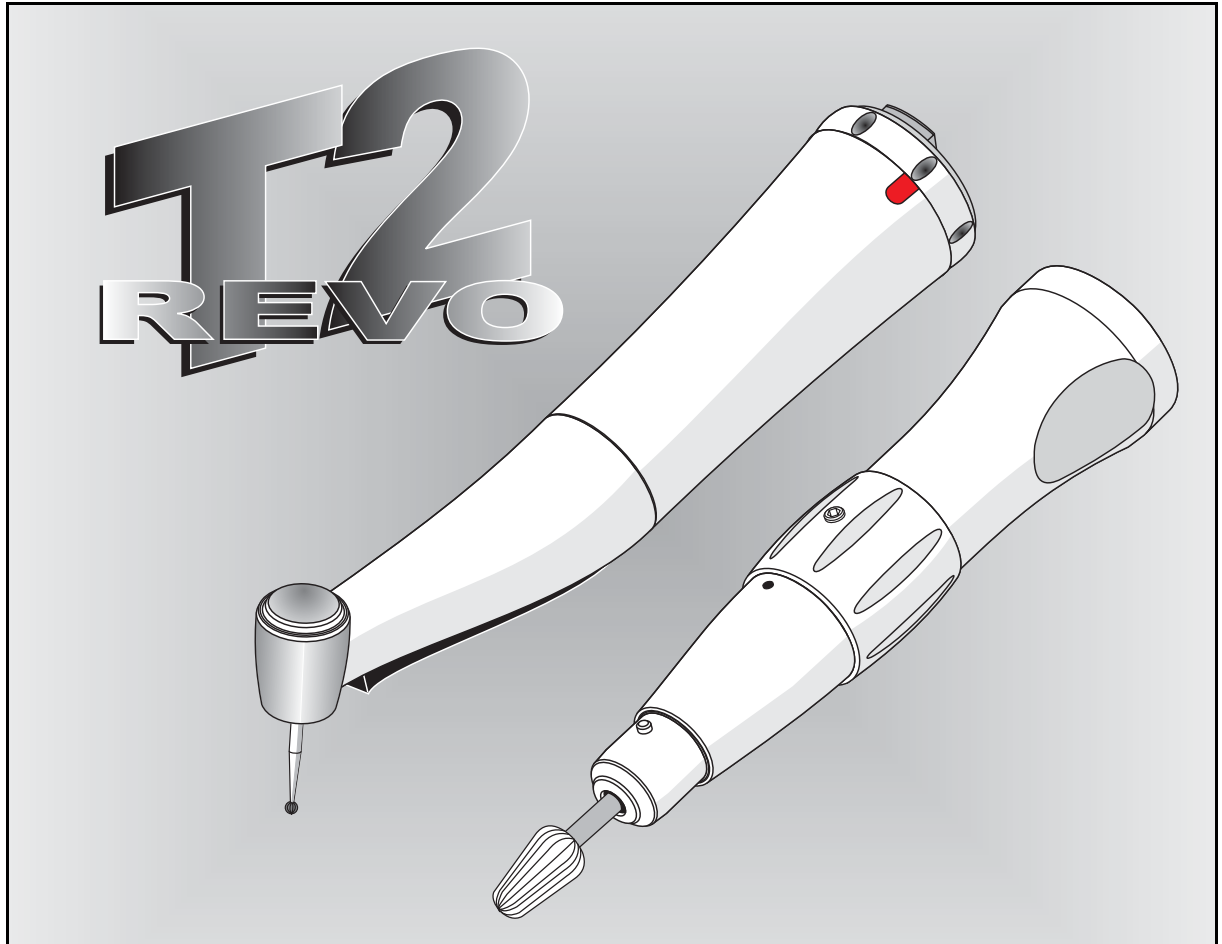


T2 REVO Preparation System

Repair Instructions

English

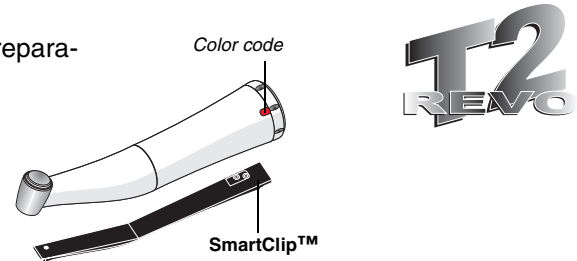




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All straight and contra-angle handpieces of the T2 REVO preparation system are related closely to one another technically.

A *color code* assigns the contra-angle handpiece to the corresponding speed and functional range.



T2 REVO R 170, red

Gear ratio 1:4.2
Maximum working speed 170,000 rpm
Pushbutton clamping system FG 1.6 mm
with replaceable SmartClip™:

T2 REVO R 170 ISL

with internal spray
and light guide



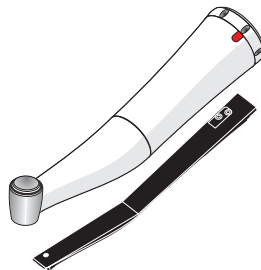
T2 REVO R 170 IS

with internal spray
without light guide



T2 REVO R 170 ES

with external spray
without light guide



T2 REVO R 6, green

Gear ratio 6:1
Maximum working speed 6,000 rpm
Pushbutton clamping system WB 2.35 mm
with replaceable SmartClip™:

T2 REVO R 6 ISL

with internal spray
and light guide



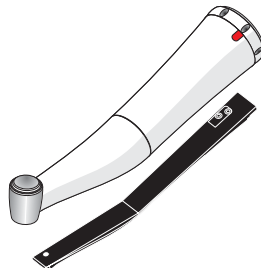
T2 REVO R 6 IS

with internal spray
without light guide



T2 REVO R 6 ES

with external spray
without light guide



T2 REVO R 40, blue

Gear ratio 1:1
Maximum working speed 40,000 rpm
Pushbutton clamping system WB 2.35 mm
with replaceable SmartClip™:

T2 REVO R 40 ISL

with internal spray
and light guide



T2 REVO R 40 IS

with internal spray
without light guide



T2 REVO R 40 ES

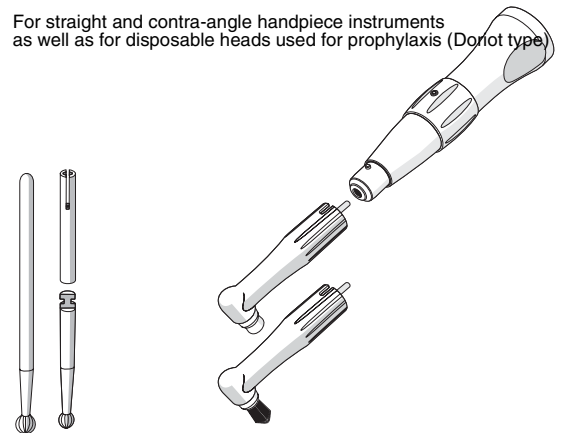
with external spray
without light guide

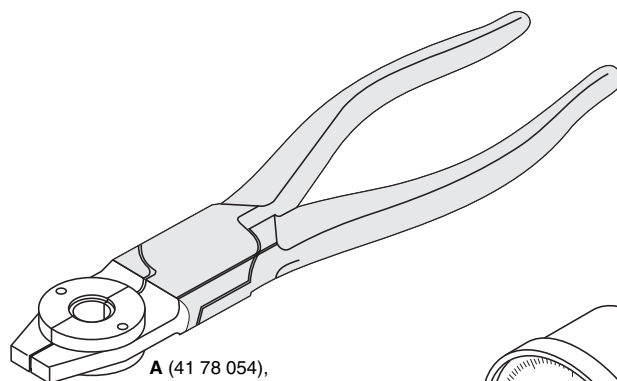
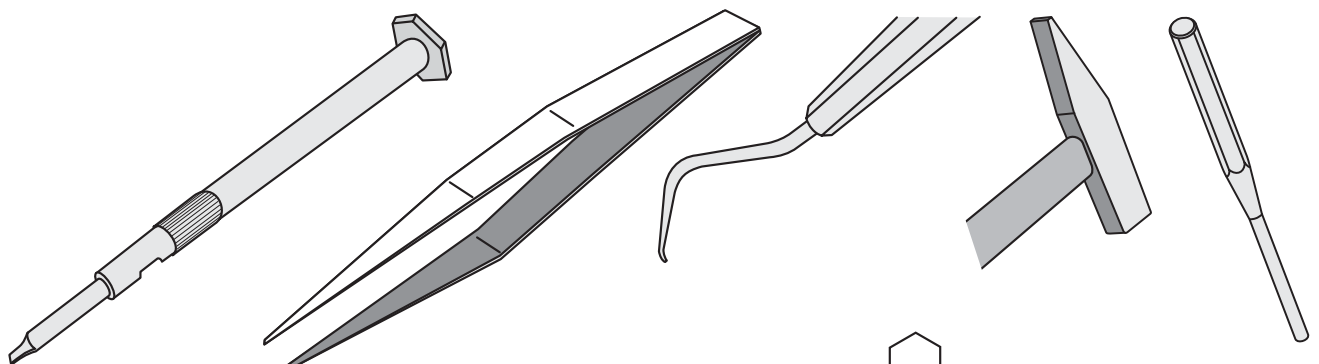


T2 REVO RH 40 straight handpiece

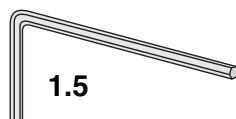
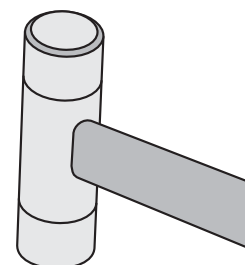
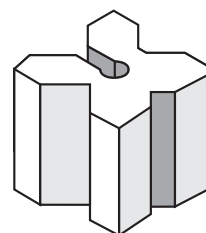
Gear ratio 1:1
Maximum working speed 40,000 rpm
Pushbutton clamping system H/WB 2.35 mm

For straight and contra-angle handpiece instruments
as well as for disposable heads used for prophylaxis (Doriot type)

