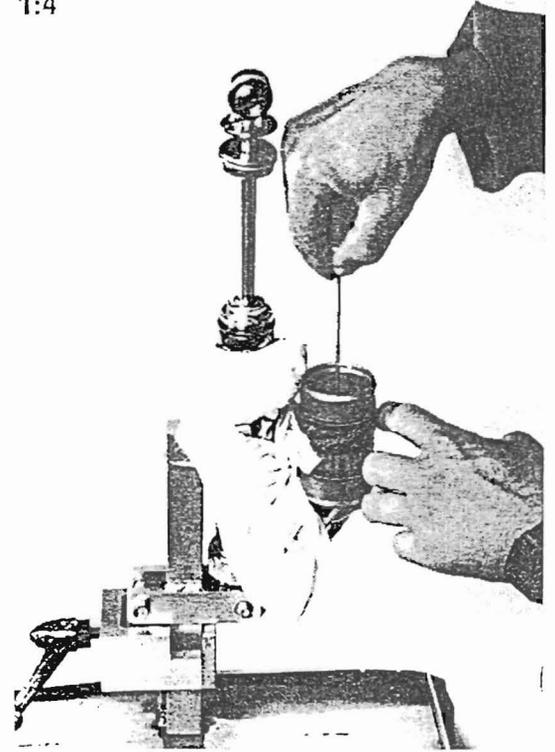
1:1



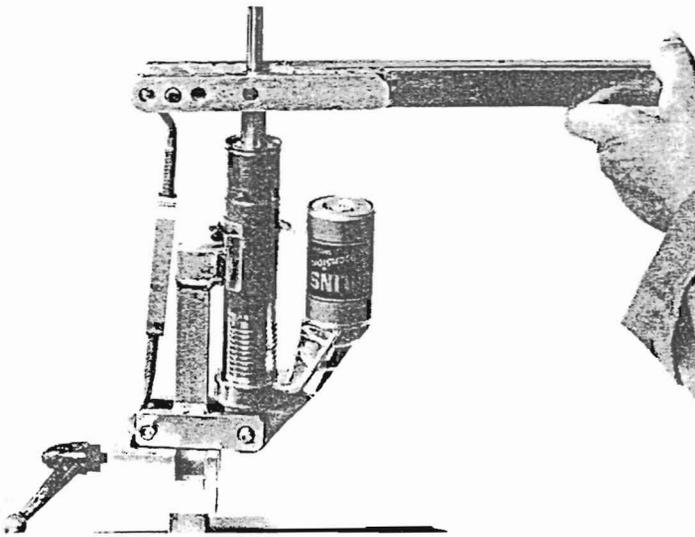
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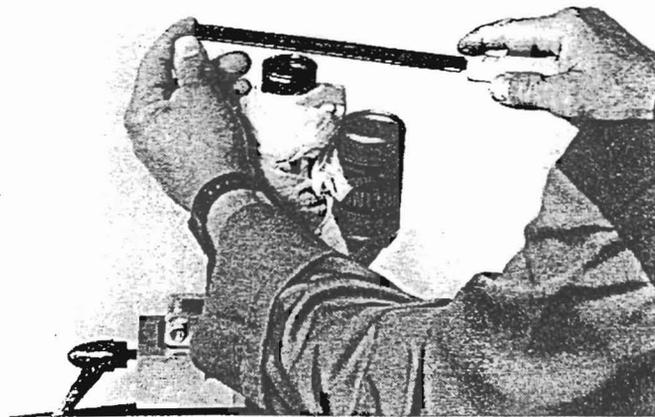
1:4



