

SCUBAPRO

Repair Guide

MK 25/MK 20

First Stages




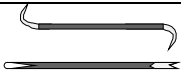



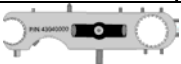

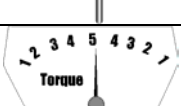






**USE THIS GUIDE AS A REFERENCE WHEN SERVICING
THE MK 25 AND MK 20 FIRST STAGES**








SCUBAPRO MK 25/MK 20 First Stages

TOOLS NEEDED FOR REPAIR OF MK 25-MK 20



| Quantity | Part Number | Description | |
|----------|-----------------------------|---------------------------|---|
| 1 | | Ratchet |  |
| 1 | 20-155-500 (Peter Built) | 1" Yoke Nut Socket |  |
| 1 | 20.150-200 (Peter Built) | MK 25/MK 20 Assembly Tool |  |
| 1 set | 10.102.100 (Peter Built) | Brass o'ring picks |  |
| 1 tube | 41.047.000 | Christo-Lube |  |
| 1 | 47.010.000 | Counter Mat |  |
| 1 | 41.496.101 | Lubricant syringe |  |
| 1 | 43.040.000 | Universal Tool |  |
| 1 | 20-115-100 (Peter Built) | First Stage Handle |  |
| 1 | | Torque Wrench |  |
| 1 | | Hex Key Set |  |
| 1 | | Crescent wrench |  |
| 1 | 20.500.200 (Peter Built) | Pneumatic Adjusting tool |  |
| 1 | 18.300.500 (Peter Built) | Blow Gun/Air Nozzle |  |






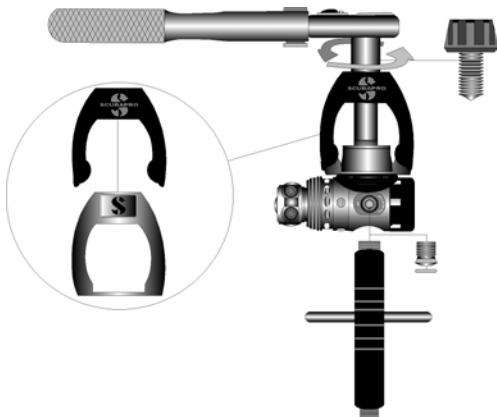
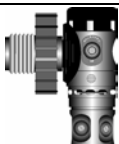




ICON LEGEND

| | | |
|---|---|--|
|  | Inspect carefully, replace if needed | |
|  | Lubricate properly | |
|  | Replace annually | |
|  | Dynamic o'ring, lubricate properly | |
|  | No tools needed for this step | |
|  |  | Indicates the regulators affected by this step |




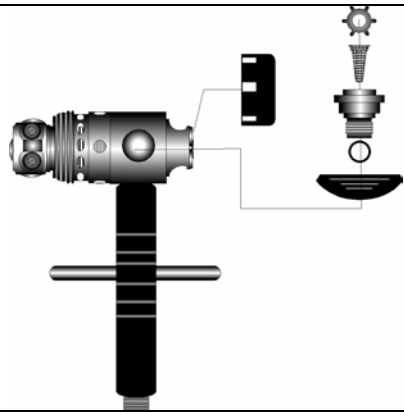
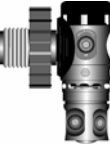

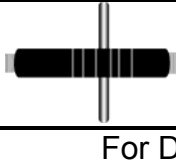
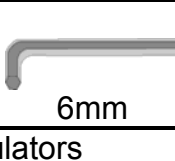
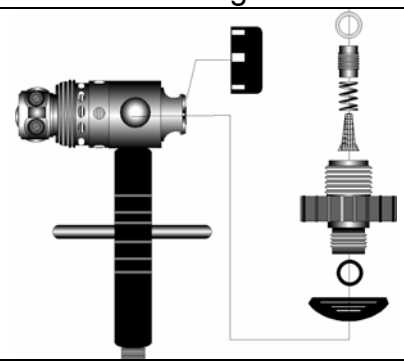




