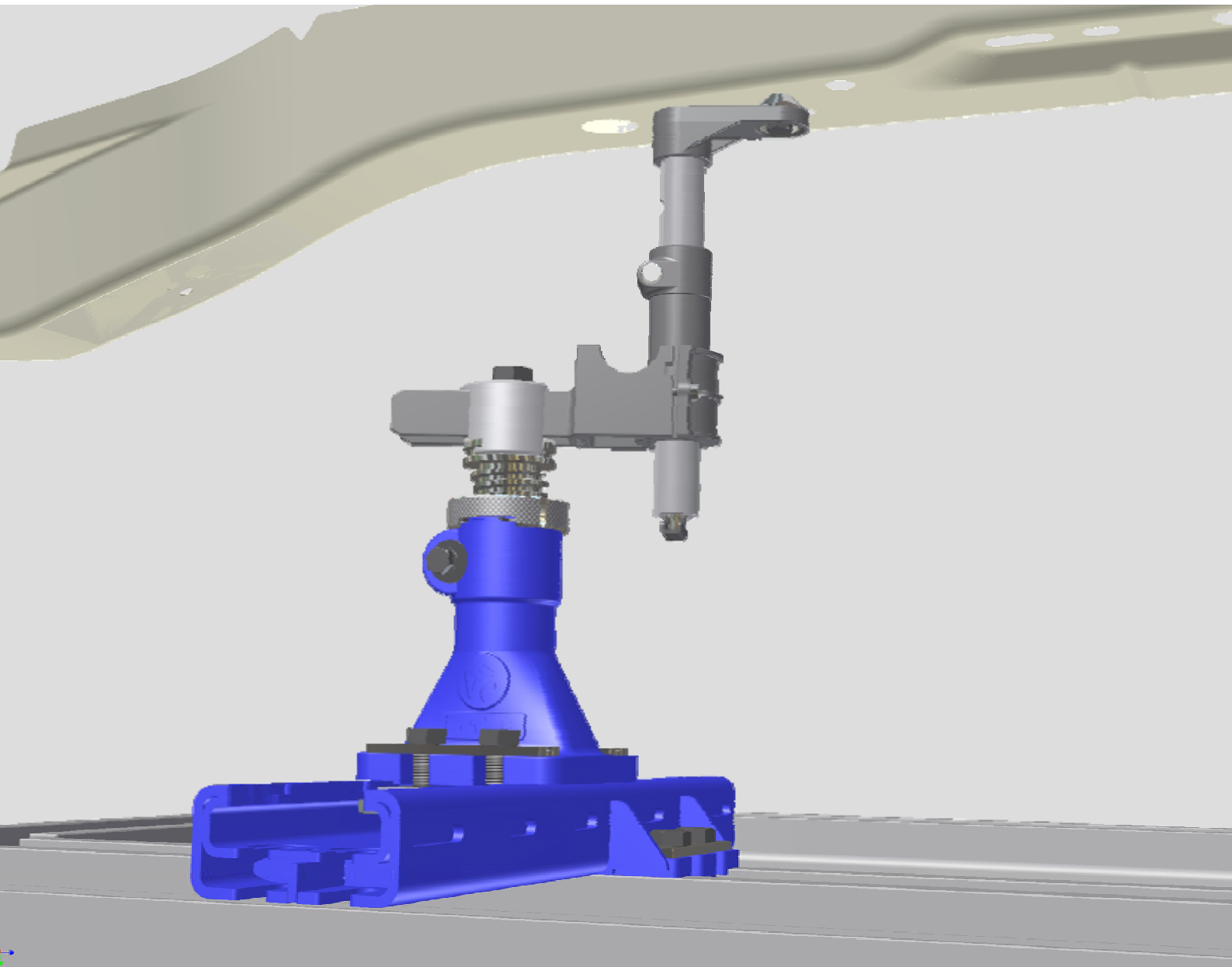


EVO

Universal holding and fixturing system

Instruction Manual



(35472, rev 2) 2016-01 EN

CAR-O-LINER®

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1.1 Introduction

1.2 General

Animations and pictures from proposed applications always show the general way to build the anchor and fixture point. Always chose the most suitable height of tower, length of adjustable holder to fit your purpose.

To make the straightening procedure easier is it important to hold the undamaged parts of the body as rigid as possible. Use torque-bar as frequent as possible.

The EVO 1-3 System is supported by the software *Vision2 X3*.

1.2.1 EVO 1 - Basic Anchoring kit

EVO 1 is a basic kit for anchoring, holding and side support during repair. EVO 1 includes three towers, Multi Purpose Clamp, Track plate, Bushings with adapter, Chain holder and Turnbuckle for heavy operations. The equipment is normally used with the clamping recommended on the datasheet. The EVO1 kit make it possible to build at least 2 extra anchors and supports when repairing a damaged vehicle body.

1.2.2 EVO 2 - Extended Anchoring kit

EVO 2 is an extension kit to EVO 1, made for anchoring, holding and side support during repair. EVO 2 includes two extra towers and track plates, special tools for Rear axel bracket, Turnbuckle extensions, Adjustable holders.

Whit this extended kit it is possible to anchor multiple points with one tower, anchor to body parts that are in an angle and anchor rear axle and control-arm brackets.

1.2.3 EVO 3 - Universal Holding & Fixturing kit

EVO 3 is a Universal Holding and Fixing kit for new parts during welding, riveting and bonding during vehicle body repair, the new generation universal jig kit from Car-O-Liner. EVO 3 is based on track-plates, towers and shafts from EVO 1 and 2.

1.2.4 Symbol explanation for Chapter 6



Together with the pictures in Chapter 6 there are explanatory symbols:

Recommended way of use (to mount parts etc)



Not recommended way of use (to mount parts etc). Risks for personal injuries and or damages to equipment.



Works, but not the most recommended way of use (to mount parts etc)

F

Strong force

f

Small force



Force direction



Correct pull direction



Incorrect pull direction

2 Safety

2.1 General

The EVO System has been designed and tested to meet strict safety requirements. Please read the following instructions carefully before operating the EVO System.

Information provided in this manual describes the suggested best working practices and should in no way take precedence over individual responsibilities or local regulations.

Great effort has been placed on the design and manufacture of the EVO System so that it will comply with all applicable safety aspects for this type of equipment. During operation and other work, it is always each individual's responsibility to consider:

Their own and other's personal safety.

The safety of the EVO System through correct use of the equipment in accordance with the descriptions and instructions provided in this manual.

By observing and following the safety precautions, users of the EVO System will ensure safer working conditions for themselves and their fellow workers.

2.2 Warnings and important notices

The following types of commands are used in this Car-O-Liner instruction manual:



RECOMMENDED WAY OF USE



NOT RECOMMENDED WAY OF USE



WORKS, BUT NOT THE MOST RECOMMENDED WAY OF USE



WARNING – Warns of risks for personal injuries or material damages.