1:3



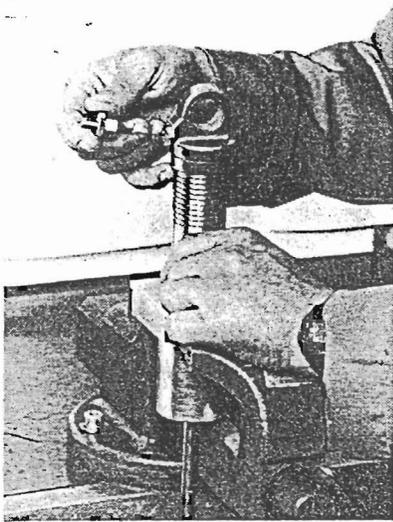
1:5



2. Instructions for dismantling shock absorber featuring separating piston — snow mobile

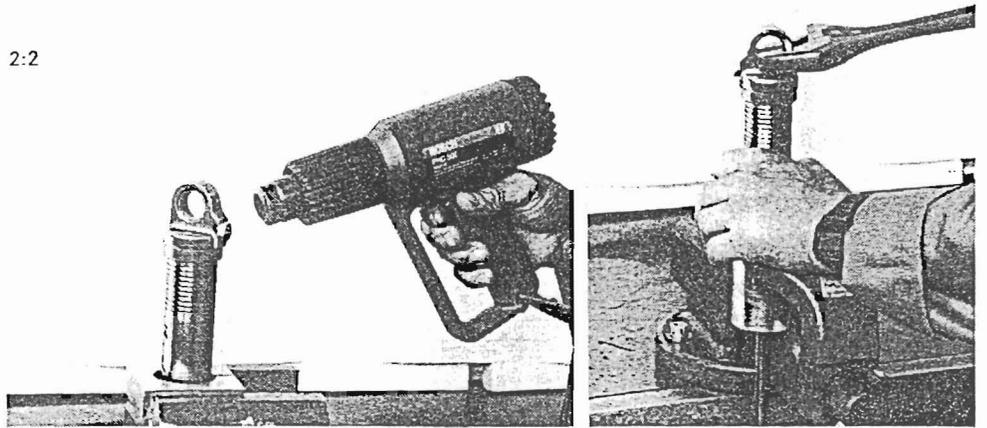
1. Remove spring (if fitted).
2. Clean shock absorber externally.
3. Use tool 791-01 to clamp shock absorber in a vice (fig. 2:1)
4. Relieve gas pressure by removing valve needle. Shock absorber with gas valve 603-01. Use tool 780-01 to relieve pressure (fig. 2:1).
5. Body tube is secured in cylinder head with Loctite. Heat cylinder head to facilitate removal (fig. 2:3). Then remove cylinder head from body tube with an adjustable wrench (fig. 2:2).
6. Remove screw in centre of separating piston. Use tool 792-01 to hold piston (fig. 2:4).
7. Take piston out. Pour fluid away.
8. Enter cylinder head by hand. Then fit shock absorber to stand 705-01 (fig. 2:5).
9. Remove scraper retainer by using a cold chisel (fig. 2:6).
10. Press seal head down using tool 714-01 (fig. 2:7).
11. Remove circlip with tool 715-01. Remove burrs, if any, from circlip groove with a riffler.
12. Remove seal head with alligator pliers.
13. Lift stop rubber away. Remove lower circlip.
14. Carefully pull piston shaft assy up.
15. Clean all parts. Hone bore of body tube. Remove burrs, if any, from end of body tube using a file (fig. 2:8).
16. Use drift 717-01 to change ball joint.

2:1

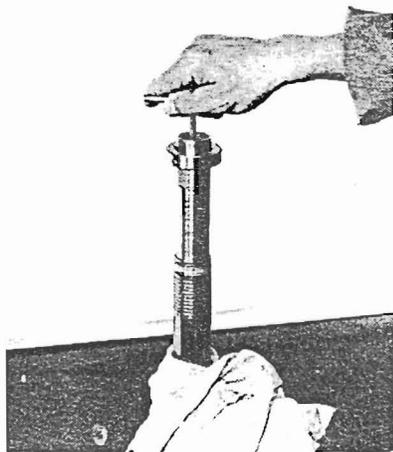


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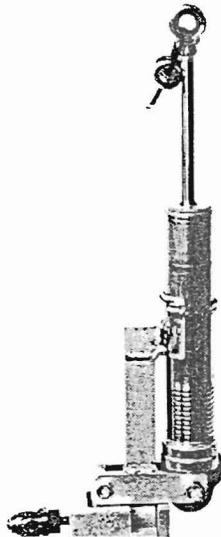
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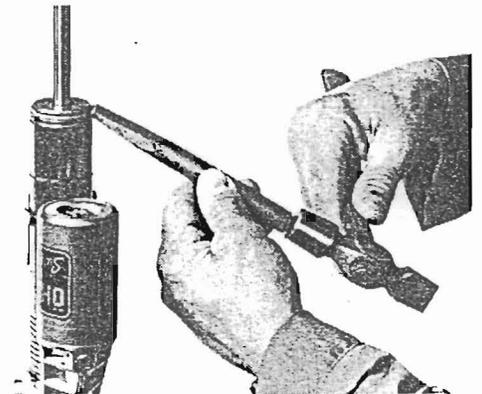
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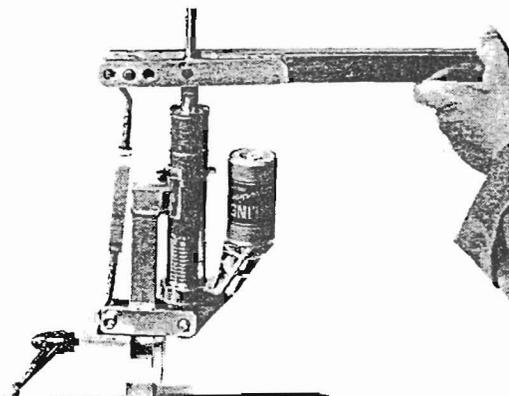
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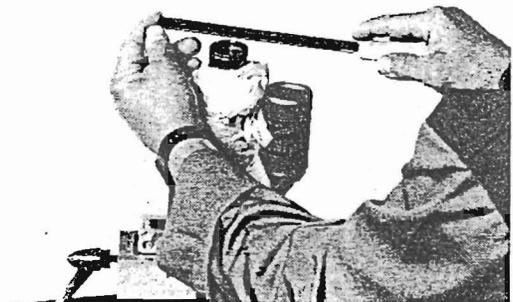
2:6



2:7



2:8



3. Instructions for dismantling shock absorber emulsion type (incl. Yamaha TSS-leg snow mobile)

1. Remove spring (if fitted).
2. Clean shock absorber externally.
3. Turn shock absorber with gas valve facing upwards. Use tool 780-01 to relieve gas pressure (fig. 3:1).
4. Fit shock absorber to stand 705-01 (fig.3:2).
5. Remove scraper retainer by using a cold chisel (fig. 3:3).
6. Press seal head down using tool 714-01 (fig. 3:4).
7. Remove circlip using tool 715-0. Remove burrs, if any, from circlip groove with a riffler.
8. Lift seal head with alligator pliers.
9. Remove lower circlip.
10. Carefully pull piston shaft assy up.
11. Pour fluid away and clean all parts.