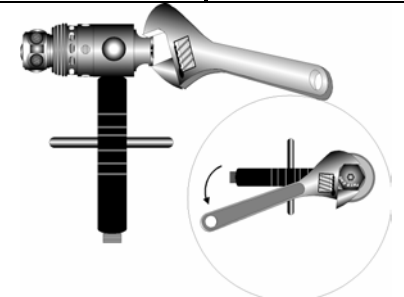
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Important note: The following information is not designed to be a complete training guide for servicing the listed SCUBAPRO regulators. All SCUBAPRO technicians are required to attend an annual service training program to insure safe handling and servicing of SCUBAPRO products. All SCUBAPRO technicians must be employed by an authorized SCUBAPRO facility.




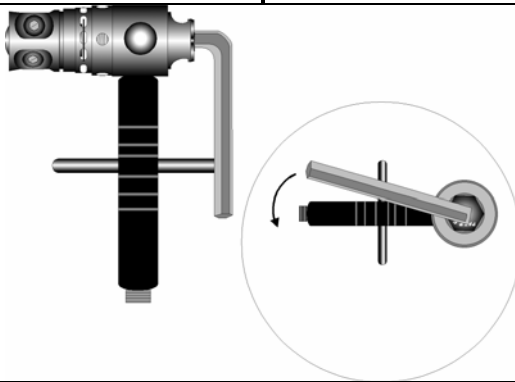




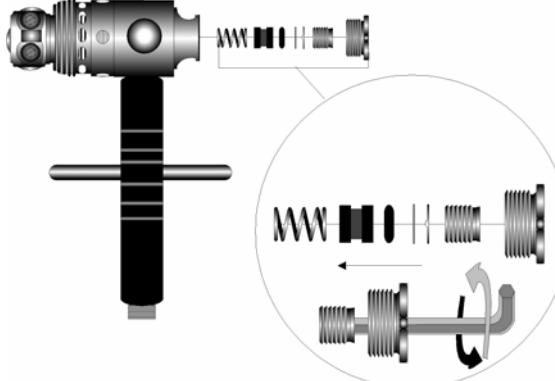



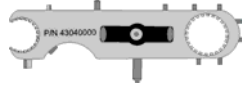
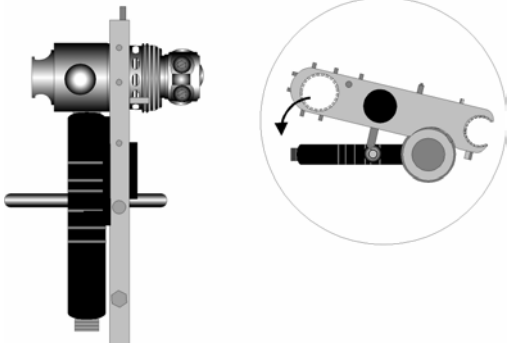
SCUBAPRO MK 25/MK 20 First Stages

| | | | | |
|---|---|--|--|---|
|  |  |  |  |  |
| <p>Remove all hoses.</p> <p>Thread the first stage handle into the high-pressure port as shown.</p> <p>Use the ratchet and yoke nut socket to remove the yoke nut from the first stage.</p> <p>Remove the yoke cover if cleaning the yoke is indicated.</p> | |  | | |
|  |  |  |  5/32" | |
| <p>Remove all hoses.</p> <p>Thread the first stage handle into the high-pressure port as shown.</p> <p>Loosen the filter retainer using a 5/32" hex wrench.</p> | | <p>For DIN Regulators</p>  | | |