The following warnings and important notices are used in the instruction manual:



WARNING

Warning (in bold type) is used in this manual to indicate a possible danger that could lead to personal injury. An instruction is normally given, followed by a short explanation plus the possible effect if the instruction is not followed.



IMPORTANT

Important (in bold type) is used to indicate a possible danger that could lead to damage to the equipment and/or cause environmental damage.



NOTE: (in bold type) is used to accentuate supplementary information that is required for problem-free use or optimal use of the equipment.

The following warnings and important notices will appear in this manual:

IMPORTANT: It is the responsibility of the owner (user) to ensure that the equipment has been installed as specified in the instructions provided. It is also the owner's responsibility to ensure that the equipment is inspected in accordance with applicable regulations before it is used.



WARNING! Make sure that the safety wire is correctly fitted and undamaged. Otherwise, the pulling chain might cause injuries if it loses its grip on the vehicle.



WARNING! Watch out for flying objects during alignment work. Do not stand behind or near the draw area during a pull. Risk of injury.



WARNING! Always be extremely careful when working with hydraulic equipment. Risk of falling or flying objects.



WARNING! Always wear safety glasses. Risk of splinters.



IMPORTANT! It is the responsibility of the owner to ensure that the equipment has been installed as specified in the instructions provided. It is also the owner's responsibility to ensure that the equipment is inspected in accordance with current and local regulations before it is used.



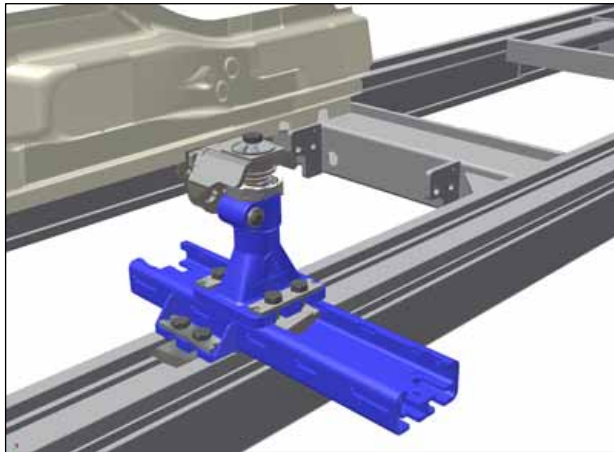
IMPORTANT! Always use torque bar E175 at high and hard pulling situations.

3 Applications

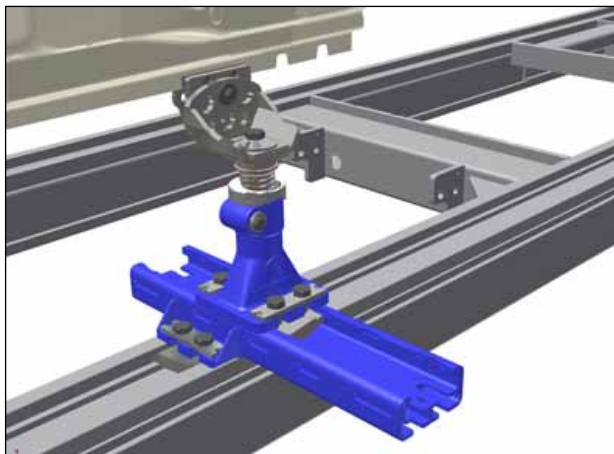


NOTE! Animations describing the applications in this chapter can be seen on the 35639_EVO System Instruction manual CD. The CD is included in all EVO kits.