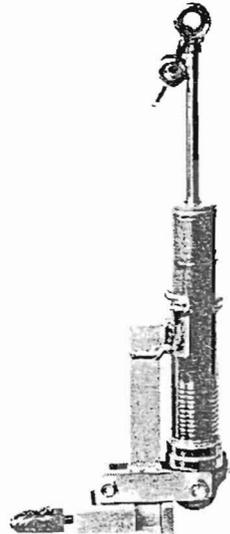
Yamaha TSS-front snow mobile.

12. Remove spring, if fitted (fig. 3:5).
13. Clean shock absorber externally.
14. Turn shock absorber with gas valve facing upwards. Use tool 780-01 to relieve gas pressure (fig. 3:6).
15. Use tool 791-01 to clamp shock absorber in a vice with piston shaft facing upwards.
16. Remove scraper retainer by using a cold chisel (fig 3:7).
17. Press seal head down by hands and remove circlip with tool 715-01.
18. Carefully pull piston shaft assy up.
19. Pour fluid away and clean all parts.

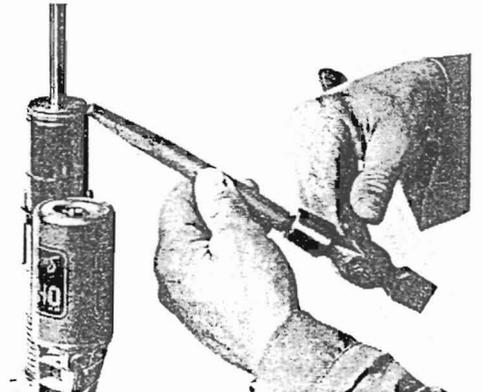
3:1



3:2

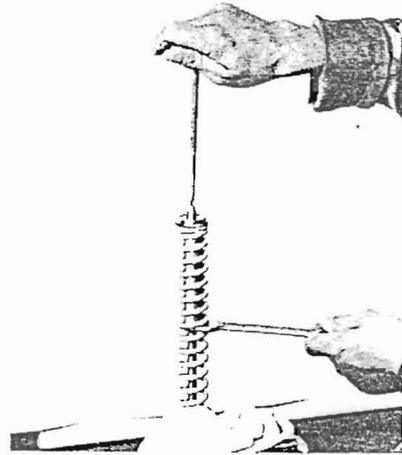
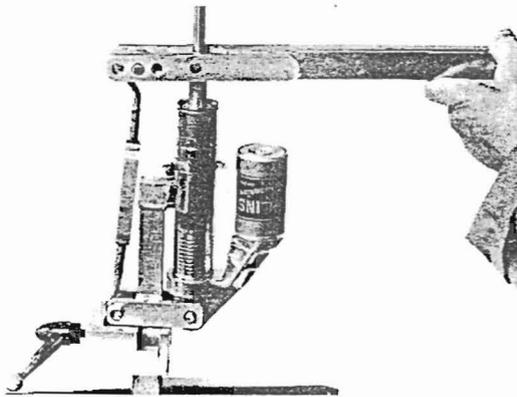


3:3



3:5

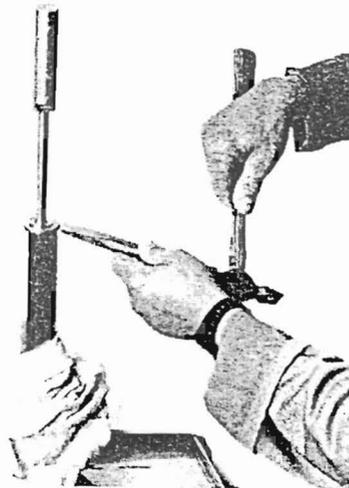
3:4



3:6



3:7

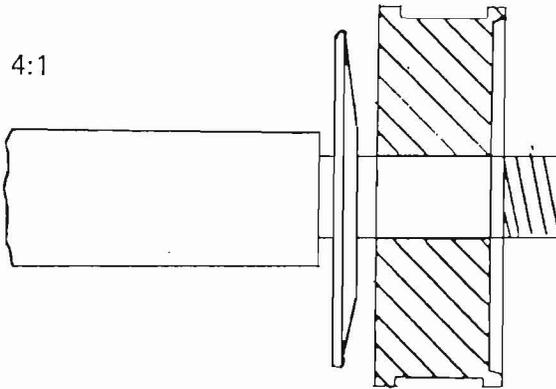


4. Instructions for dismantling and assembling piston shaft assy

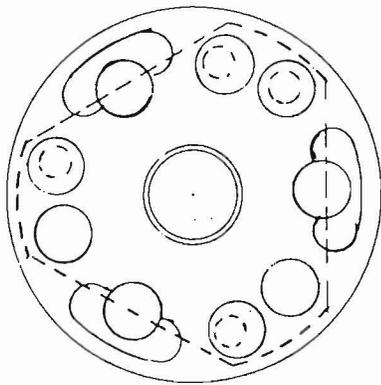
1. Remove teflon band.
2. Use special jaws 727-01 to fit shaft assy in a vice.
3. **NOTE!** Make a note of shim locations. Remove nut, rebound shims, damper piston and compression shims.
4. Remove all parts from piston shaft.
5. Scrap nut, bump rubber and teflon band.
6. Clean all parts.
7. If necessary, remove attachmant eye.
8. Check piston shaft for scratches or other external damage. Then check it for straightness. See specifications for run-out limit.