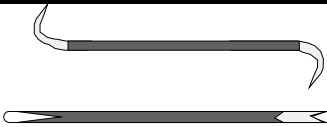
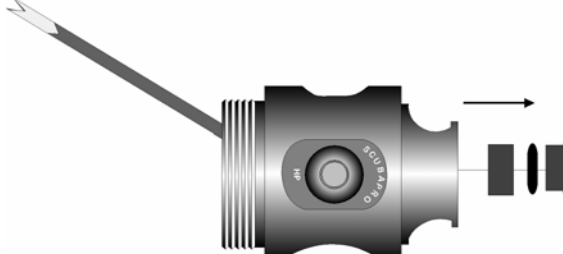




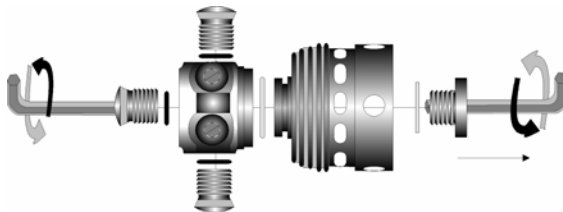
SCUBAPRO MK 25/MK 20 First Stages

| | | | |
|---|---|---|--|
|  |  |  | |
| <p>Remove the yoke nut and cap from the first stage.</p> <p>Loosen the star clip and remove the filter.</p> <p>Remove the yoke nut o'ring.</p> | |  | |
|  |  |  |  6mm |
| <p>Remove the filter retainer, spring, filter, DIN adapter and o'ring.</p> <p>Loosen the DIN fitting using a 6mm hex wrench.</p> <p>Remove the end cap.</p> | | <p>For DIN Regulators</p>  | |
|  |  |  |  |
| <p>Loosen the seat retainer using a properly sized wrench while holding the first stage with a first stage handle.</p> | |  | |





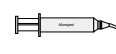

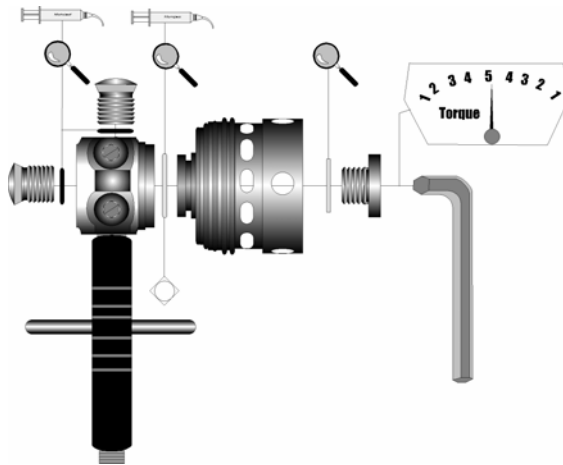




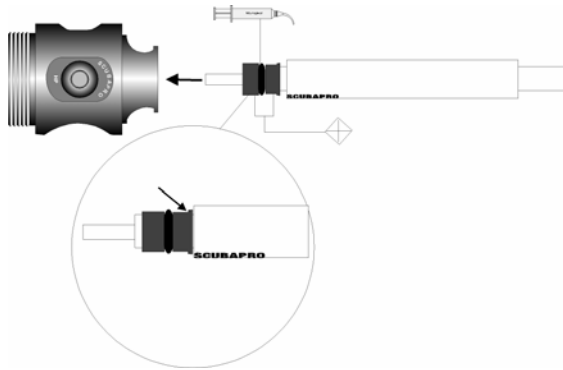
SCUBAPRO MK 25/MK 20 First Stages

| | | | |
|---|---|--|---|
|  | |  3/8" |  |
| <p>On some early models of the MK 20 this was loosened using a 3/8" hex wrench.</p> <p>Loosen the seat retainer while holding the first stage with a first stage handle.</p> | |  | |
|  |  |  |  5/32" |
| <p>Remove the seat retainer. The high-pressure seat assembly and spring can now be removed.</p> <p>On the current version of the MK 25 the seat retainer is adjustable. Disassemble for cleaning using a 5/32" hex wrench.</p> <p>NOTE: The adjusting screw is turned <u>clockwise</u> to remove.</p> | |  | |
|  |  |  |  PIN 43040000 |
| <p>Use the universal tool to loosen the cap from the body. Hold the regulator body with a first stage handle.</p> | |  | |