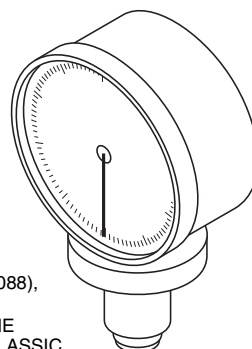




A (41 78 054),
same tool
for T1 LINE
and T1 CLASSIC



1.5

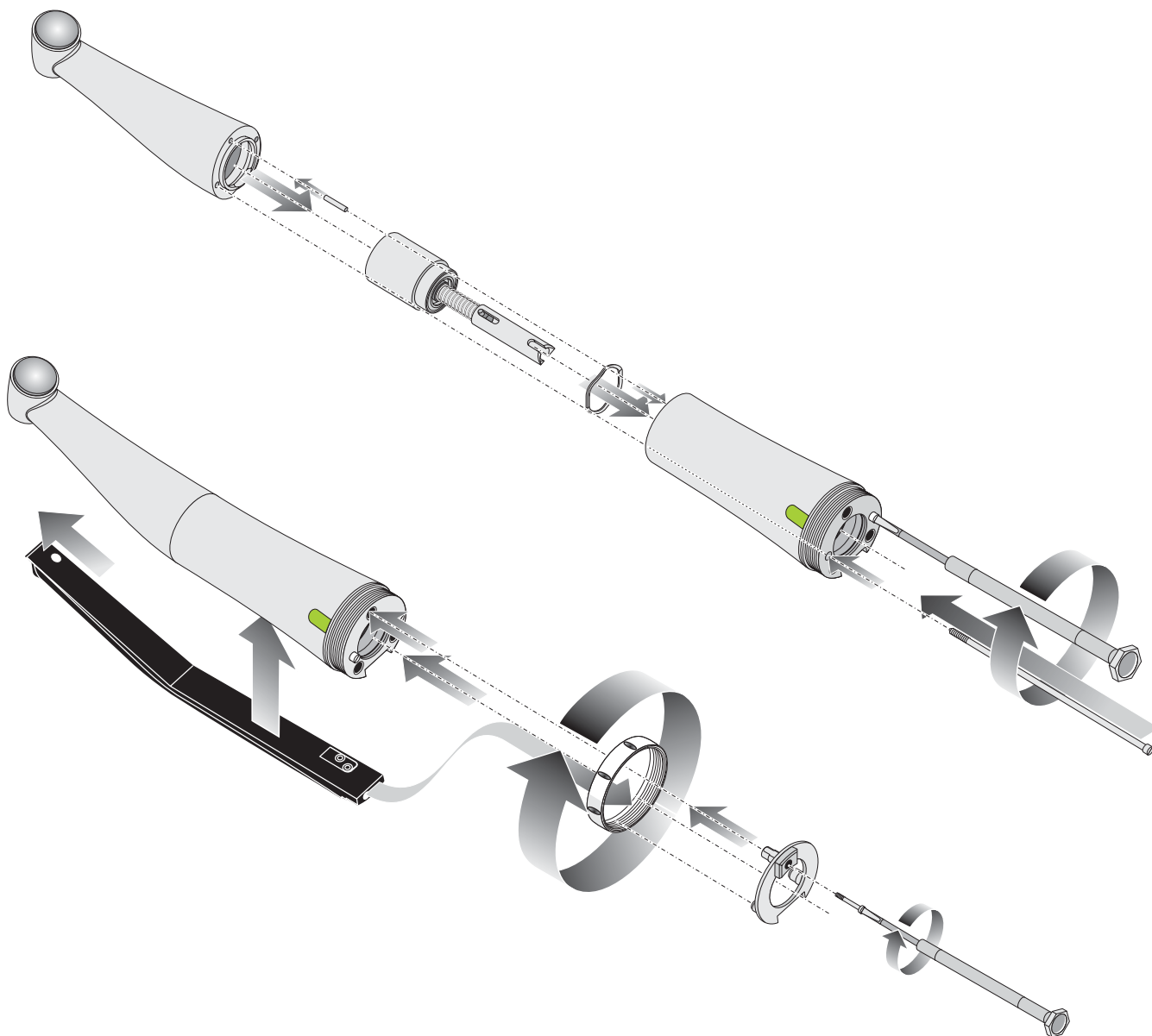


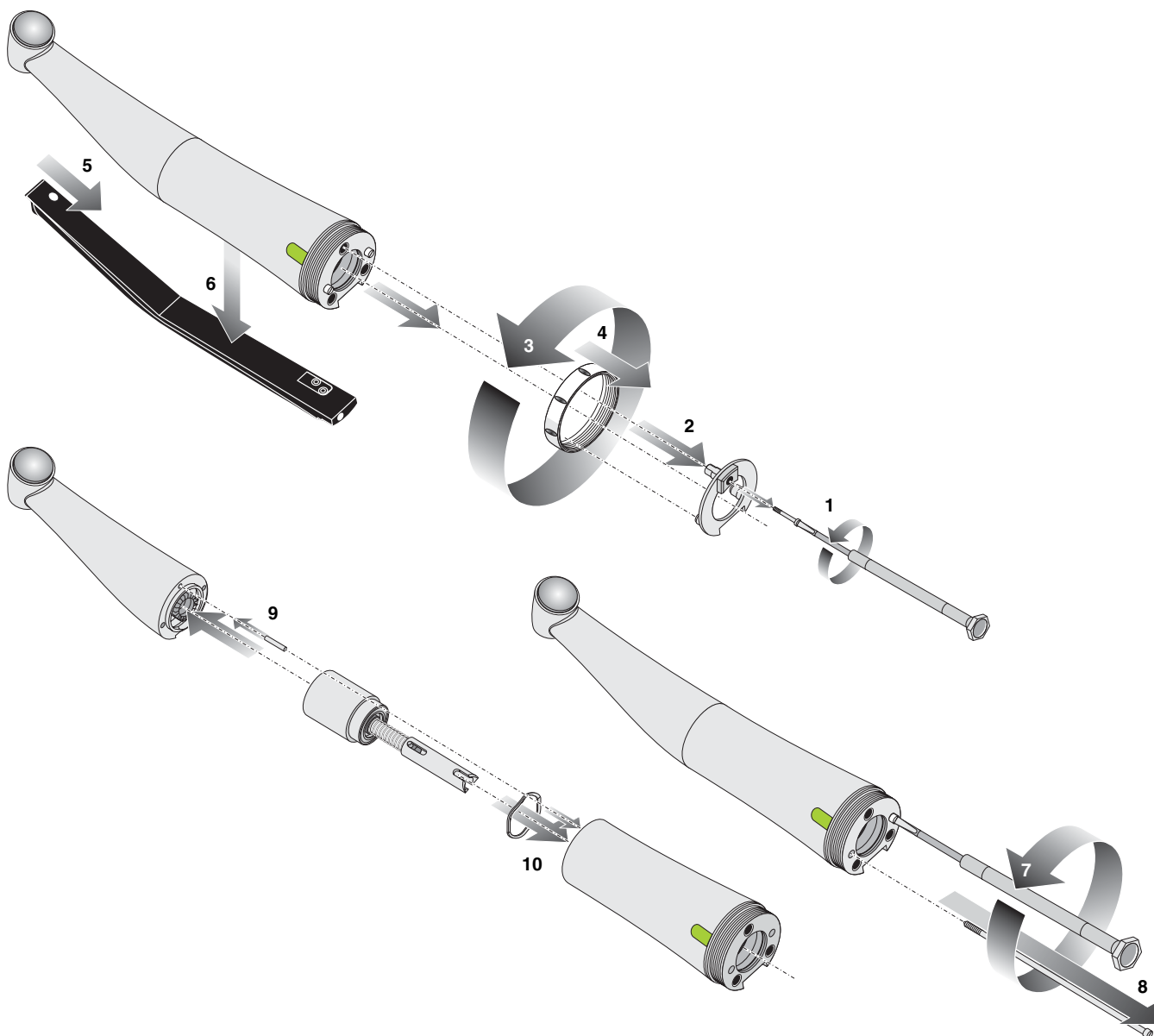
B (41 78 088),
same tool
for T1 LINE
and T1 CLASSIC



C (33 27 793),
same tool
for T1 LINE
and T1 CLASSIC

All contra-angle handpieces of the T2 REVO preparation system are locked in the same way:

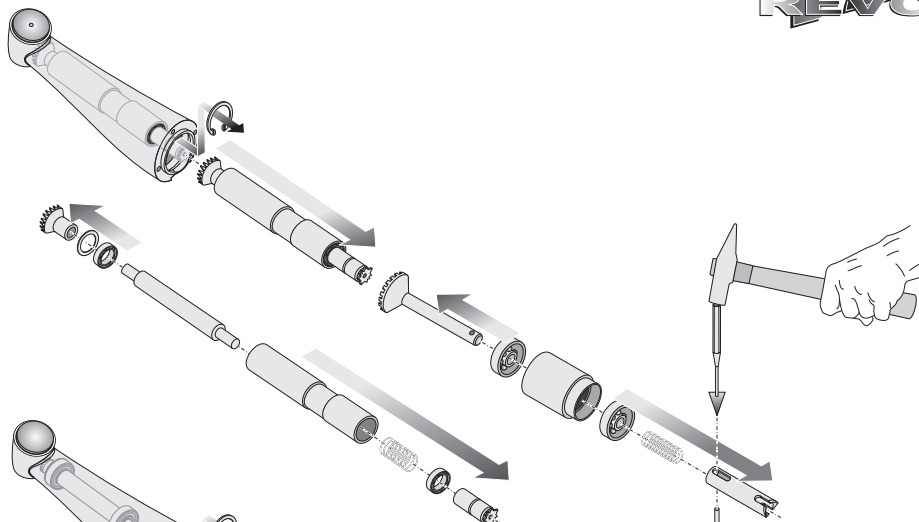




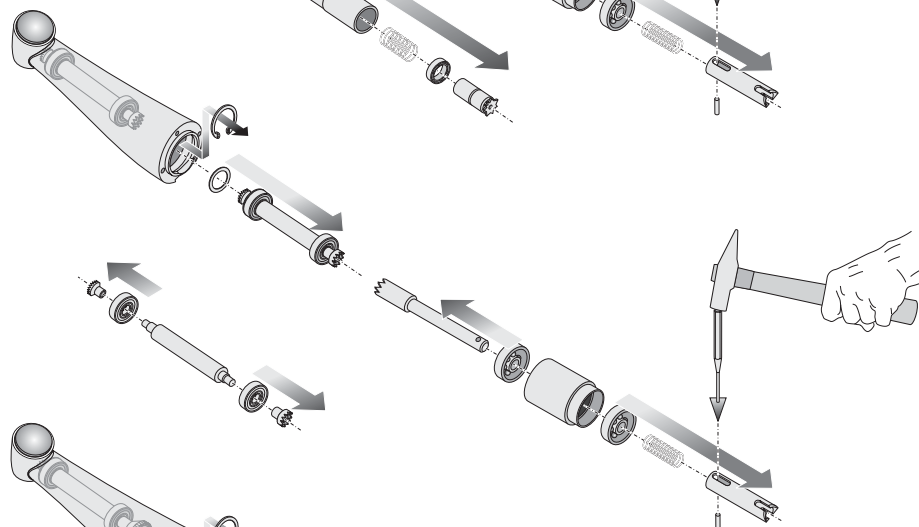
All drives / neck drives of the T2 REVO preparation system are constructed in the same way.