Assembling:

9. Use special jaws 727-01 to fit shaft in vice.
10. Fit attachment eye (if removed) using Loctite 270).
11. Fit new bump rubber, scraper retainer and new scraper ring. **NOTE!** Grease scraper and seal with Öhlins white grease 147-01 prior to assembly
Use assembly drift 739-01 to fit seal head. Fit top-out rubber and spacers (if any).
12. Check shims and replace if necessary.
13. Fit washer, compression shims and damper piston according to fig. 4:1.
Fit rebound shims and new nut.
14. Make sure shims are fitted correctly in relation to the piston (see fig. 4:2). Tighten nut. For tightening torque, see specifications. **NOTE!** Check position of shims after tightening.

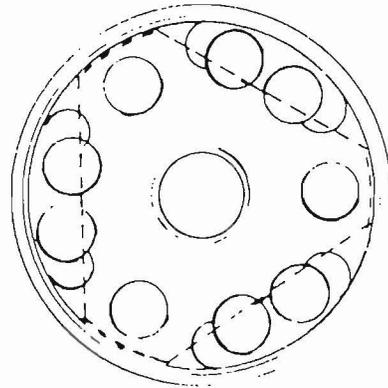


Assembly instruction for piston



Position of compression shims

4:2



Position of rebound shims

NOTE! Check position of shims after tightening.

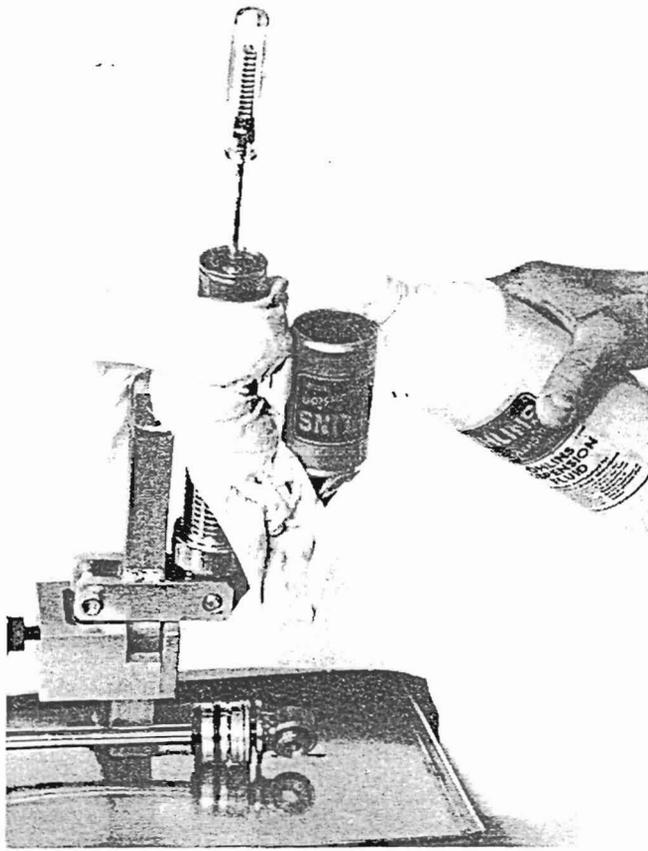
5. Instructions for assembling PIGGY-BACK shock absorber

1. Fit shock absorber body to stand 705-01.
2. Seal body tube with a plastic plug. Apply Öhlins white grease 147-01 to reservoir.
3. Carefully fill reservoir with shock absorber fluid, all the way up (fig. 5:1).
4. Fit new o-ring to gas piston. Fit teflon band (renew if necessary). Apply Öhlins white grease 147-01 to o-ring. Press piston into reservoir (fig. 5:2).
5. Remove plastic plug.
6. Fit measuring stick 720-01 to reservoir piston and press the piston to bottom in the reservoir.
7. Fill shock absorber fluid up to lower circlip groove. Pull gas piston up towards reservoir end groove.
8. Fit new teflon band to damper piston. Fit piston shaft assy into body tube. Lightly rotate shaft to seat teflon band properly against body tube bore.
9. Fit lower circlip.