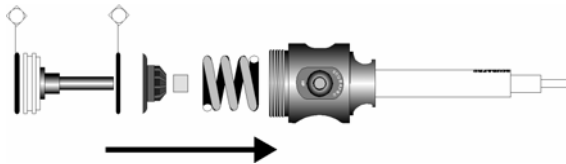



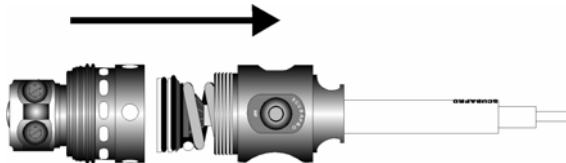


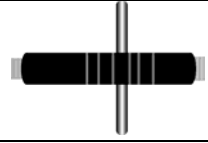
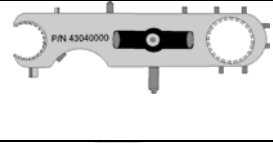
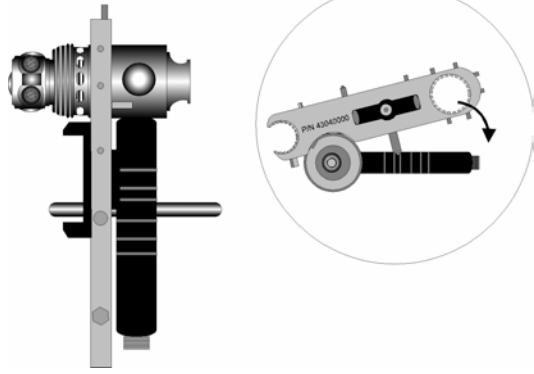
SCUBAPRO MK 25/MK 20 First Stages

| | | | |
|--|---|---|--|
|  |  |  | No tools needed this step |
| Separate the cap from the regulator body. Carefully remove the piston assembly and spring. | |  | |
|  |  |  | |
| Use the brass pick (blunt end) to carefully push the piston stem o'ring assembly from the regulator body. | |  | |
|  |  |  7/32" |  5/32" |
| Use a 7/32" hex wrench to remove the swivel retainer from the regulator cap. Use a 5/32" hex wrench to remove the low-pressure plugs. | |  | |