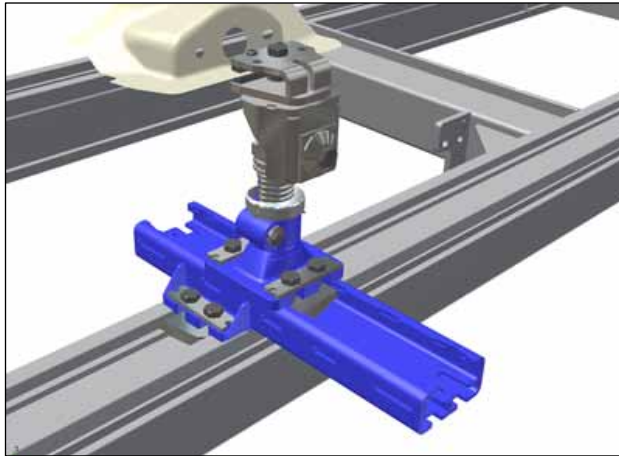
3.1 EVO 1 - Basic Anchoring



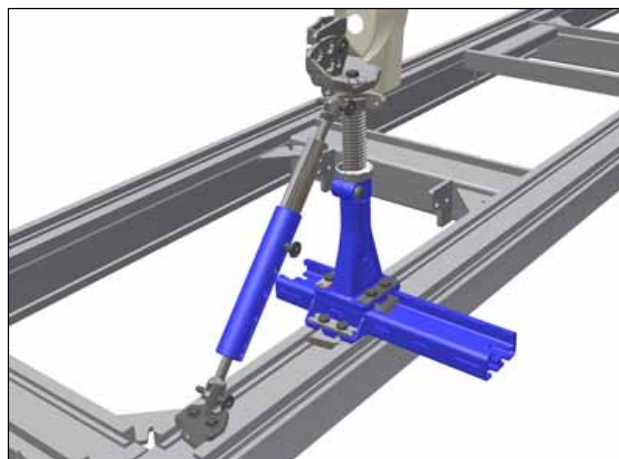
EVO 101 Low MPC



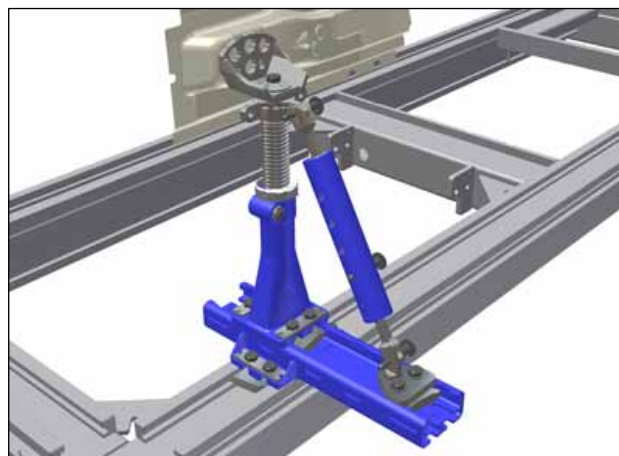
EVO 102 Horizontal MPC1



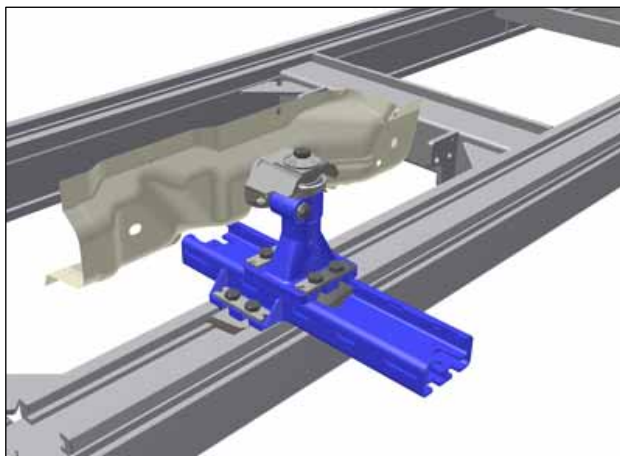
EVO 103 Horizontal MPC2



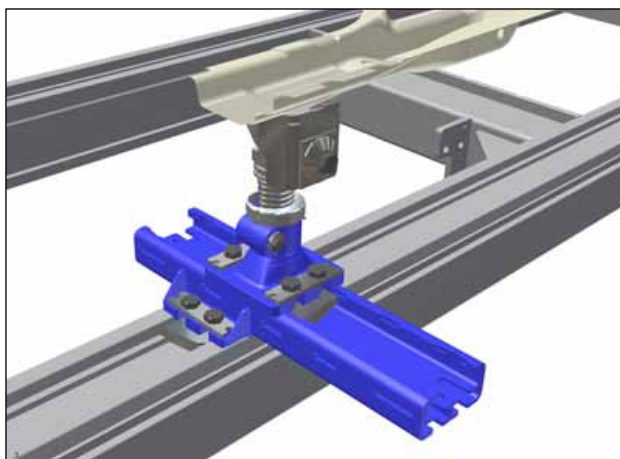
EVO 104 Vertical MPC High



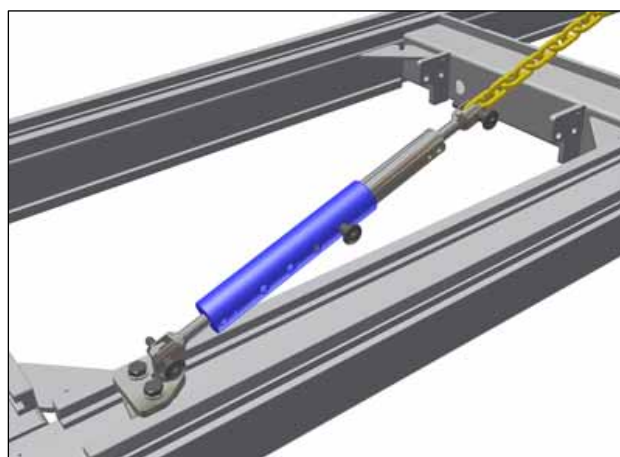
EVO 105 High side support with torque bar