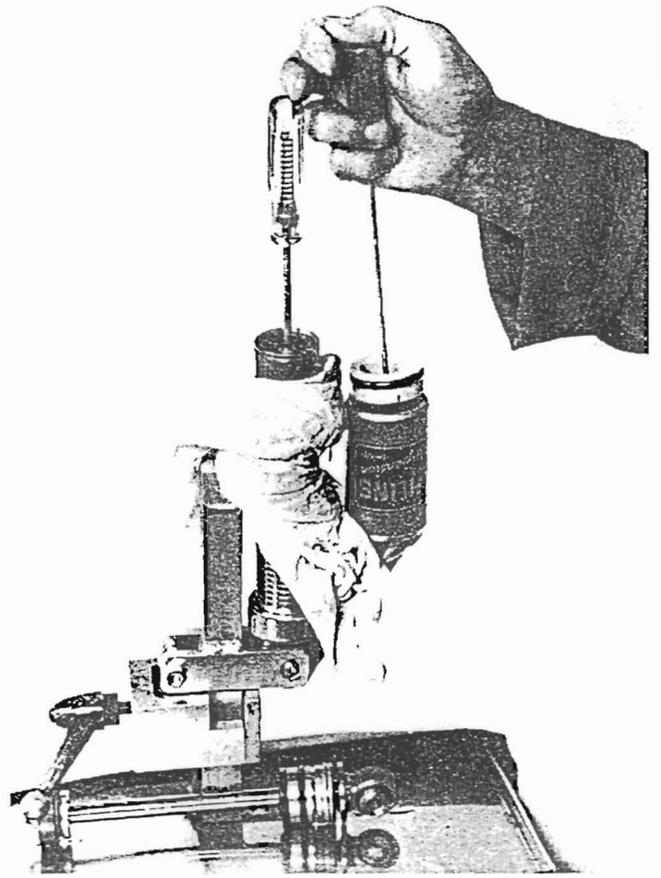
Fit seal assembly as follows

10. Press stop rubber down against circlip.
11. Press gas piston all the way down.
12. Fill shock absorber fluid to the top of the tube.
13. Press seal assy down (fig. 5:3). **NOTE!** Do not press piston shaft down until gas has been filled!
14. Fit upper circlip. Check that it seats right.
15. Lubricate scraper and press it down.
16. Drive scraper retainer down using a plastic mallet.
17. Remove measuring stick. Fit reservoir end using a new o-ring. Then fit circlip. Fit a new valve needle. Fill gas to approx. 15 bar pressure. Use pressure gauge 730-01, Shock absorber with gas valve 603-01: Use needle tool 780-01 together with pressure gauge 730-01 for gas filling and checking pressure, (fig. 5:4).
18. Check function by making a few strokes with the piston shaft.
19. Adjust gas pressure according to spec. sheet.
20. Check shock absorber for leaks by submersion in soap water
21. Fit springs and spring retainers (if supplied).