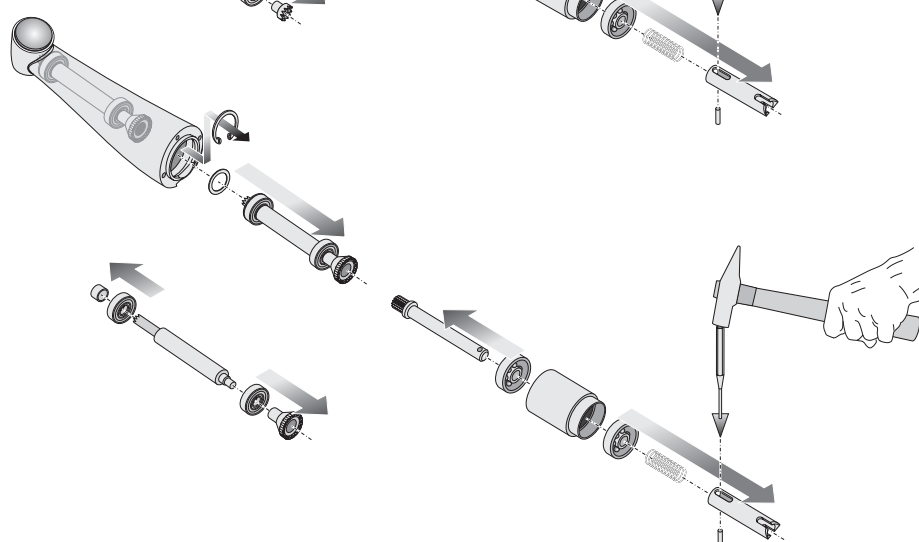
1 : 4.2



1 : 1

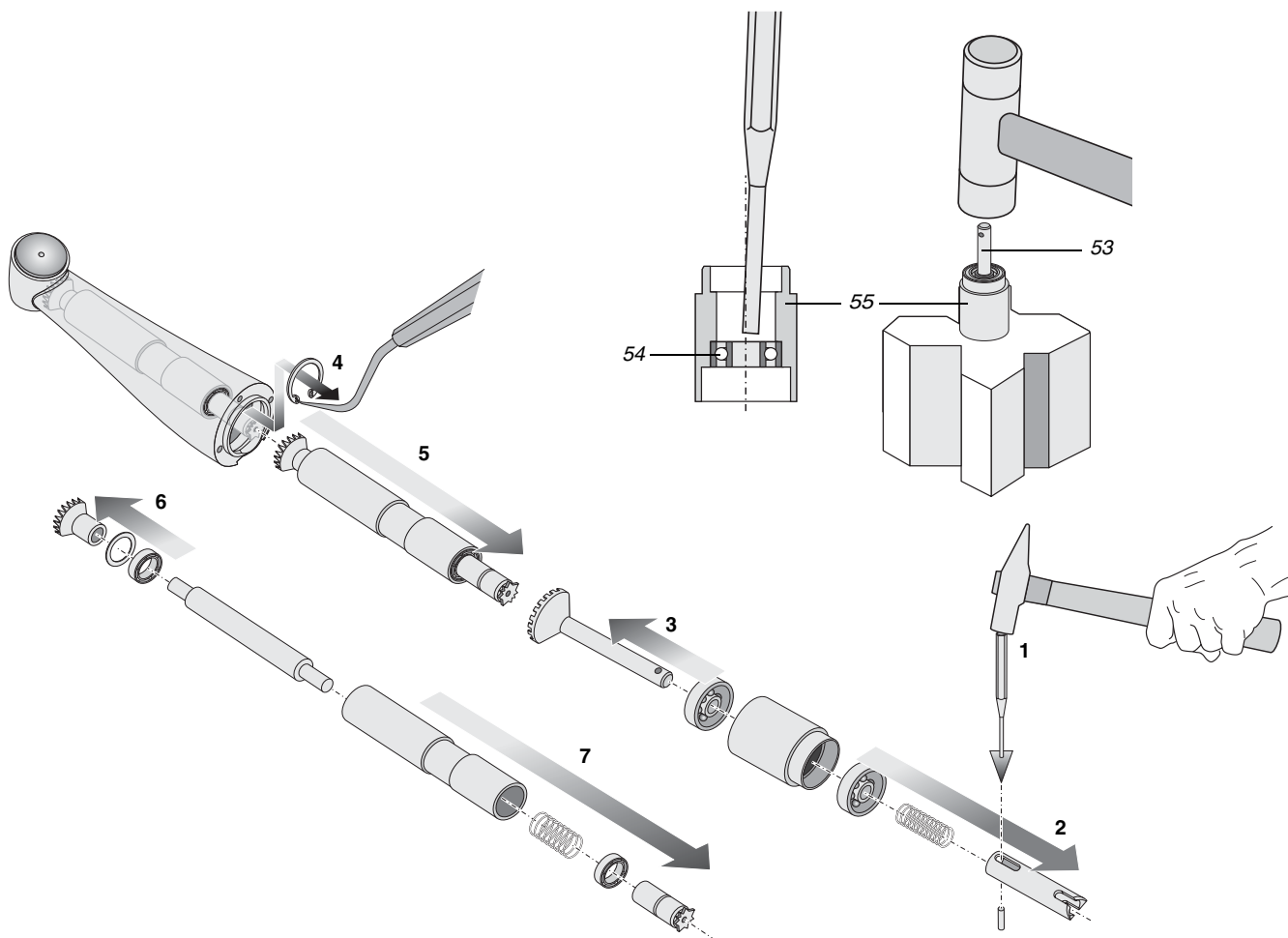


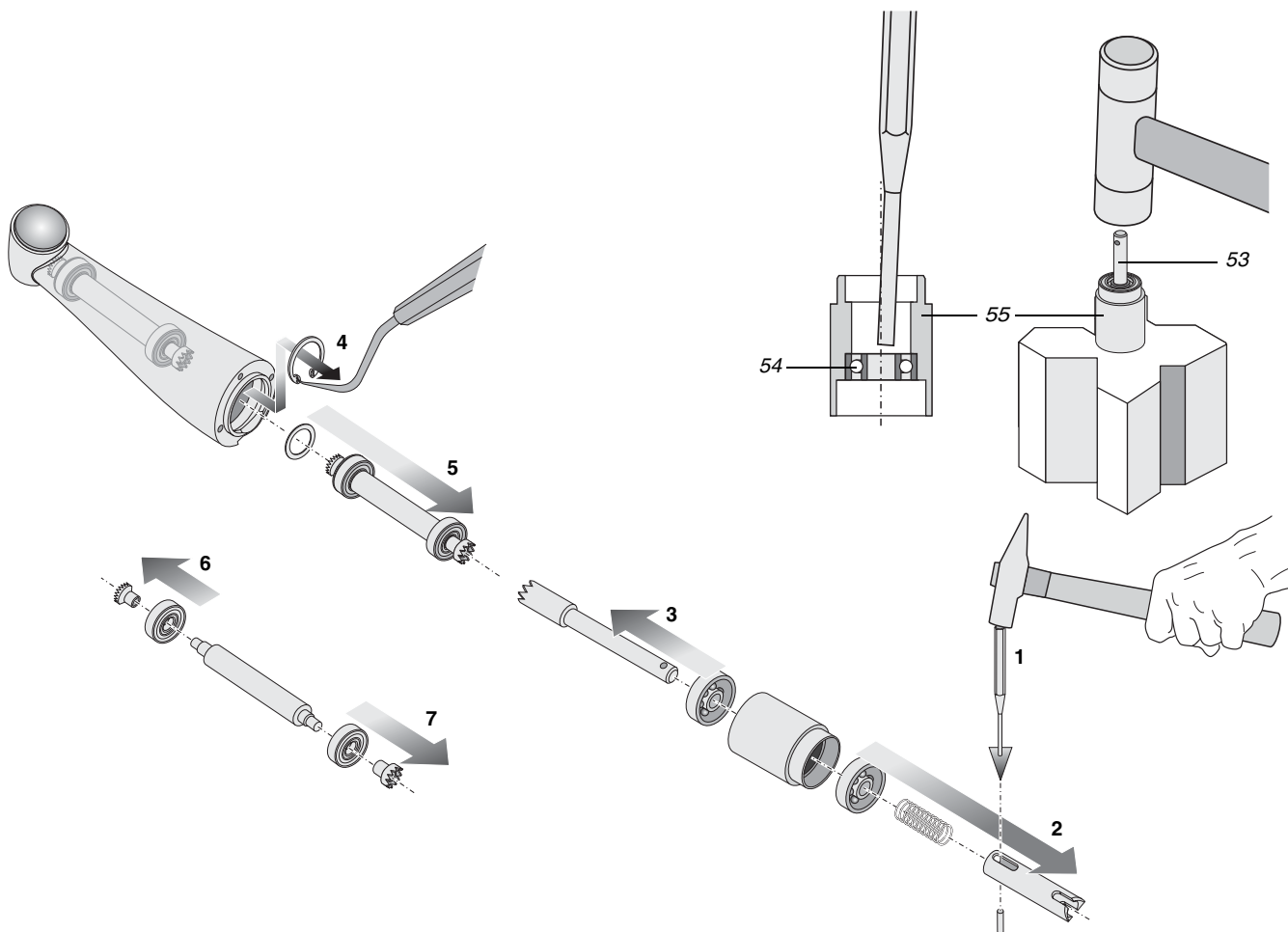
6 : 1

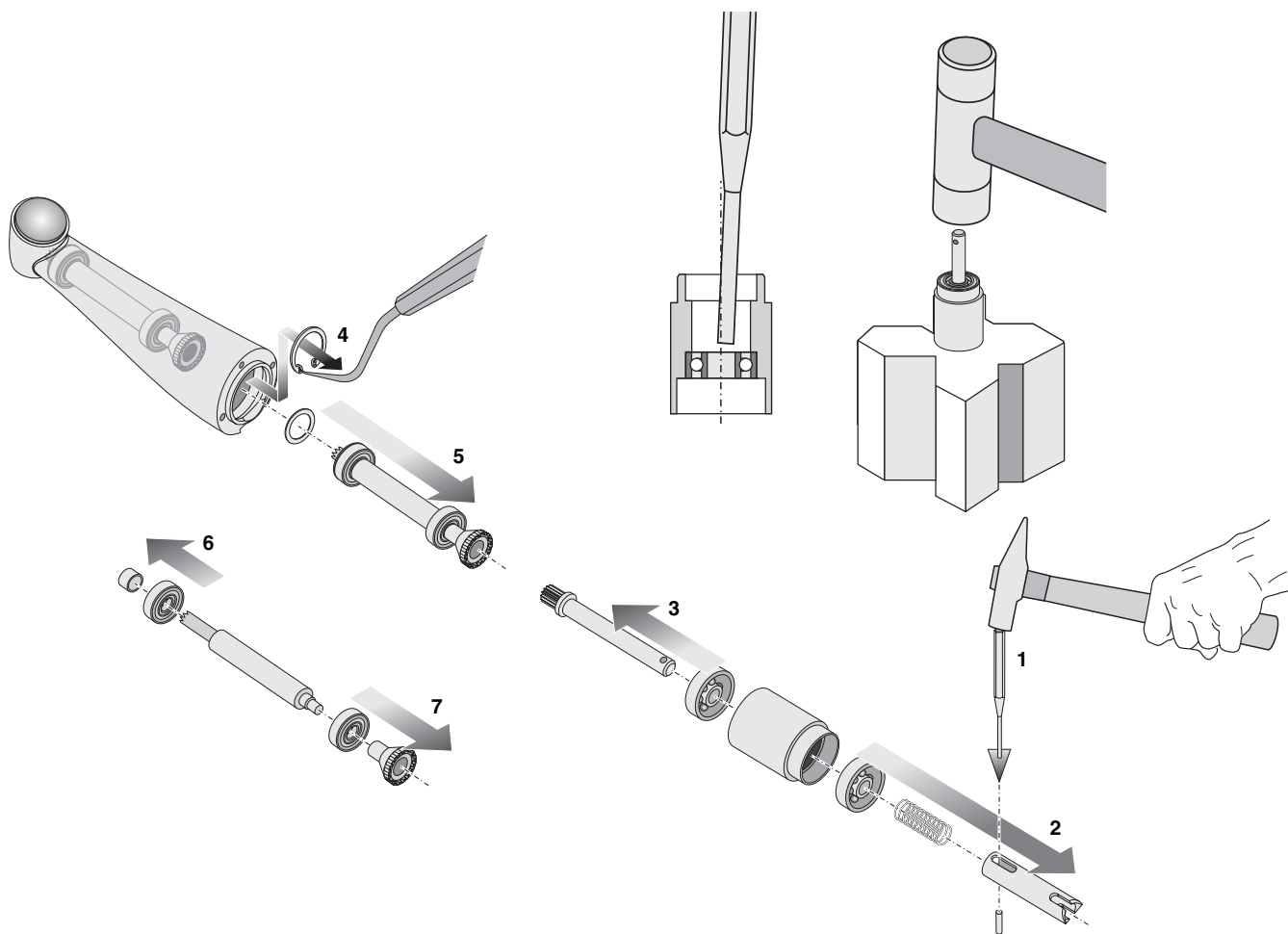


Disassembling the 1:4.2 drive and neck drive

Drive shaft 53 and ball bearing 54 are glued to the bearing flange 55.