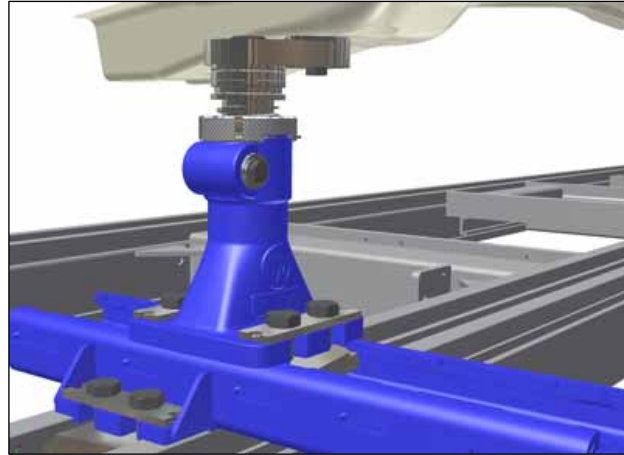
EVO 106 Low side support



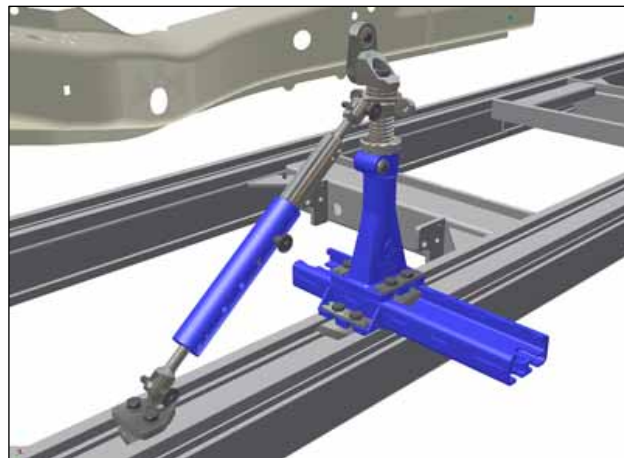
EVO 107 Horizontal Support



EVO 108 Chain and torque bar

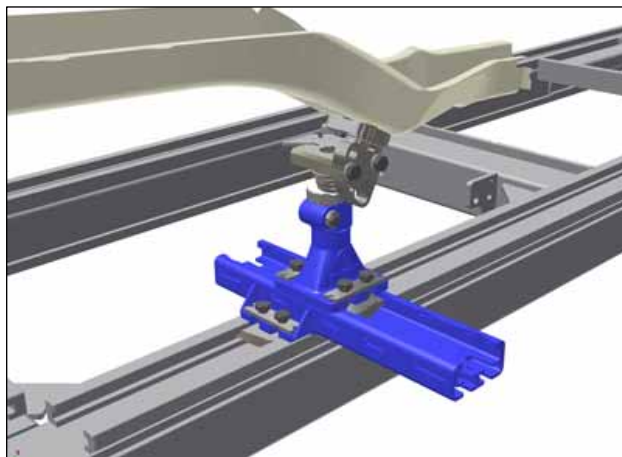


EVO 111 Bushing holder horizontal

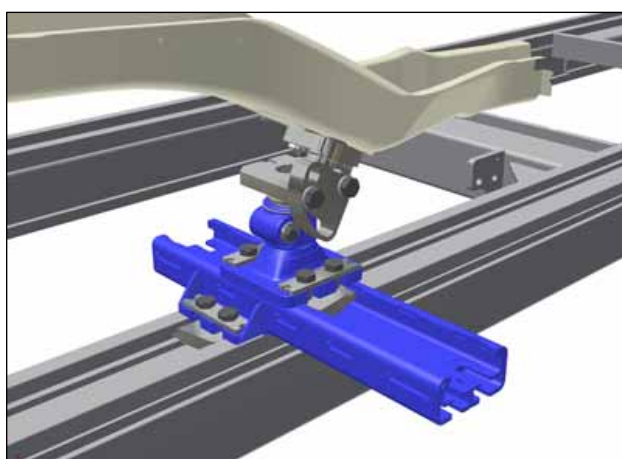


EVO 113 Bushing holder vertical with torque bar

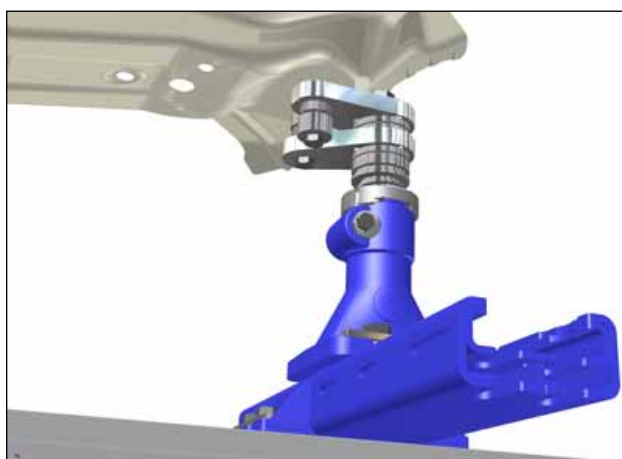
3.2 EVO 2 - Extended Anchoring



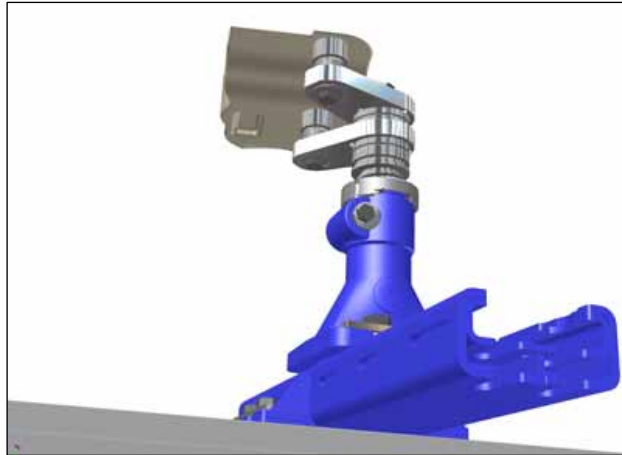
EVO 201 Angle bushing holder



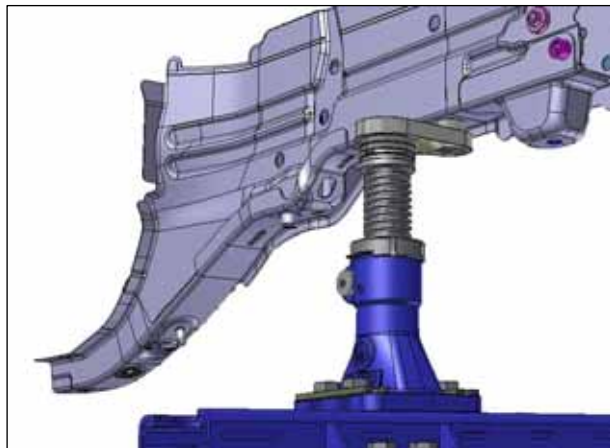
EVO 202 Angle bushing holder LOW without nut