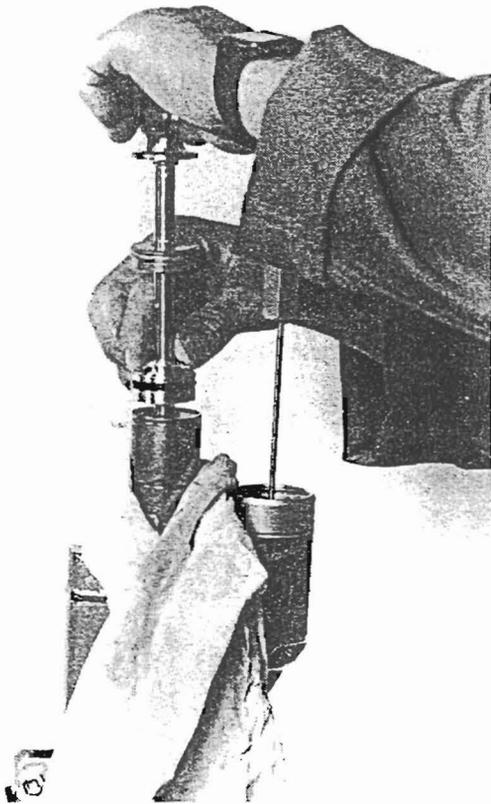
5:1



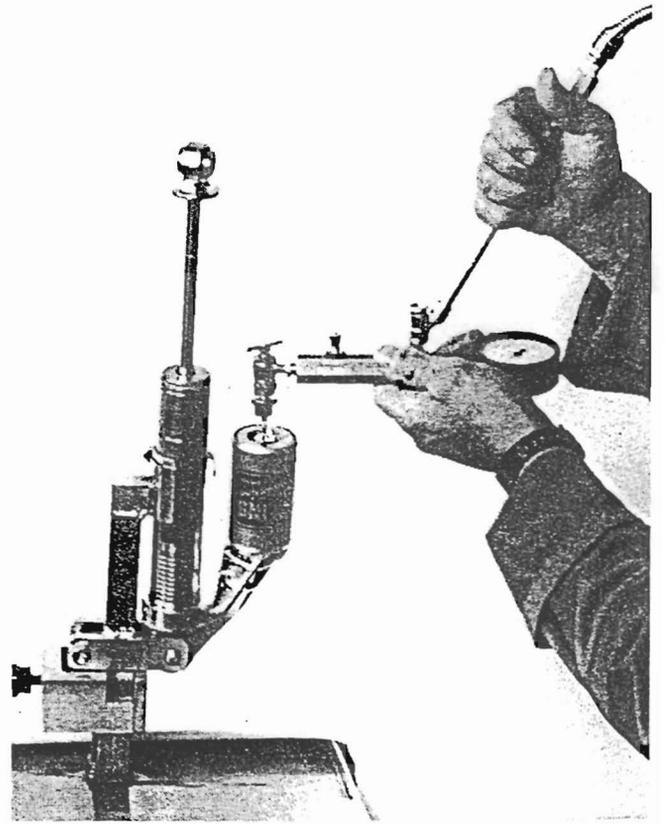
5:2



5:3



5:4



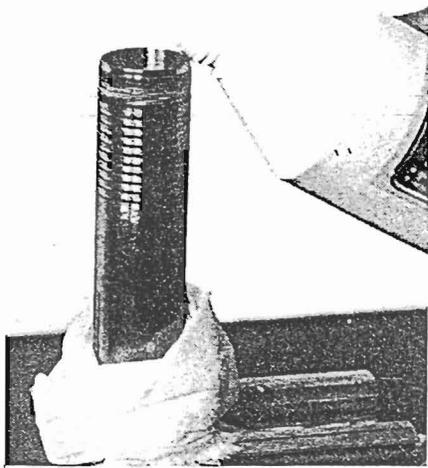
6. Instructions for assembling shock absorber featuring separating piston — snow mobile

1. Enter cylinder head by hand on body tube. Fit tube to stand 705-01
2. Fit new teflon band to damper piston. Fit piston shaft assy into body tube. Lightly rotate shaft to seat teflon band properly against body tube bore.
3. Fit lower circlip. . .
4. Fit stop rubber and press it down against circlip.
5. Grease o-ring and fit seal head into body tube.
6. Fit upper circlip. Check that it seats right.
7. Lubricate scraper and press i down.
8. Drive scraper retainer in place using a plastic mallet.

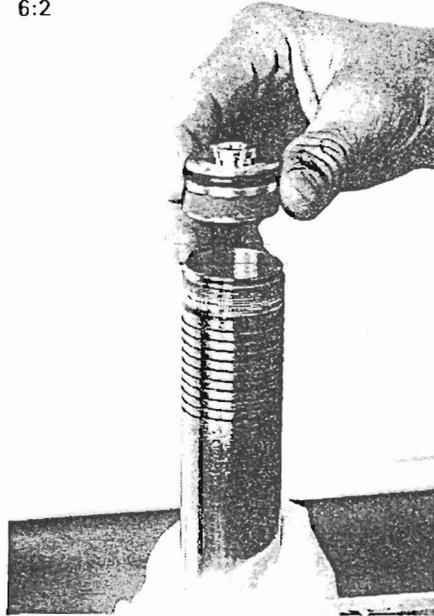
Fill fluid as follows:

9. Undo cylinder head. Clamp body tube in a vice using tool 791-01.
10. Pull piston shaft all the way out.
11. Fill fluid up to the top of the tube (fig. 6:1).
12. Make pumping strokes with piston shaft to release trapped air under piston. Then top-up with more fluid, up to the edge of the body tube.
13. Fit teflon band to separating piston (leave piston screw). Grease o-ring and band. Fit separating piston (fig. 6:2).
14. See spec. sheet for distance between piston and upper edge (position of separating piston).
15. Fit centre screw into separating piston. Use tool 792-01 to hold piston (fig. 6:3).
16. Wipe exess fluid off. Wash thread with suitable degreaser. Apply Loctite 270 to body tube thread. Fit and tighten cylinder head (fig.6:4)
17. Fit needle valve. Fill gas using pressure gauge 730-01. Shock absorber with gas valve 603-01: use needle tool 780-01 together with pressure gauge 730-01 for gas filling and checking pressure (fig. 6:5).
18. Adjust gas pressure according to spec. sheet.
19. Fit springs and spring retainerns (if supplied).