Prior to assembly, clean and degrease all parts of the drive.

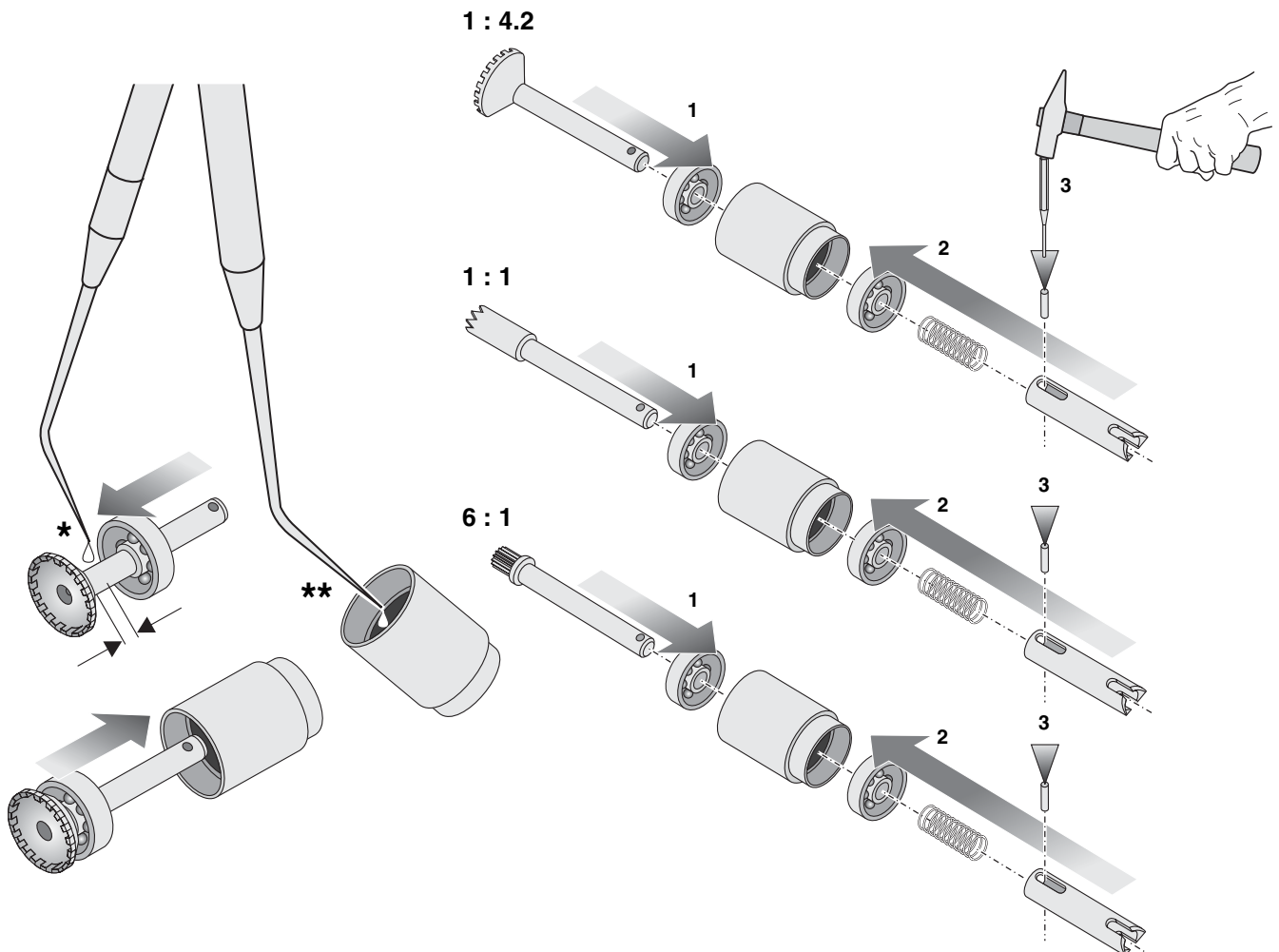
Push front ball bearing onto the drive shaft.

Apply **a precisely-dosed amount of Araldit AV 119 *** to the area where the bearing is supposed to sit. Insert drive shaft with ball bearing up to the stop.

Apply **a precisely-dosed amount of Araldit AV 119 **** to the bearing flange, where the front ball bearing sits.

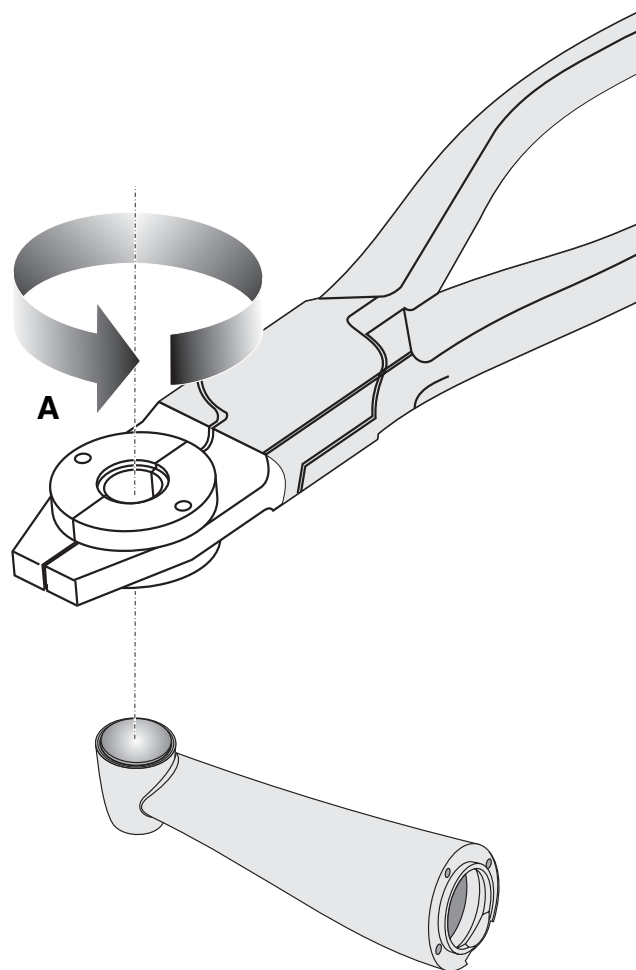
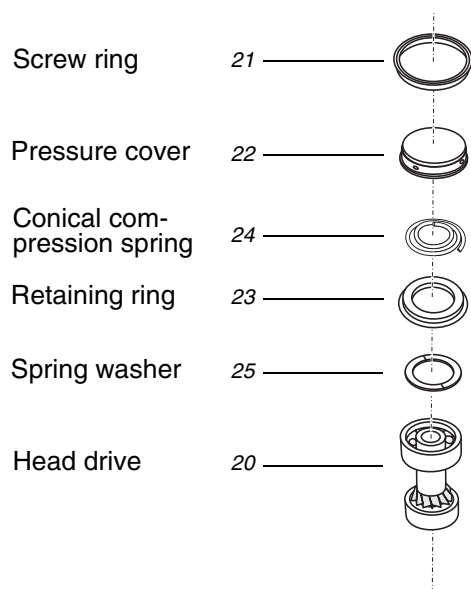
Insert drive shaft with ball bearing up to the stop.

Allow to harden at 140°C for 90 minutes.





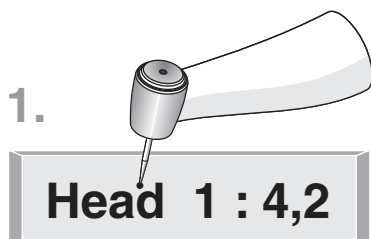
Example: 6:1 head



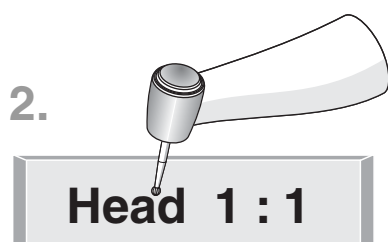
Test spring function of pressure cover 22 !

Check the individual parts of the head for wear.

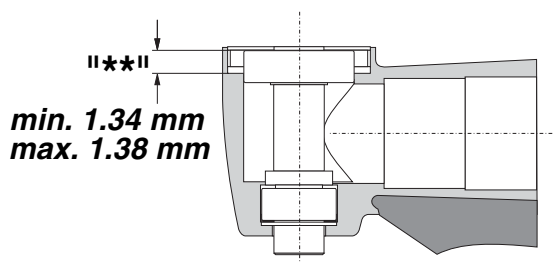
Clean and degrease parts that are intended for reuse.



Test spring function of pressure cover 22 !
Check the individual parts of the head for wear.
Clean and degrease parts that are intended for reuse.

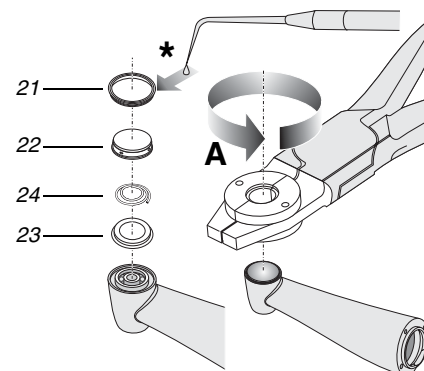
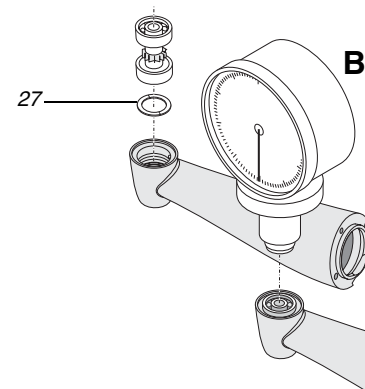
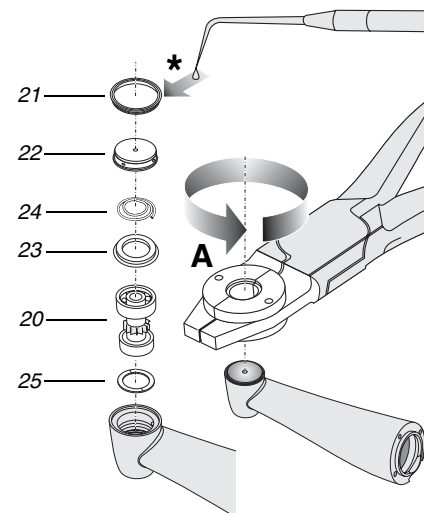


Here size "***" must be tested during the assembly.
It lies between the top edge of the ball bearing and the first shoulder in the head housing and is: **1.34 to 1.38 mm**.
Insert adjusting washer 27 (0.12 mm), insert head drive.
Determine the size "***" with tool **B**.
Any size lying between the above reference values is correct.
If necessary, choose another adjusting washer (0.08 mm / 0.10 mm) to achieve the size span.