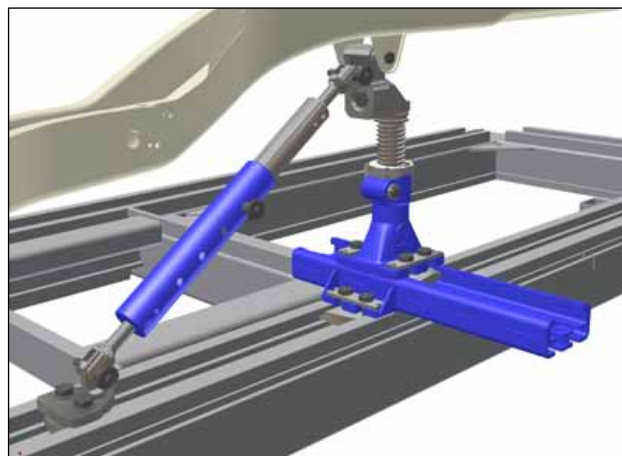
EVO 210 Twin same level



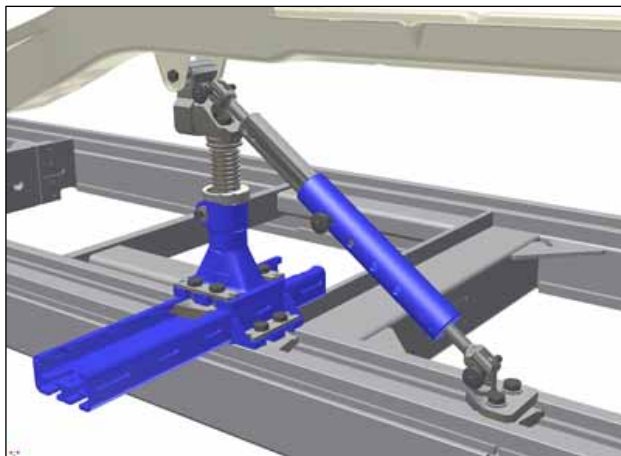
EVO 211 Twin different levels



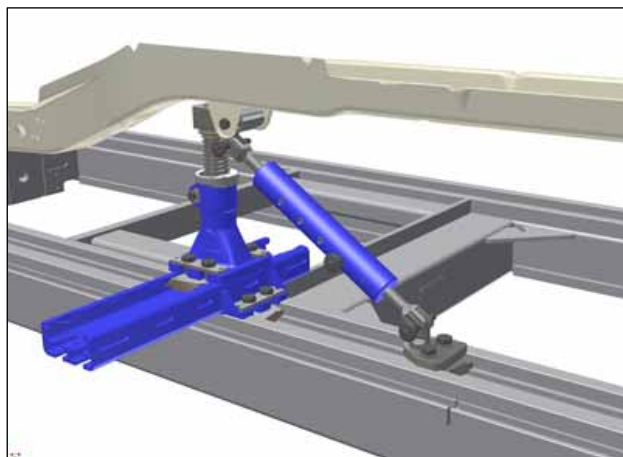
EVO 212 Single twin with bushing



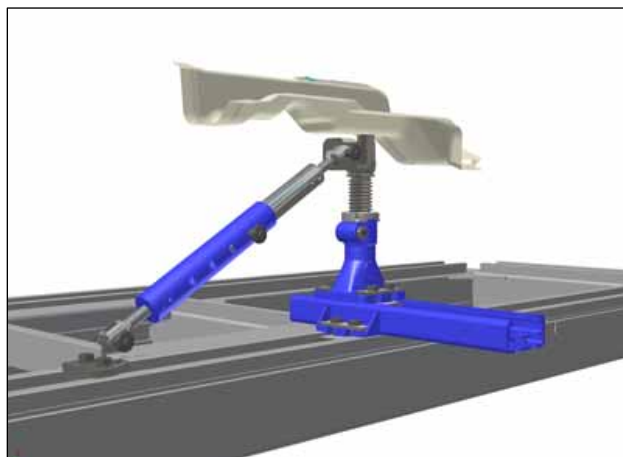
EVO 220 Bracket holder vertical 1



EVO 221 Bracket holder vertical 2

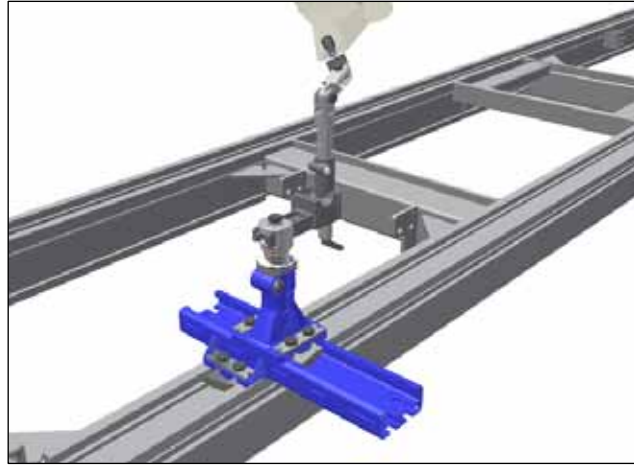


EVO 222 Bracket holder horizontal

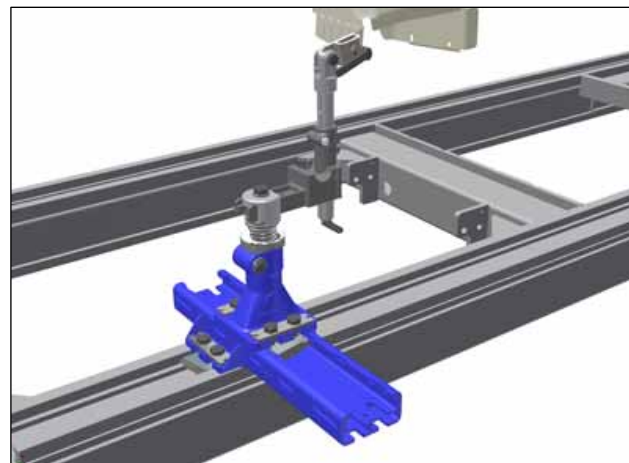


EVO 223 Bracket holder horizontal 90 degrees

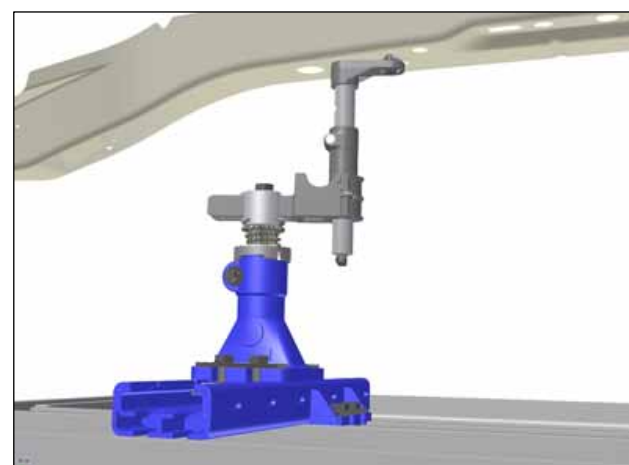
3.3 EVO 3 - Universal Holding & Fixturing System