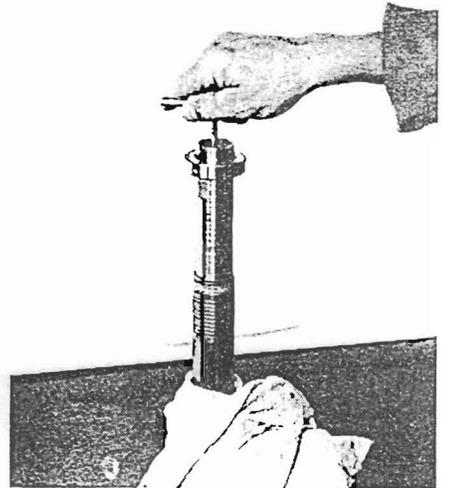
6:1



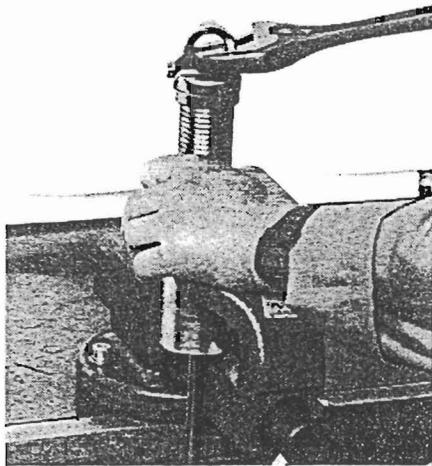
6:2



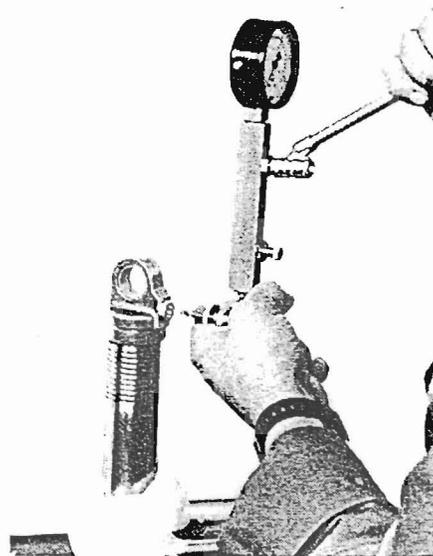
6:3



6:4



6:5



7. Instructions for assembling shock absorber emulsion type (incl. YAMAHA TSS-leg snow mobile)

1. Fit shock absorber to stand 705-01, make sure that gas valve is fitted.
2. Fill fluid up to right level according to spec. sheet.
3. Fit new teflon band to damper piston. Fit piston shaft into body tube. Lightly rotate shaft to seat teflon band properly against body tube bore.
4. Fit lower circlip.
5. Fit stop rubber and press it down against circlip.
6. Grease o-ring and fit seal head into body tube.
7. Fit upper circlip. Check that it seats right.
8. Lubricate scraper and press it down
9. Drive scraper retainer in place using a plastic mallet.
10. Turn shock absorber with gas valve facing upwards.
11. Fill gas using pressure gauge 730-01. Shock absorber with gas valve 603-01 use needle tool 780-01 together with pressure gauge 730-01 for gas filling and checking pressure.
12. Adjust gas pressure according to spec. sheet.
13. Fit spring and spring retainers (if supplied).

Assembling YAMAHA TSS-leg (snow mobile)

1. Use tool 791-01 and fit body tube in a vice.
2. Continue assembling according point 3-9 above. (Except stop rubber).
3. Turn shock absorber with piston shaft facing down.
4. Fill fluid up to right level according to spec. sheet.
5. Fit gas valve end and circlip, continue assembling according to point 11-13 above.

Technical specifications Öhlin twin shock

Section

4:8 Straightness, shaft. Permissible run-out 0,08 mm

4:14 Tightening torque for piston nut 15 Nm. (11 ft/lb)

For security locking of end eye or end bracket use Loc-Tite 270.

Always use Öhlins Suspension Fluid

NB: Recommended gas pressure (see spec. sheet) should be followed in order to reach optimal function of the shock absorber.

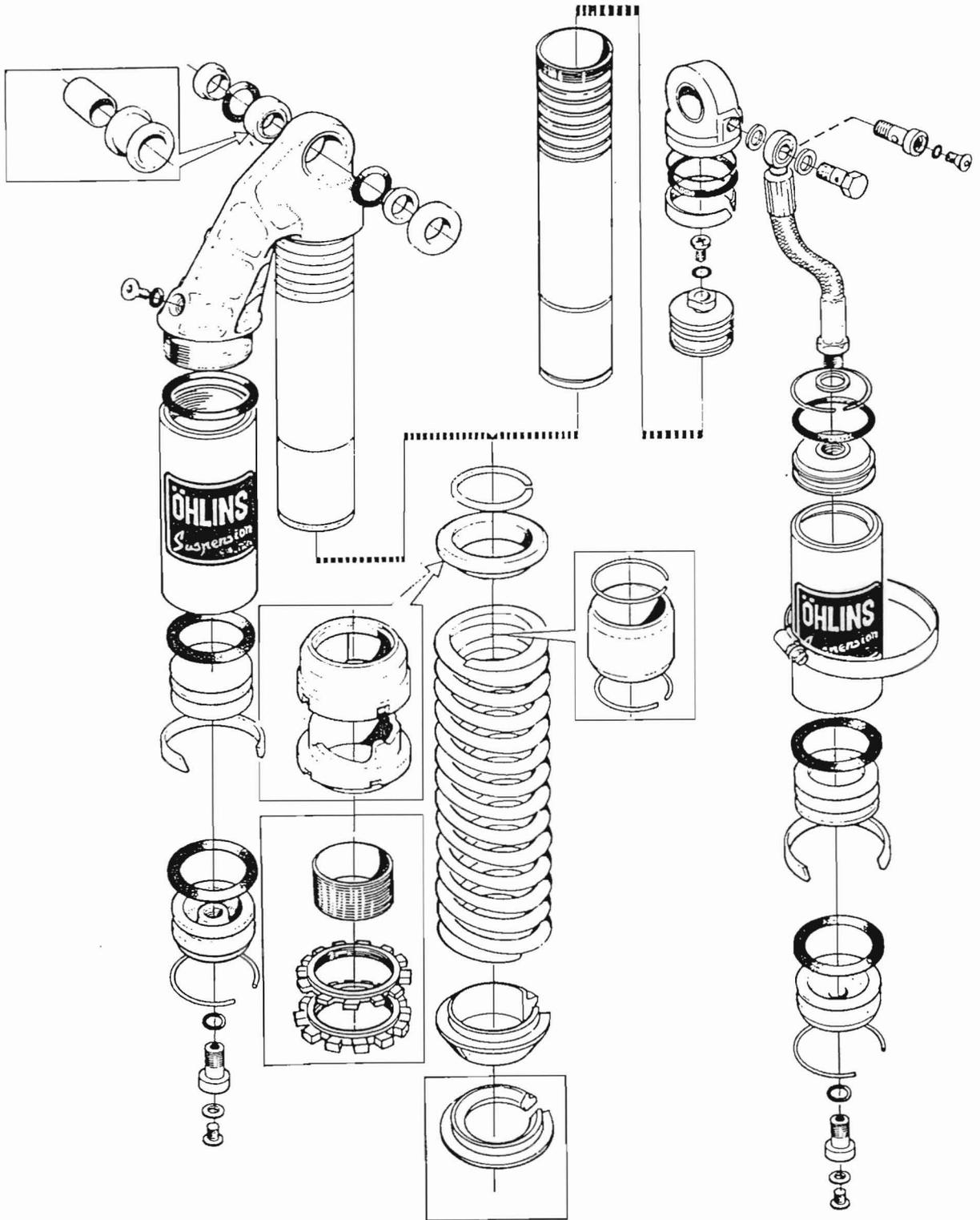
CAUTION!