Once the size "***" is correct, complete the head housing with retaining ring 23, conical compression spring 24 (pay attention to position) and pressure cover 22. Apply a small drop of **Loctite 932 *** to the thread of screw ring 21, screw it in by hand and tighten with pliers **A**.
Test spring function of pressure cover 22 !
Check the individual parts of the head for wear. **Clean and degrease** parts that are intended for reuse.

Screw ring 21
Pressure cover 22
Conical compression spring 24
Retaining ring 23
Head drive 20
Spring washer 25



3.

Head 6 : 1

Test spring function of pressure cover 22 !
Check the individual parts of the head for wear.
Clean and degrease parts that are intended
for reuse.

Screw ring

21

Pressure cover

22

Conical compression spring

24

Retaining ring

23

Spring washer

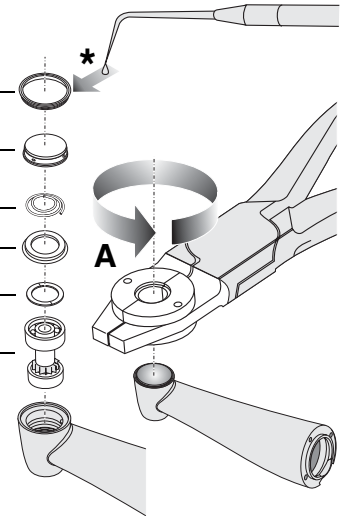
25

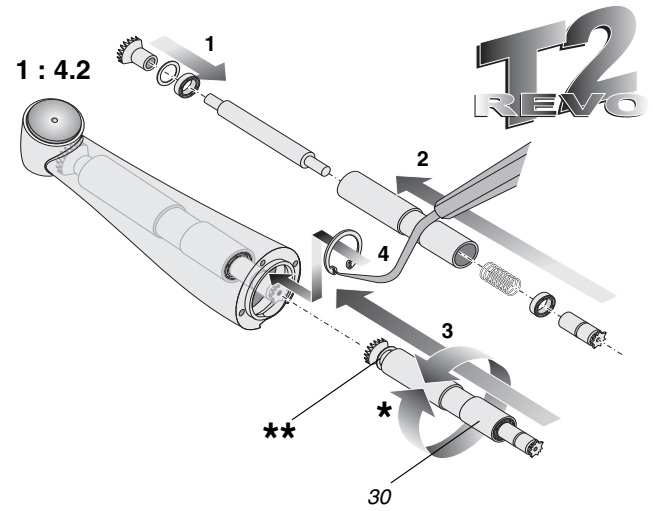
Head drive

20

A

T2
REVO

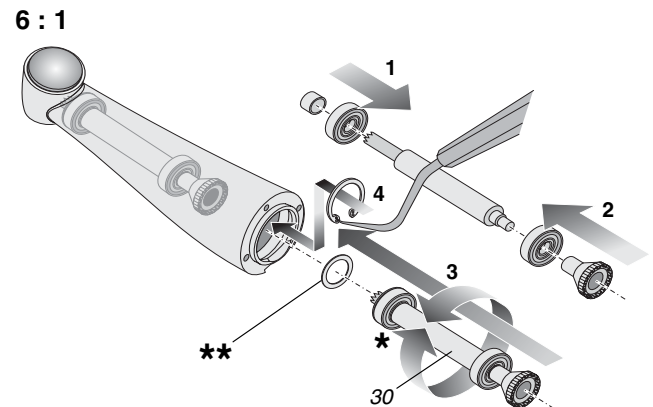
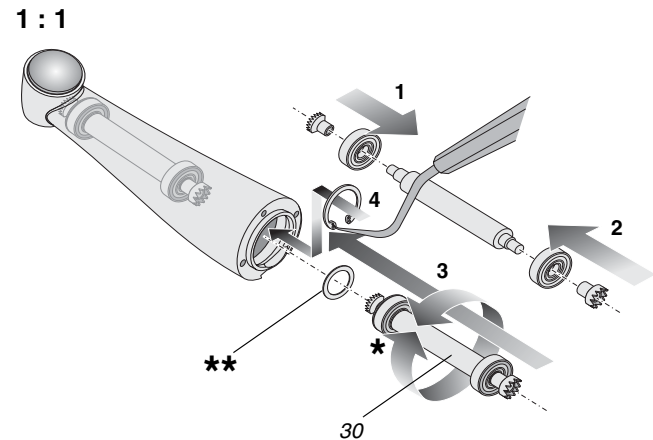




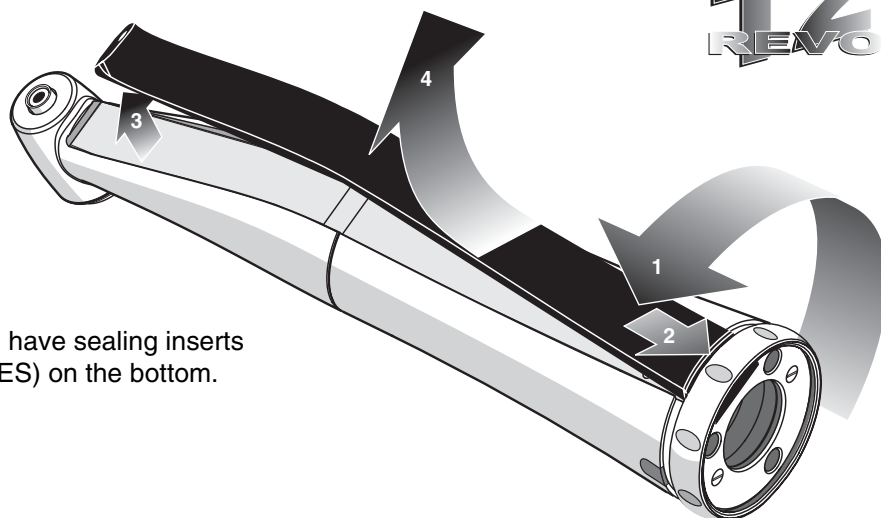
Insert neck drive 30 by hand up to the stop (5).



*While inserting pay attention to tooth meshing, move slightly *. Make sure that the spring washer ** is seated flat in the head and that its spring function is working properly!*