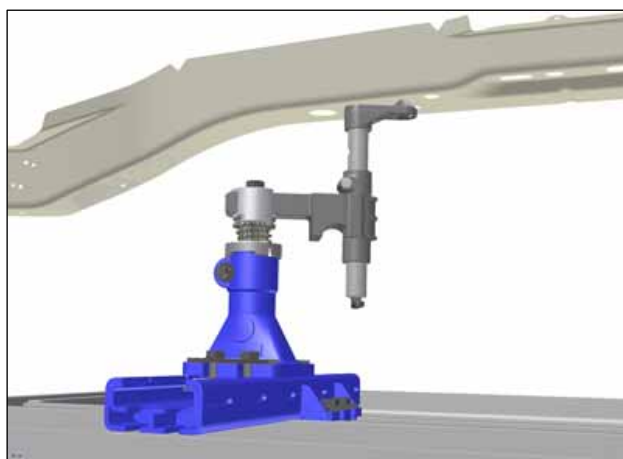
EVO 301 Vertical 2 with mini clamp



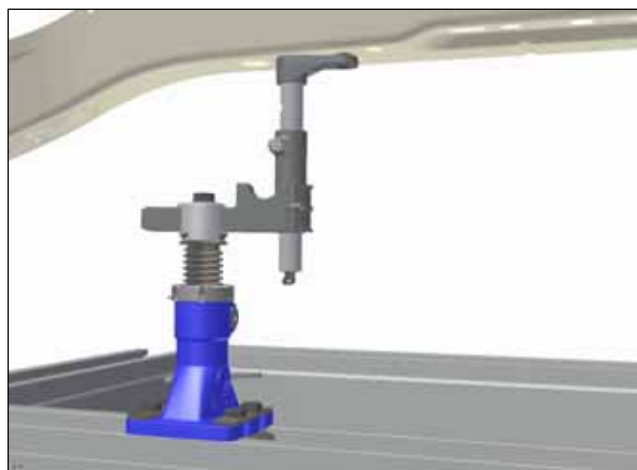
EVO 302 Vertical with mini clamp



EVO 303 Vertical with cone



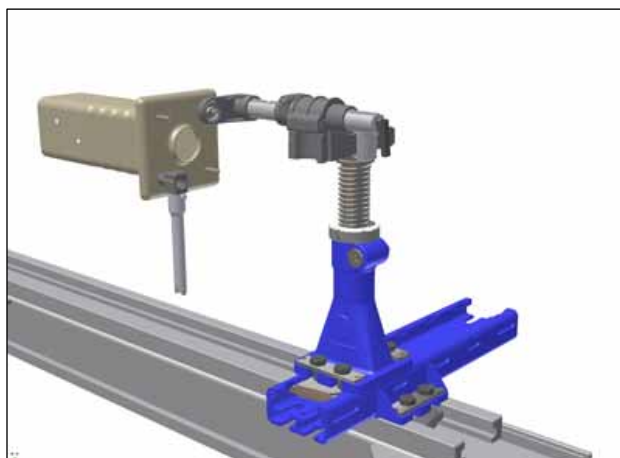
EVO 304 Low vertical with cone



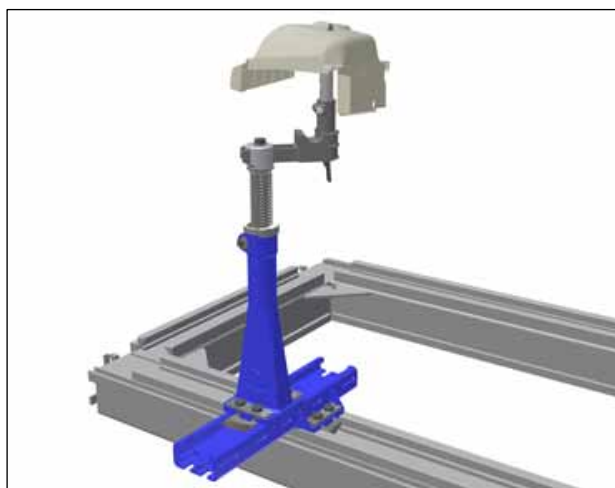
EVO 305 Vertical with flat bushing



EVO 306 Vertical with universal joint



EVO 310 Horizontal with flat bushing



EVO 320 Strut tower with fixing

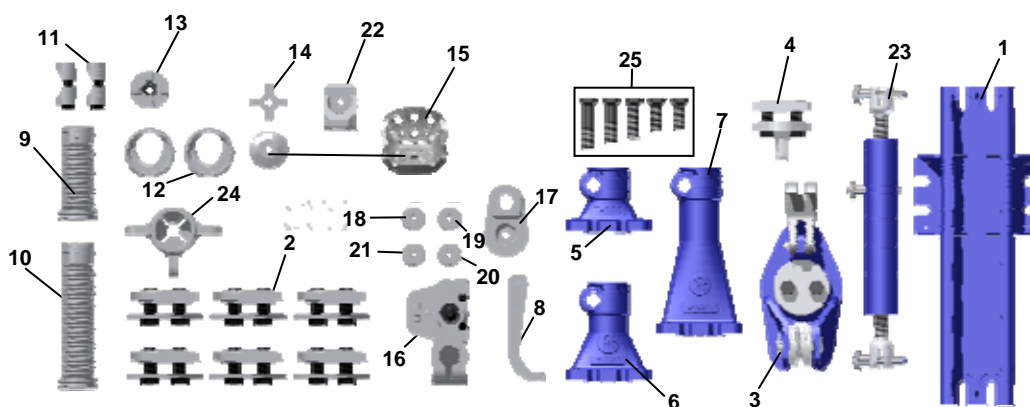
4 Spare parts

The spare parts required for the maintenance of the EVO System are listed in the tables in this chapter.



NOTE: Use only genuine Car-O-Liner AB spare parts.
To order contact your local Car-O-Liner distributor.

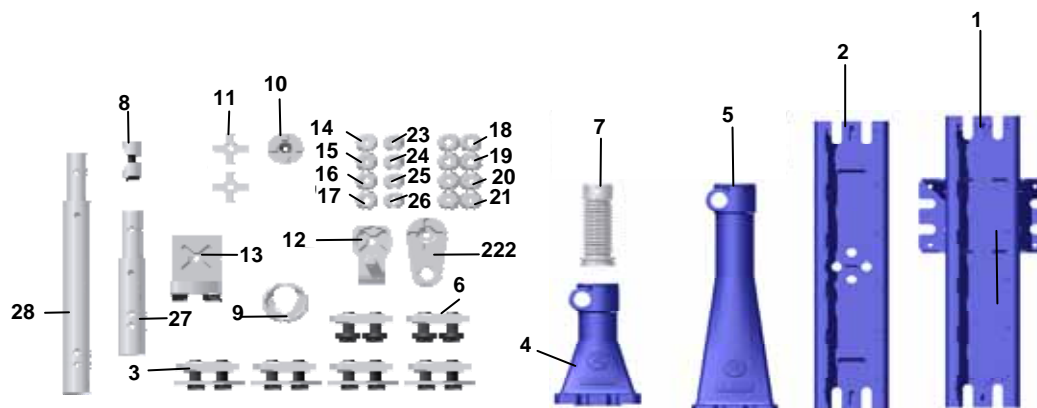
4.1 EVO1



Pos	Object	Quantity	Art. No
1	E100 Trackplate	1	35188
2	B626 Camlock	1	30862
3	E140 Downpull/chainholder	1	35191
4	E130 Chainholder	1	35395
5	E110 Tower 110	1	34783
6	E170 Tower 170	1	35063
7	E290 Tower 290	1	35065
8	E105 Hook spanner	1	35074
9	E150-15 Adjustable holder (short)	1	34784
10	E150-24 Adjustable holder (Long)	1	34785
11	E120 Lock Wedge, cpl	1	35418
	SP96 Snap ring, tower	2	35072
12	E164 Nut, tower	1	35068
13	E165 Gearplate set	1	35194
14	E166 "Plus" plate	1	35079
15	E145 Clamp bracket	1	35193

16	E115 MPC clamp	1	35192
17	E190 Adapter for bushing	1	35143
18	E191-10 Bushing 10	1	35444
19	E191-12 Bushing 12	1	35445
20	E191-14 Bushing 14	1	35446
21	E191-16 Bushing 16	1	35441
22	E125 Angle holder 90°	1	35088
23	E175 Torque bar	1	35390
24	E177 Support Collar	1	35183
25	SP 244 Screw kit - EVO1, std	1	35551

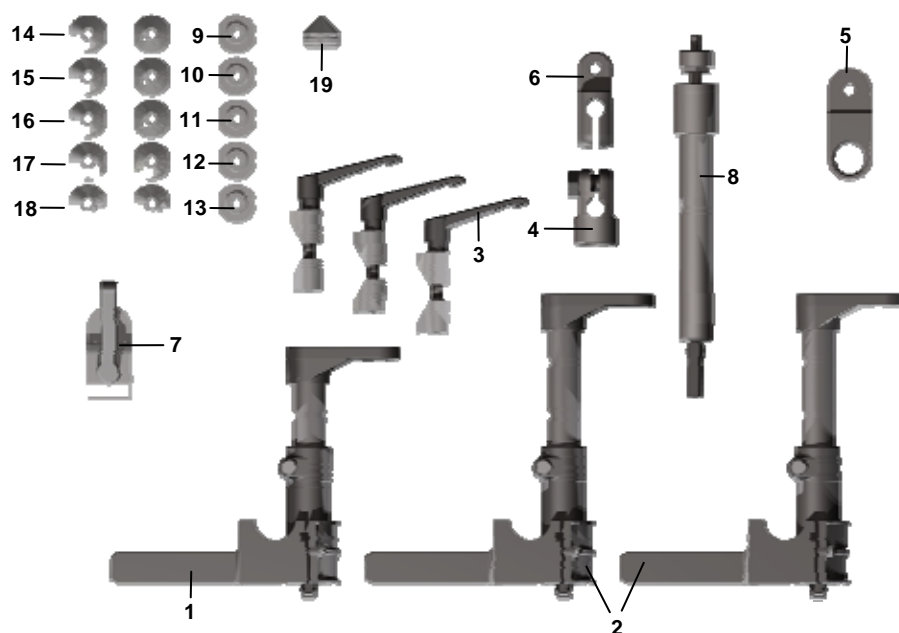
4.2 EVO2



Pos	Object	Quantity	Art. No
1	E100 Trackplate	1	35188
2	E101 Trackplate extension	1	35187
3	B626 Camlock, cpl	4	30862
4	E230 Tower 230	1	35064
5	E440 Tower 440	1	35066
6	E102 Camlock, cpl with washer	2	35416
	SP 96 Snap ring	1	35072
7	E150-15 Adjustable holder (Short)	1	34784
8	E120 Lock wedge, cpl	1	35418
9	E164 Nut, tower	1	35068
10	E165 Gearplate set	1	35194
11	E166 "Plus" plate	2	35079
12	E135 Angle holder adjustable	1	35196
13	E180 Rear axle bracket	1	35392
14	E181-12 Threaded bushing 12	1	35102
15	E181-14 Threaded bushing 14	1	35112
16	E181-16 Threaded bushing 16	1	35120