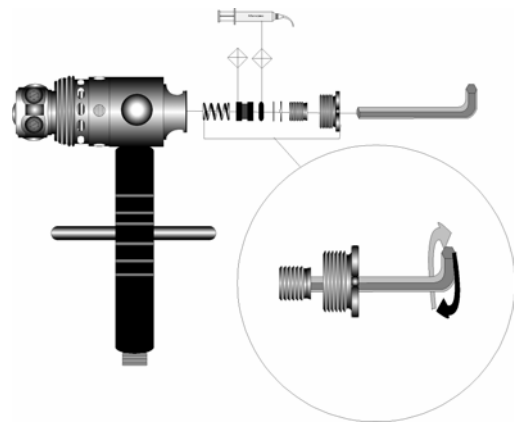
SCUBAPRO MK 25/MK 20 First Stages



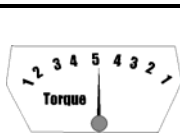


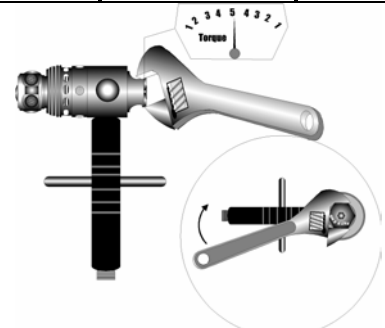


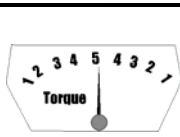


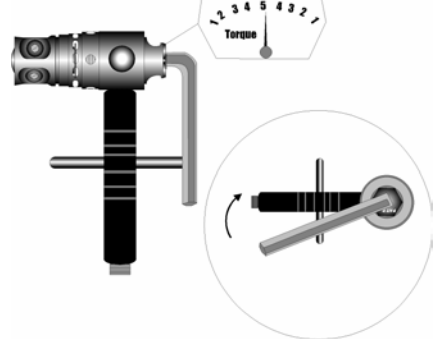
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|---|--|--|---|---|--|
|  |  |  |  |  |  7/32" |
| <p>Following cleaning, inspect and lubricate o'rings and washer as shown.</p> <p>Reassemble the swivel retainer to the regulator cap using a 7/32" hex and torque wrench. Apply 70 in-lbs/8 N-m.</p> | |  | | | |
|  |  |  |  | | |
| <p>Insert the stem o'ring assembly using the stem o'ring insertion tool. The o'ring should be lubricated to dynamic specifications.</p> <p>Note that the washer with the ledge should be placed as shown during reassembly.</p> <p>Push the assembly into the regulator body.</p> | |  | | | |

SCUBAPRO MK 25/MK 20 First Stages





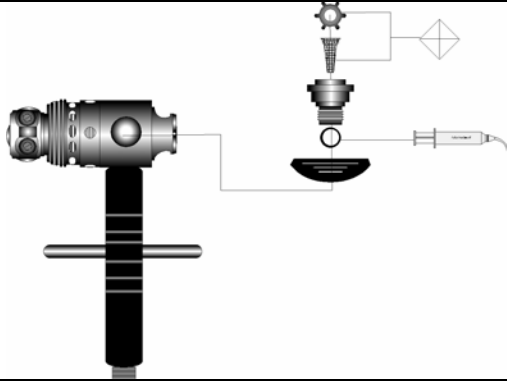

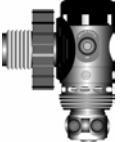


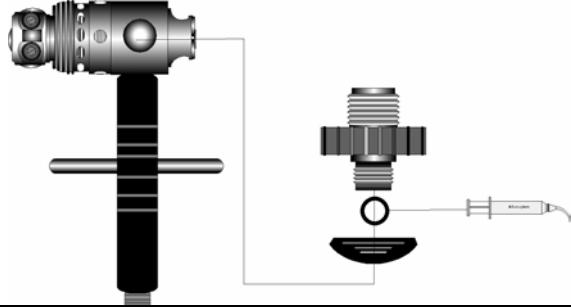




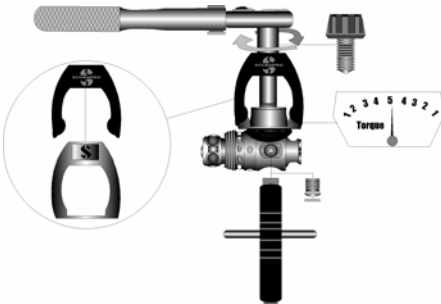
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|  |  |  | |
| <p>Remove the insertion tool by twisting slightly and then pulling out, then reverse the tool and re-insert it into the regulator body.</p> <p>Reassemble the piston assembly. Replace and lubricate the piston o'rings.</p> <p>Hold the o'ring insertion tool in place to insure that the piston knife-edge is not damaged during assembly.</p> | |  | |
|  |  |  | |
| <p>Thread the cap and swivel assembly on the regulator body. Hold the o'ring insertion tool in place to insure that the piston knife-edge is not damaged during assembly.</p> | |  | |
|  |  |  |  |
| <p>Tighten the regulator body to the cap and swivel assembly using the first stage handle and the universal tool as shown.</p> | |  | |