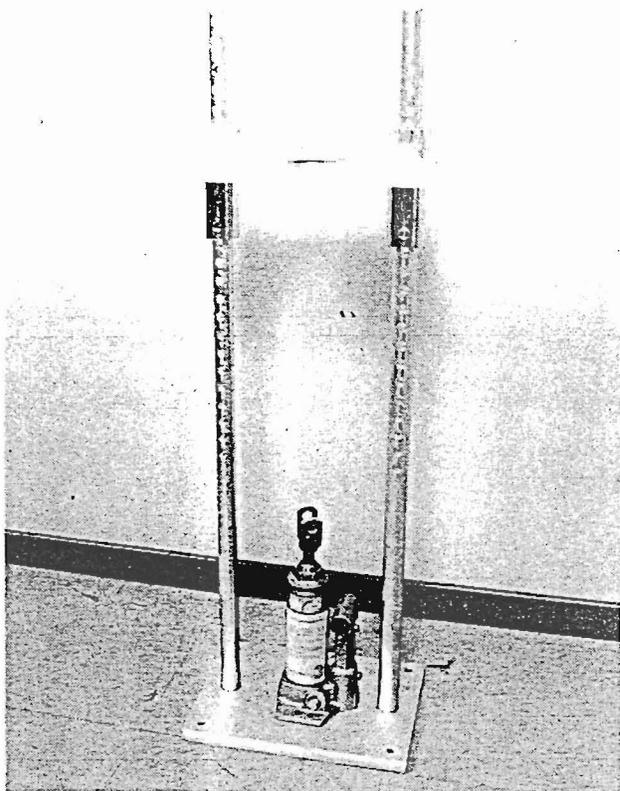
When filling nitrogen gas with valve 603-01 the tool in combination with 730-01 **MUST** be used.

Take extreme care when the needle tool 780-01 is used.

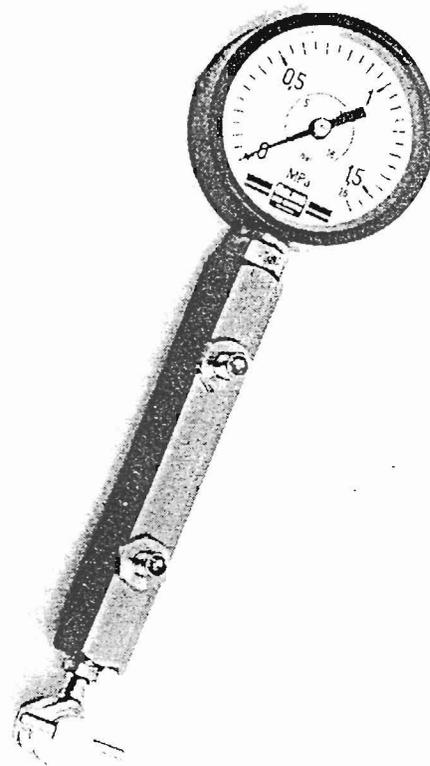
Use protection gloves of thick leather.

If you get stung by the needle when the gas pressure is on you **must immediately** consult a doctor.





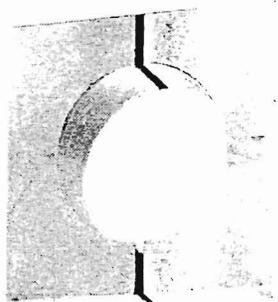
747-01



730-01

Including adapter ring for twin shock spring.
Part No: 781-01

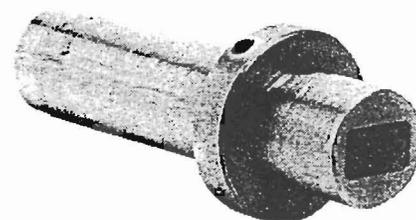
Inklusive adapterring för twin fjädrar
Detalj No: 781-01



791-01



780-01



792-01



714-01



735-01



705-01



717-01



739-01



734-01



736-01



715-01



716-01



720-01



727-01