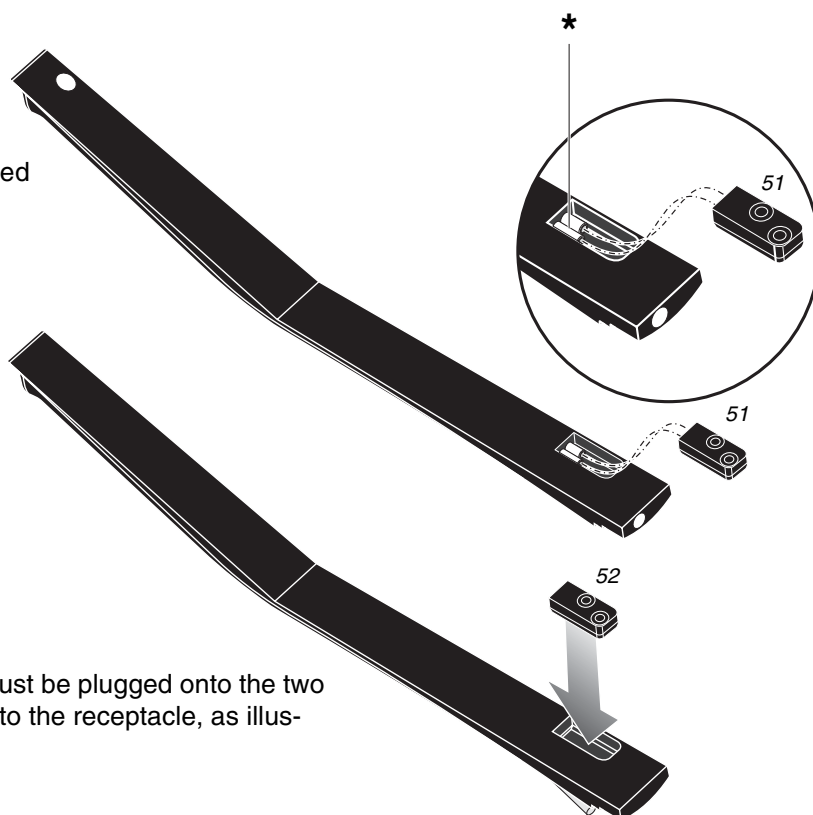


**T2
REVO**

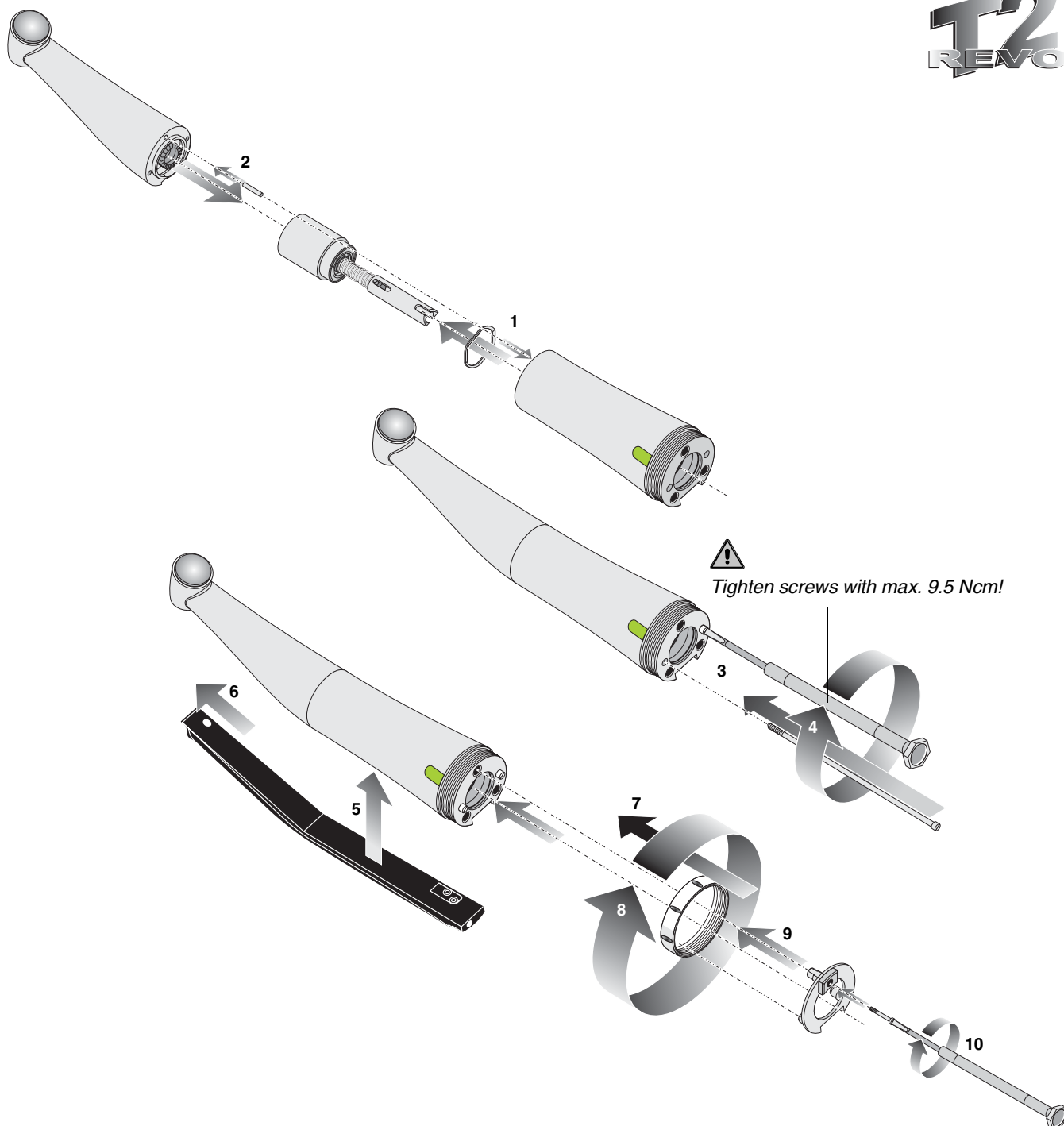


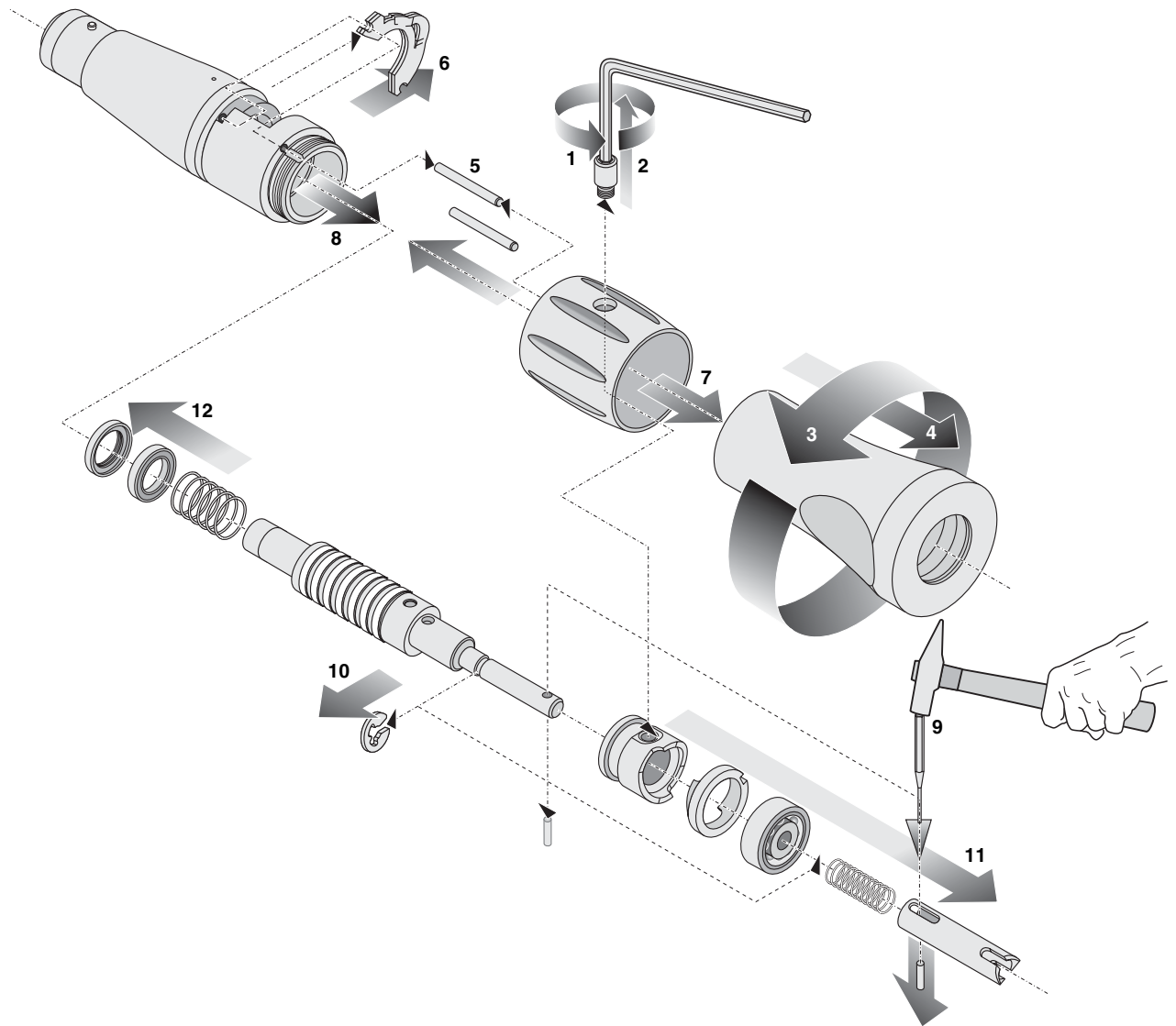
1. The ISL, IS and ES SmartClips™ have sealing inserts (51 > ISL and IS, as well as 52 > ES) on the bottom.

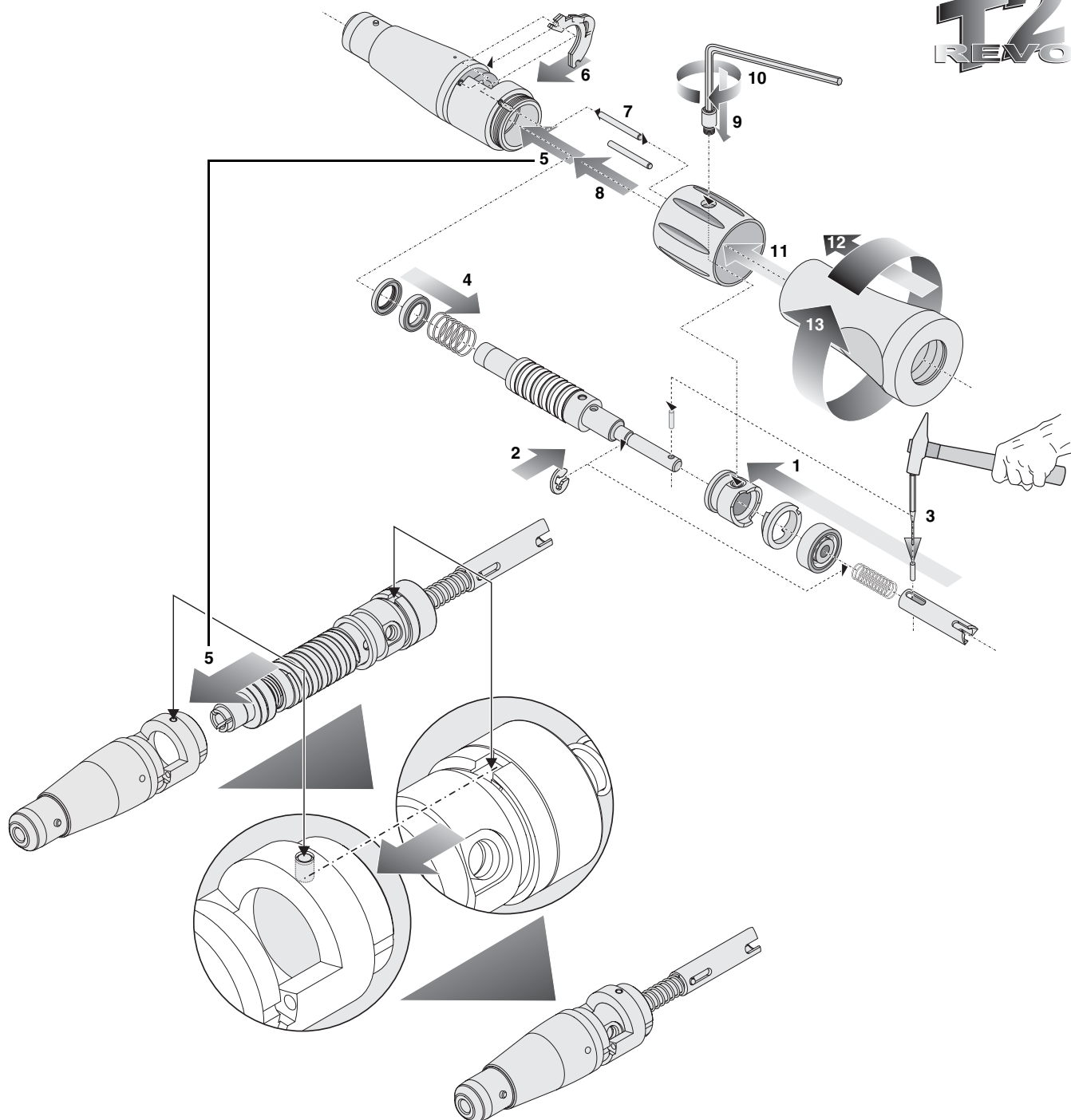
2. Damaged sealing inserts can be removed e.g. with a probe.



3. When fitting the sealing insert (51), it must be plugged onto the two small tubes (*) first and then pressed into the receptacle, as illustrated.



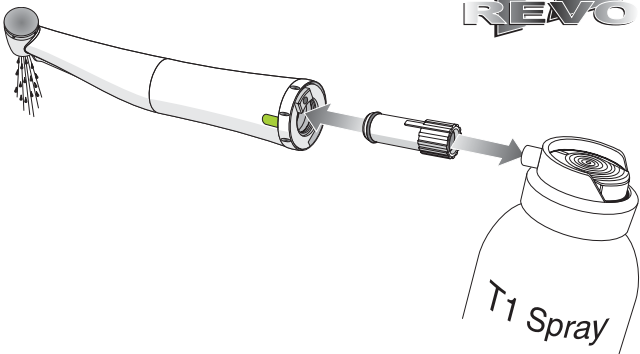




For the final testing of a repaired T2 REVO instrument the test equipment of the T1 LINE program can be used

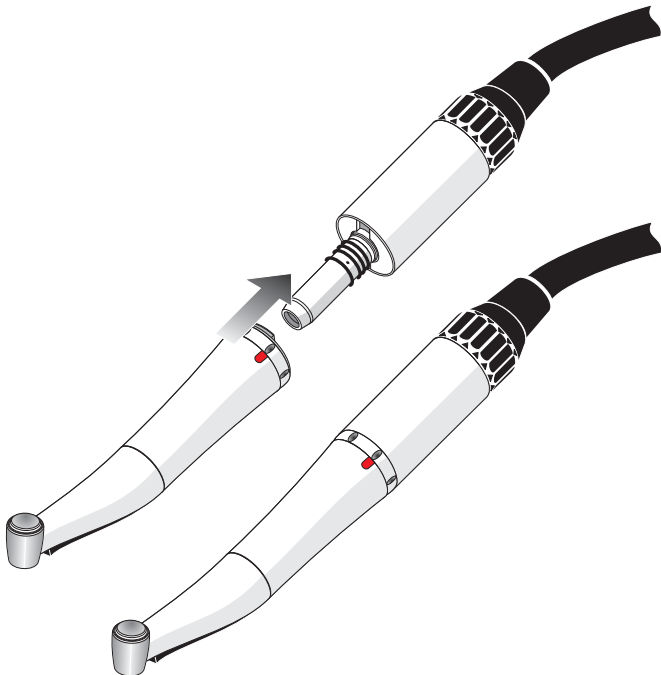


The adhesive bonds must have cured before the functional test!