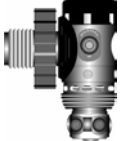


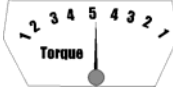

SCUBAPRO MK 25/MK 20 First Stages


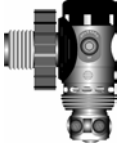
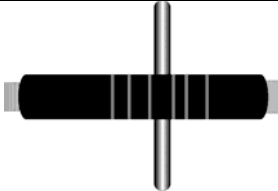
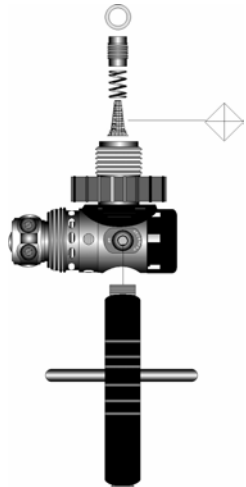
| | | | | |
|---|---|--|---|--|
|  |  |  |  |  5/32" |
| <p>Replace the high-pressure seat and replace/lubricate the high-pressure o'ring. With the spring and the spacer, Insert in the regulator body.</p> <p>In the MK 25 the adjusting screw should be re-inserted into the high-pressure seat retainer using a 5/32" hex wrench.</p> <p>NOTE: To tighten the adjustment screw, turn <u>counter-clockwise</u>.</p> | |  | | |

| | | | | |
|--|---|--|---|---|
|  |  |  |  |  |
| <p>Tighten the high-pressure seat retainer.</p> <p>Use a torque wrench to tighten to 130 in-lbs/15 N-m.</p> | |  | | |
|  |  |  |  |  3/8" |
| <p>On some early models of the MK 20 the seat retainer is tightened using a 3/8" hex wrench.</p> <p>Tighten the high-pressure seat retainer.</p> <p>Use a torque wrench to tighten to 130 in-lbs/15 N-m.</p> | |  | | |


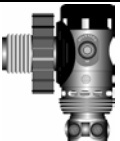

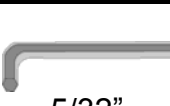
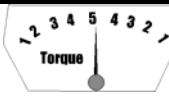
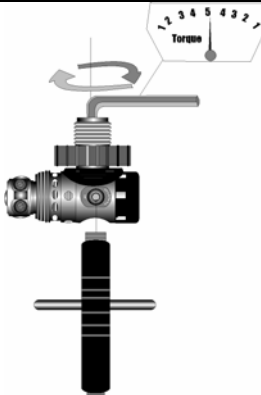
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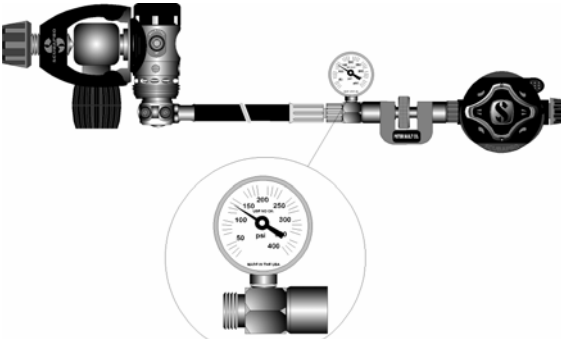
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|---|---|--|---|
|  |  |  |  |
| <p>Replace the filter and star retainer. Lubricate the yoke nut o'ring.</p> <p>Insert the filter, o'ring, and star retainer into the yoke nut. Assemble with the yoke saddle.</p> | |  | |
|  |  |  |  |
| <p>Lubricate the DIN fitting-to-body o'ring. Assemble the o'ring and DIN fitting to the regulator body.</p> | | <p>For DIN Regulators</p>  | |
|  |  |  |  |
| <p>Reassemble and tighten the yoke nut to the regulator body. Torque to 266 in-lbs/30 N-m.</p> <p>Place the yoke cover on the yoke.</p> | |  | |