17	E181-18 Threaded bushing 18	1	35121
18	E182-12 Threaded bushing long, 12	1	35122
19	E182-14 Threaded bushing long, 14	1	35123
20	E182-16 Threaded bushing long, 16	1	35124
21	E182-18 Threaded bushing long, 18	1	35125
22	E185 Twin bushing holder	1	35195
23	E186-12 Threaded bushing long, 12	2	35127
24	E186-14 Threaded bushing long, 14	2	35129
25	E186-16 Threaded bushing long, 16	2	35130
26	E186-18 Threaded bushing long, 18	2	35131
27	E176-20 Torque bar extension, 200	1	35385
28	E176-40 Torque bar extension, 400	1	35386
26	Screw kit EVO 2, std	1	35552
27	Screw kit EVO 2, spec	1	35553
28	Locking pin	2	35389

4.3 EVO3



Pos	Object	Quantity	Art. No
1	E300-30 EVO 3 holder short, cpl	1	35421
2	E300-50 EVO 3 holder, cpl	2	35397
3	E320 Lock wedge with handle	3	35423
4	E310 Angle holder 90°	1	35467
5	E330 Bracket angle holder 90°	1	35406
6	E340 Bracket angle holder	1	35468
7	E350 Mini clamp	1	35401
8	E360 Universal joint	1	35412
9	E370-10 Threaded bushing 10	1	35221
10	E370-12 Threaded bushing 12	1	35222
11	E370-14 Threaded bushing 14	1	35223
12	E370-16 Threaded bushing 16	1	35224
13	E370-08 Threaded bushing 8	1	35225
14	E380-10 Threaded cone bushing 10	2	35215

15	E380-12 Threaded cone bushing 12	2	35216
16	E380-14 Threaded cone bushing 14	2	35217
17	E380-16 Threaded cone bushing 16	2	35218
18	E380-08 Threaded cone bushing 8	2	35509
19	E380-00 Threaded cone bushing	1	35220

5 User instructions

Symbol explanation for this chapter:

Together with the pictures in Index D there are explanatory symbols:



Recommended way (of use, to mount parts etc)



Not recommended way (of use, to mount parts etc). Risks for personal injuries and or damages to equipment.



Works, but not the most recommended way (of use, to mount parts etc)