1. Attach the appropriate spray adapter (ISO) to the T1 spray bottle, fit on the contra-angle handpiece and spray (oil) for 1 second with T1 spray.

2. Fit contra-angle handpiece on motor and check latching of the handpiece.
Pull off the contra-angle handpiece without twisting.
3. Let the motor run at the speed that is allowed for the test object (see table).
Determine current consumption of the motor.
4. Fit on contra-angle handpiece and let it run in according to the data in the table.



At this point only measure the current consumption of
motor and contra-angle handpiece
– at max. permissible speed.

From the value obtained, deduct the value of the motor running on its own.

Permissible current consumption: $\leq 0.12 \text{ A}$

Contra-angle handpiece	Run time per direction of rotation	Max. motor speed
R 170	4 min.	40,000 rpm
R 40	4 min.	40,000 rpm
R 6	4 min.	40,000 rpm

5. Testing the flow rate:

Set the following pressures on the test unit with a new T2 REVO contra-angle handpiece:

Spray control set to maximum flow!

Spray **air**:

2.7 ± 0.1 bar

Spray **water**:

2.0 ± 0.1 bar

Connect the contra-angle handpiece to be tested.

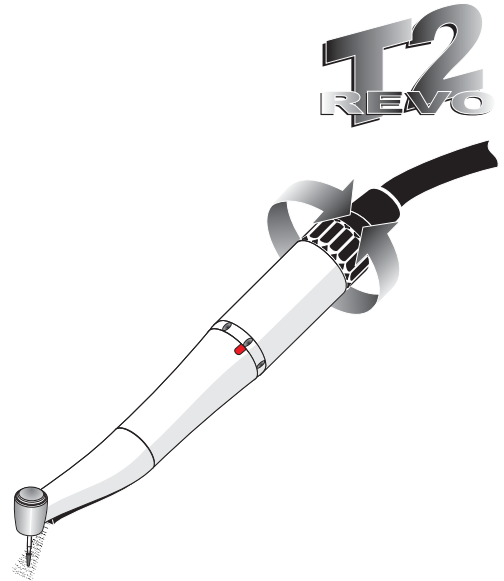
The flow rate (**only for IS and ISL versions**) of spray **air must be** ≥ 3.1 l/min – 4.1 l/min.

The flow rate of

spray **water must be** ≥ 70 ml/min.

A value less than this indicates faulty spray channels – **test**.

If no testing tools are available, the flow rate of the spray water can be measured with a measuring glass and timer.



The FG and WB clamping systems must be tested according to DIN EN ISO 7785-2. A simplified test is described in the following steps.

6. Testing the retention force of the FG clamping system:

Insert the burr dummy of the tool **C** up to the bottom of the chuck. Observe the extraction behavior.

The tool **C** marks the minimum value with a ring on its spring-loaded extractor.

7. Testing the retention force of the WB clamping system:

Insert a burr, without pressing the cover, turning it slightly forwards and backwards until it snaps into place.

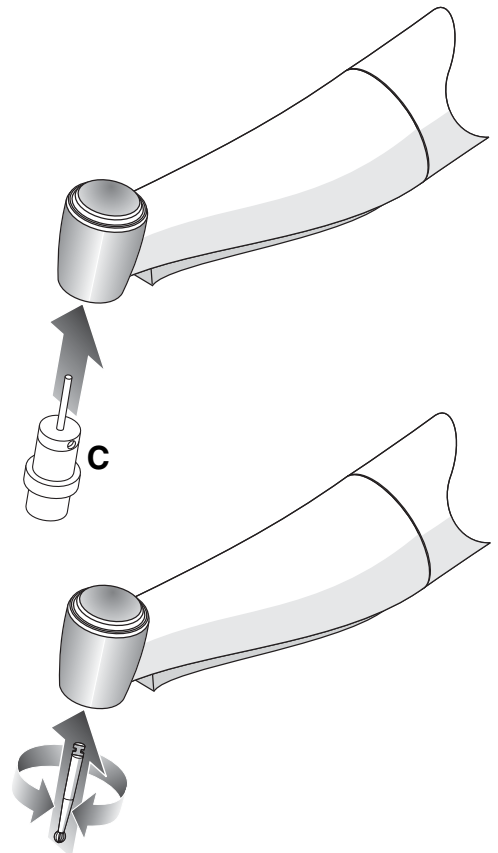
Test whether the burr is firmly seated by pulling and turning it.

8. Testing the running behavior:

Run the contra-angle handpiece with inserted burr in both directions and at different speeds –

The contra-angle handpiece should lie in your hand with little vibration in all speed ranges and its running noise should be characteristic of a good reference contra-angle handpiece.

End of the functional test.

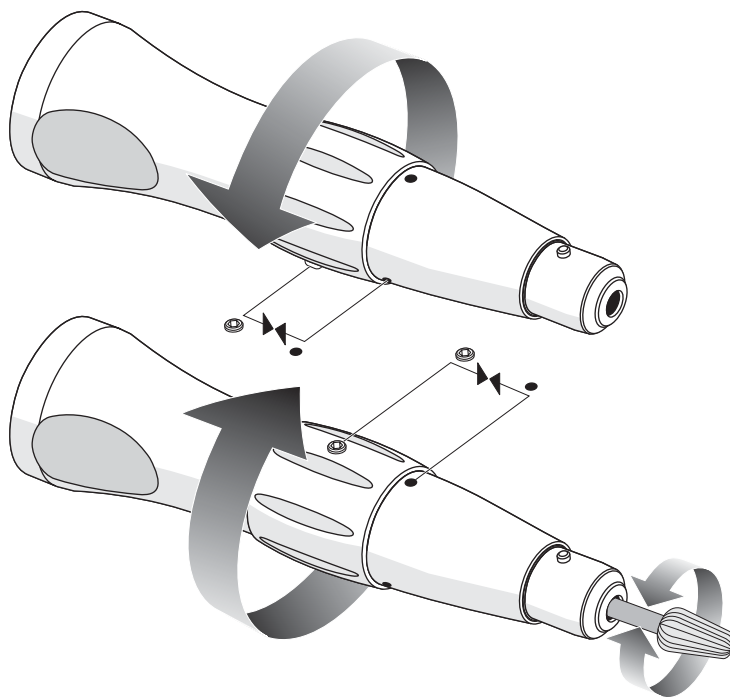




1. Testing the retention force of the clamping system:

Open the clamping system.

Insert the burr up to the bottom of the chuck.
Close the clamping system.
Test whether the burr is firmly seated by pulling and turning it.

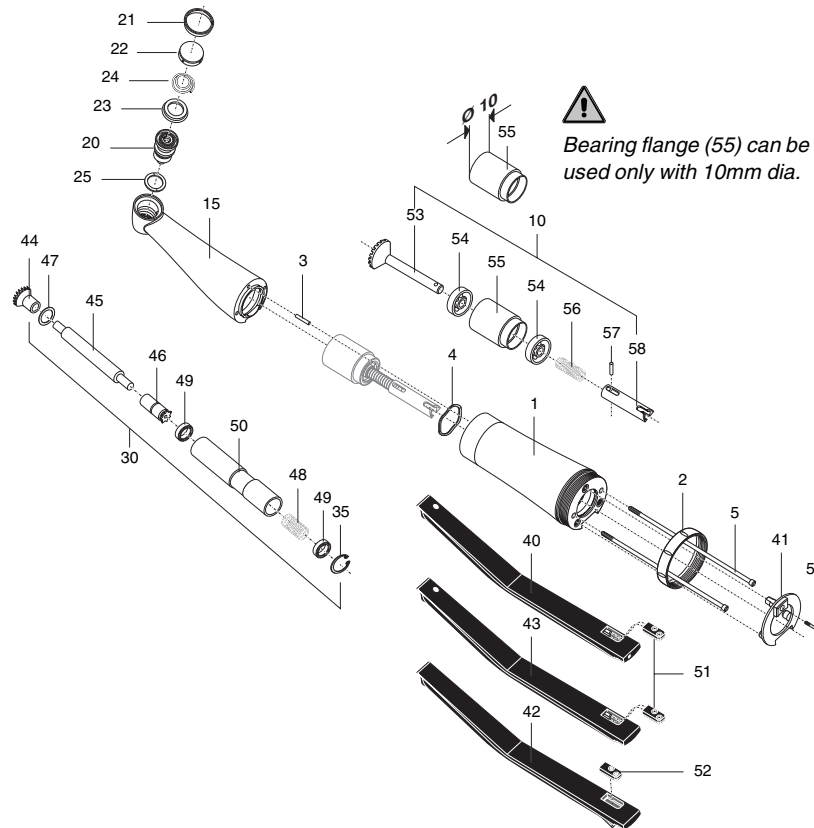


2. Testing the running behavior:

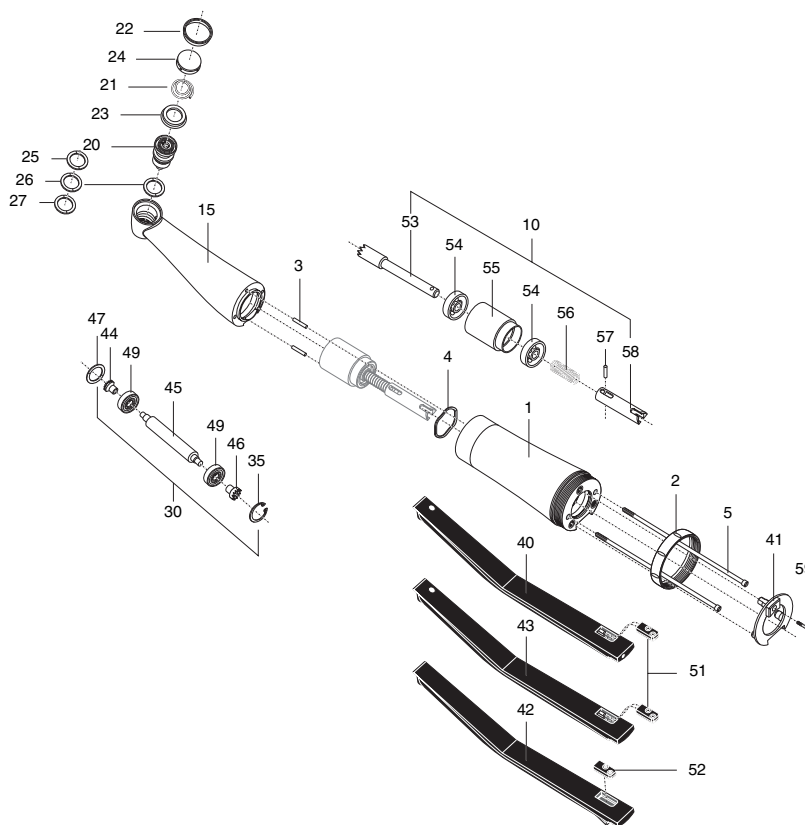
Run the straight handpiece with inserted burr in both directions and at different speeds –

The handpiece should lie in your hand with little vibration in all speed ranges and its running noise should be characteristic of a good reference handpiece.