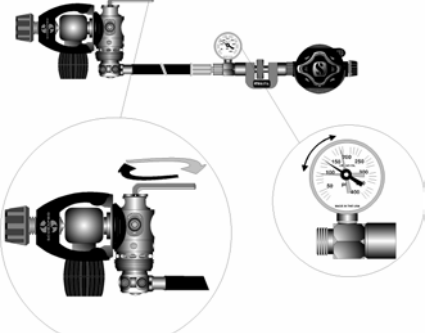
| | | | | |
|--|---|--|---|---|
|  |  |  |  |  |
| | | For DIN Regulators | | |
| <p>Tighten the DIN fitting using a 6mm hex. Torque to 266 in-lbs/30 N-m.</p> <p>Hold the first stage using the first stage handle.</p> | |  | | |

| | | | | |
|---|---|--|--|--|
|  |  |  | | |
| | | For DIN Regulators | | |
| <p>Replace the filter and assemble the spring, filter and filter retainer in the DIN fitting.</p> | |  | | |




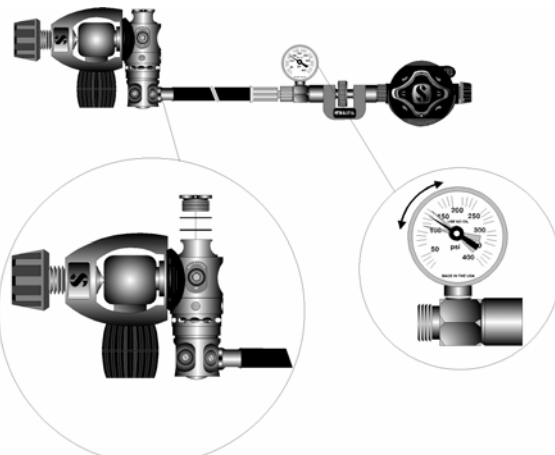



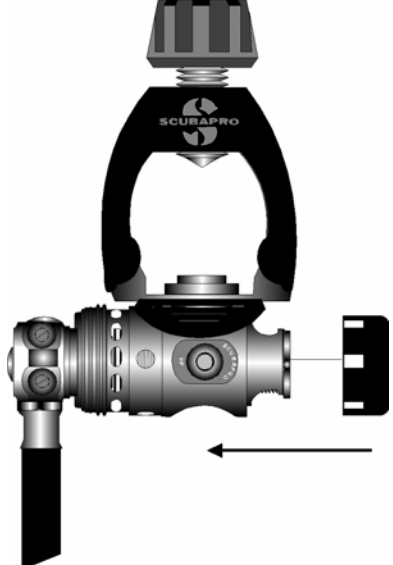
SCUBAPRO MK 25/MK 20 First Stages

| | | | | |
|---|---|--|---|---|
|  |  |  |  |  |
| Tighten the filter retainer with a 5/32" hex. Torque to 35 in-lbs/4 N-m. Hold the first stage using the first stage handle. | | For DIN Regulators | | |
| | |  | | |

| | | | | |
|---|---|---|--|--|
|  |  |  | | |
| Check the intermediate pressure using the pneumatic adjusting tool. Intermediate pressure range: 125psi to 145psi at 3000psi and 300psi supply pressure. | |  | | |

| | | | |
|--|---|--|---|
| |  |  |  |
| Intermediate pressure adjustments can be made using the adjusting screw on the high-pressure seat retainer. Use a 5/32" hex wrench. CAUTION: Be certain that supply air is turned off and regulator is purged prior to making adjustments. | |  | |

SCUBAPRO MK 25/MK 20 First Stages

| | | | |
|--|--|--|---|
|  | |  3/8" |  |
| <p>Earlier models of MK 20 can be adjusted by adding/removing shims. Each can adjust the intermediate pressure 5 – 10 psi.</p> | |  | |
|  |  |  | <p>No tools needed this step</p> |
| <p>Replace the cap on the regulator body.</p> | |  | |