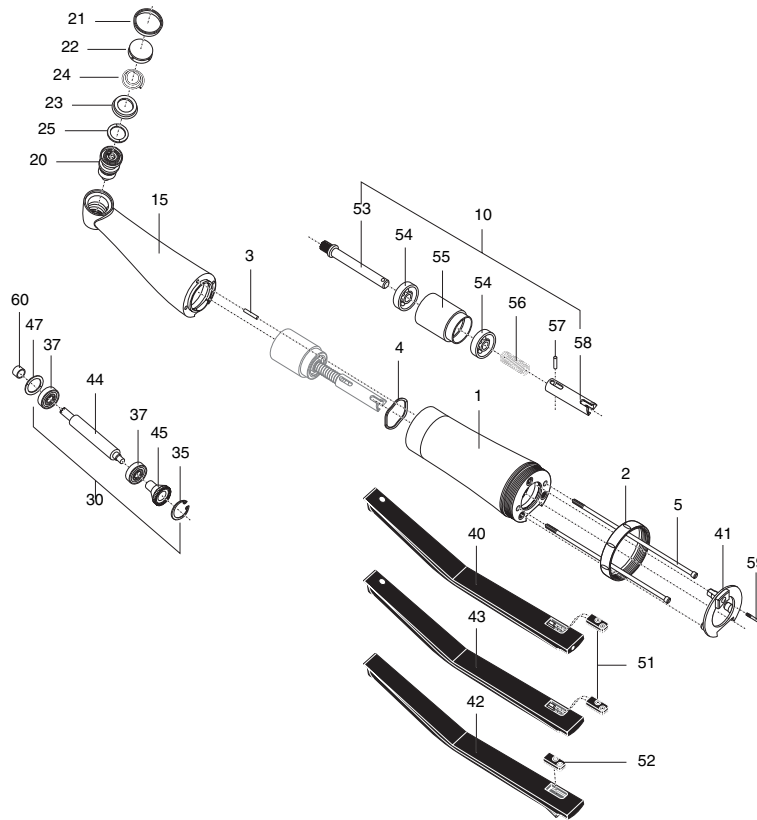
End of the functional test.



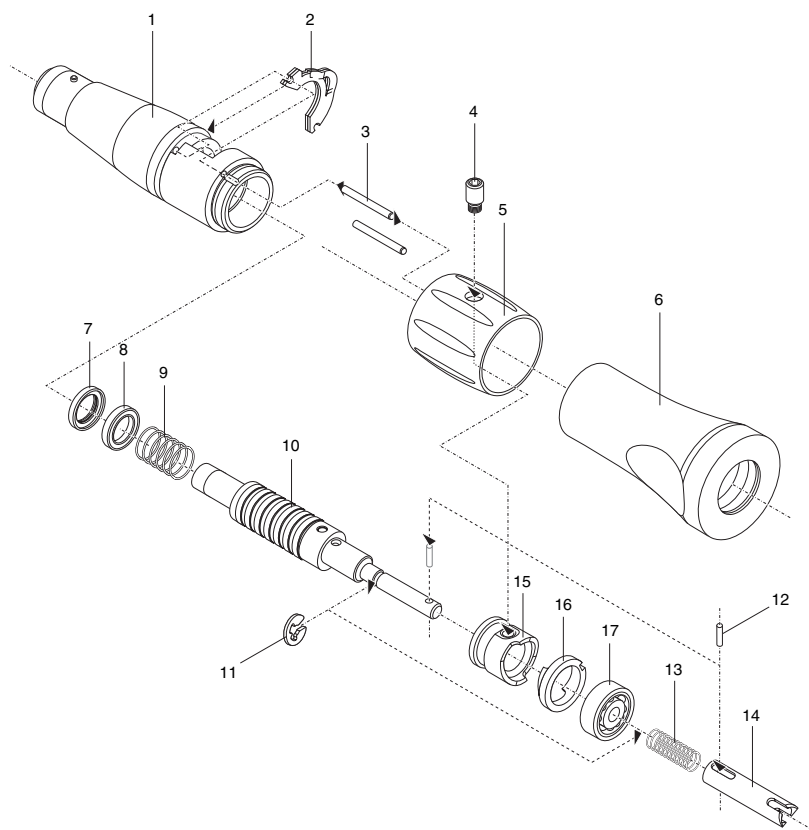
1	Coupling fitting 1:4.2	59 43 118 D 3409	43	SmartClip™ IS	59 41 005 D 3409
2	Fixing ring	59 42 250 D 3409	44	Contrate gear	33 28 742 D 3300
3	Cylinder pin	33 89 160	45	Neck shaft 1:4.2	59 30 735 D 3409
4	Spring washer	59 28 515 D 3409	46	Neck pinion	33 28 775 D 3300
5	Screw M 1.2 x 54.5	33 29 096 D 3300	47	Spring washer 0.06	89 16 751 D 3239
10	Drive 1:4.2	59 43 183 D 3409	48	Compression spring	33 28 619 D 3300
15	Head 1:4.2	59 43 068 D 3409	49	Deep-groove ball bearing	70 44 654 F 0502
20	Head drive 1:5	59 31 212 D 3409	50	Guiding tube 1:4.25	59 30 768 D 3409
21	Screw ring	89 25 083 D 3239	51	Sealing insert IS (green)	59 29 364 D 3409
22	Pressure cover	33 28 692 D 3300	52	Sealing insert ES (yellow)	59 30 883 D 3409
23	Retaining ring WA	89 17 932 D 3239	53	Drive shaft Z26	59 30 826 D 3409
24	Conical compression spring 2.5:1S	59 47 957 D 3239	54	Ball bearing	41 81 132 F 0502
25	Spring washer 0.06	59 30 925 D 3409	55	Bearing flange	33 28 049 D 3300
30	Neck drive 1:4.2	59 43 159 D 3409	56	Compression spring	33 28 155 D 3262
35	Circlip	59 28 432 D 3409	57	Center-grooved dowel pin	89 26 834 D 3300
40	SmartClip™ ISL	59 40 999 D 3409	58	Pusher	33 28 072 D 3300
41	Index ring T2 REVO	59 30 818 D 3409	59	Head screw	59 46 673 D 3409
42	SmartClip™ ES	59 41 013 D 3409			



1	Coupling fitting 1:1	59 43 126 D 3409	42	SmartClip™ ES	59 41 013 D 3409
2	Fixing ring	59 42 250 D 3409	43	SmartClip™ IS	59 41 005 D 3409
3	Cylinder pin	33 89 160	44	Contrate gear Z12	59 47 775 D 3239
4	Spring washer	59 28 515 D 3409	45	Neck shaft 1:1	59 30 743 D 3409
5	Screw M 1.2 x 54.5	33 29 096 D 3300	46	Crown gear Z9	89 18 252 D 3238
10	Drive 1:1	59 43 464 D 3300	47	Spring washer 0.06	89 16 751 D 3239
15	Head 1:1	59 43 076 D 3409	49	Ball bearing	41 81 157 F 0502
20	Head drive 1:1	59 43 092 D 3409	51	Sealing insert IS (green)	59 29 364 D 3409
21	Screw ring	89 25 083 D 3239	52	Sealing insert ES (yellow)	59 30 883 D 3409
22	Pressure cover	89 17 924 D 3239	53	Drive shaft Z9	33 28 114 D 3300
23	Retaining ring WA	89 17 932 D 3239	54	Ball bearing	41 81 132 F 0502
24	Conical compression spring, 2.5:1S	59 47 957 D 3239	55	Bearing flange	33 28 049 D 3300
25	Adjusting washer 0.08	58 87 182 F 1503	56	Compression spring	33 28 155 D 3300
26	Adjusting washer 0.10	58 87 190 F 1503	57	Center-grooved dowel pin	89 26 834 D 3262
27	Adjusting washer 0.12	58 87 208 F 1503	58	Pusher	33 28 072 D 3300
30	Neck drive 1:1	59 43 167 D 3409	59	Head screw	59 46 673 D 3409
35	Circlip	59 28 432 D 3409			
40	SmartClip™ ISL	59 40 999 D 3409			
41	Index ring T2 REVO	59 30 818 D 3409			



1	Coupling fitting 6:1	59 43 134 D 3409	42	SmartClip™ ES	59 41 013 D 3409
2	Fixing ring	59 42 250 D 3409	43	SmartClip™ IS	59 41 005 D 3409
3	Cylinder pin	33 89 160	44	Neck shaft 6:1	59 30 750 D 3409
4	Spring washer	59 28 515 D 3409	45	Crown gear Z 19	33 28 650 D 3300
5	Screw M 1.2 x 54.5	33 29 096 D 3300	47	Spring washer 0.06	89 16 751 D 3239
10	Drive 6:1	59 43 472 D 3300	51	Sealing insert IS (green)	59 29 364 D 3409
15	Head 1:1	59 43 076 D 3409	52	Sealing insert ES (yellow)	59 30 883 D 3409
20	Head drive 6:1	59 43 100 D 3409	53	Drive shaft Z8	33 28 106 D 3300
21	Screw ring	89 25 083 D 3239	54	Ball bearing	41 81 132 F 0502
22	Pressure cover	89 17 924 D 3239	55	Bearing flange	33 28 049 D 3300
23	Retaining ring WA	89 17 932 D 3239	56	Compression spring	33 28 155 D 3300
24	Conical compression spring 2.5:1S	59 47 957 D 3239	57	Center-grooved dowel pin	89 26 834 D 3262
25	Spring washer 0.06	89 16 751 D 3239	58	Pusher	33 28 072 D 3300
30	Neck drive 6:1	59 43 175 D 3409	59	Head screw	59 46 673 D 3409
35	Circlip	59 28 432 D 3409	60	Bush for crown gear	33 28 346 D 3300
37	Deep-groove ball bearing	41 81 157 F 0502			
40	SmartClip™ ISL	59 40 999 D 3409			
41	Index ring T2 REVO	59 30 818 D 3409			



1	Bearing sleeve	59 43 456 D 3409
2	Stop element	33 29 146 D 3300
3	Pin 1.2x12	54 57 713 D 3358
4	Screw for clamping system	59 31 188 D 3409
5	Rotating sleeve	59 31 196 D 3409
6	Coupling fitting H	59 43 142 D 3409
7	Sealing ring	89 27 642 D 3300
8	Deep-groove ball bearing	41 81 108 F 0502
9	Compression spring	89 27 717 D 3300
10	Drive shaft	33 29 187 D 3300
11	Locking washer	89 27 253 D 3300
12	Center-grooved dowel pin	89 26 834 D 3262
13	Compression spring	33 28 155 D 3300
14	Pusher	33 28 072 D 3300
15	Locking sleeve	89 27 048 D 3300
16	Locking ring	89 27 063 D 3300
17	Deep-groove ball bearing	41 81 199 F 0502

We reserve the right to make any alterations which may be required due to technical improvements.

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