F

Strong force

f

Small force



Force direction



Correct pull direction



Incorrect pull direct



Fig 5-1

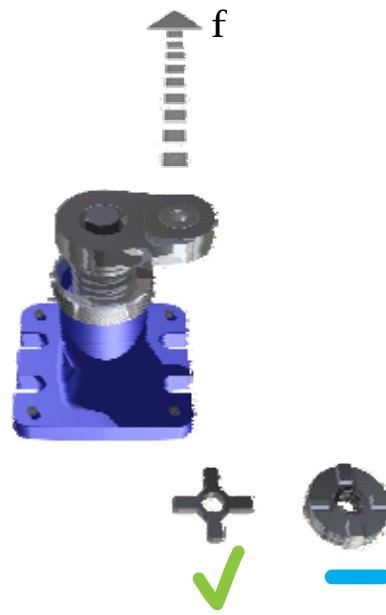


Fig 5-2



Fig 5-3

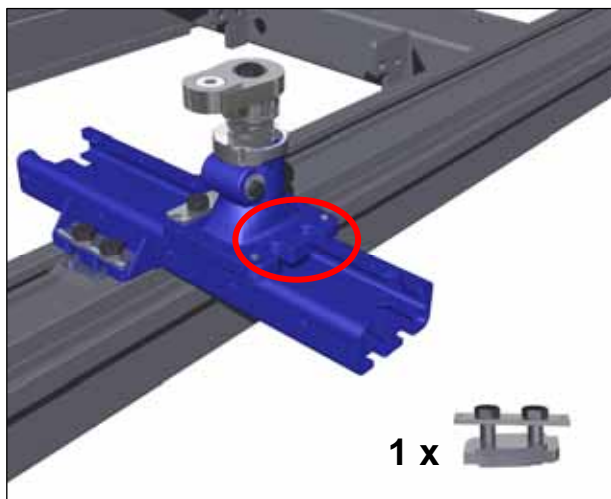


Fig 5-4

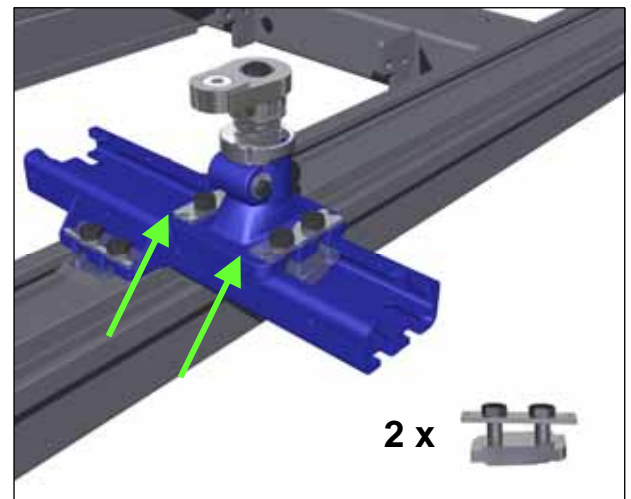


Fig 5-5

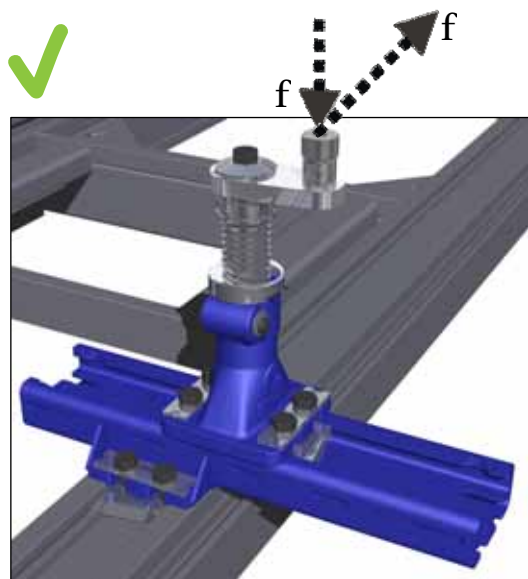


Fig 5-6

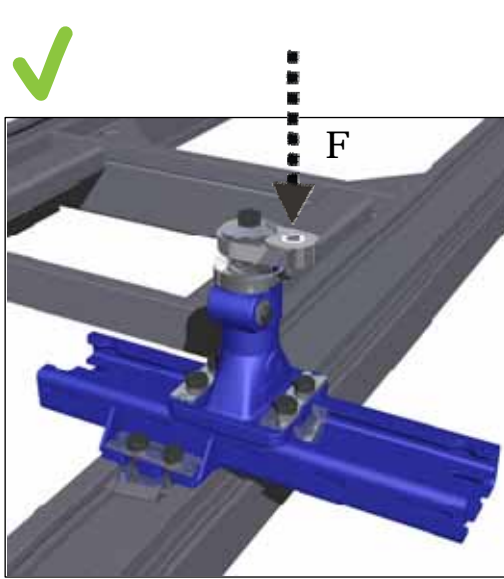


Fig 5-7

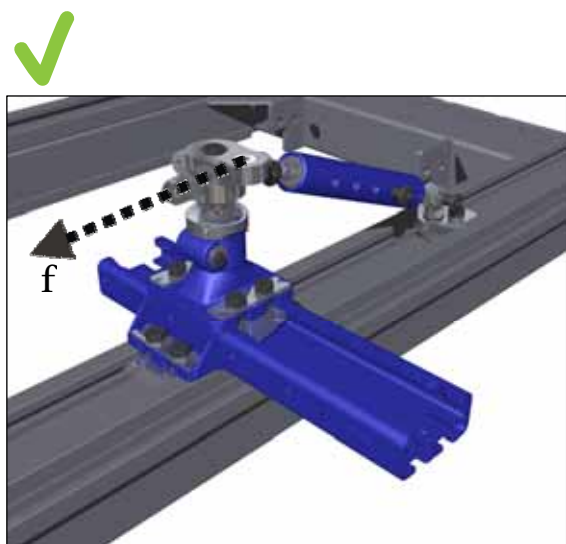


Fig 5-8

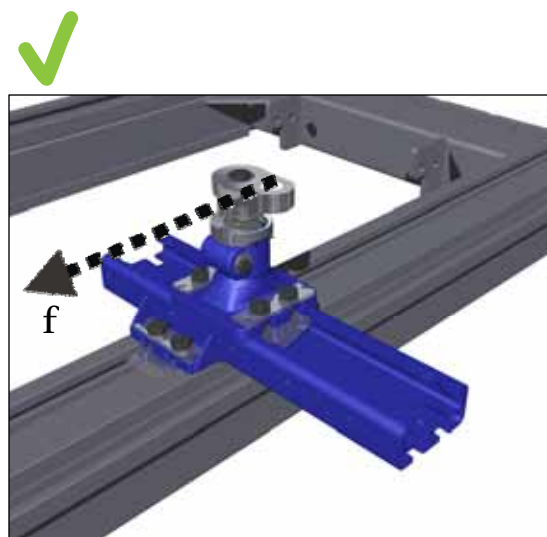


Fig 5-9

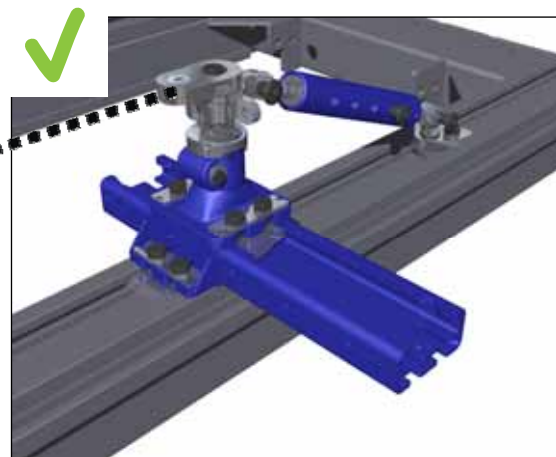
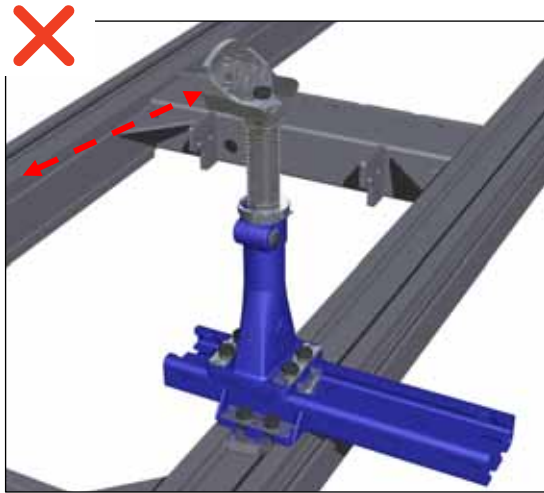
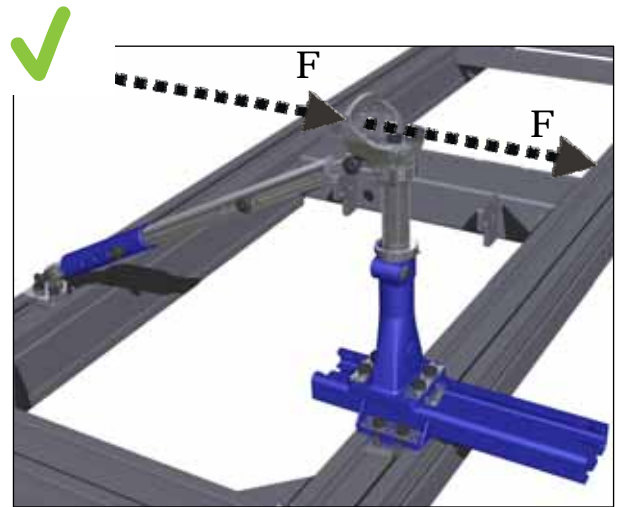
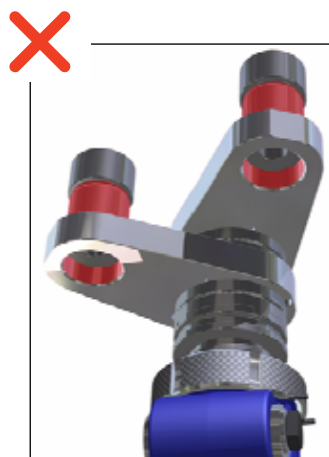


Fig 5-10

*Fig 5-14**Fig 5-15**Fig 5-16**Fig 5-17*

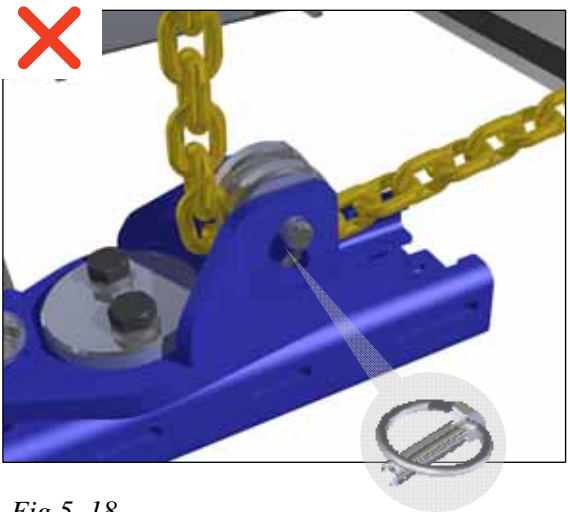


Fig 5-18

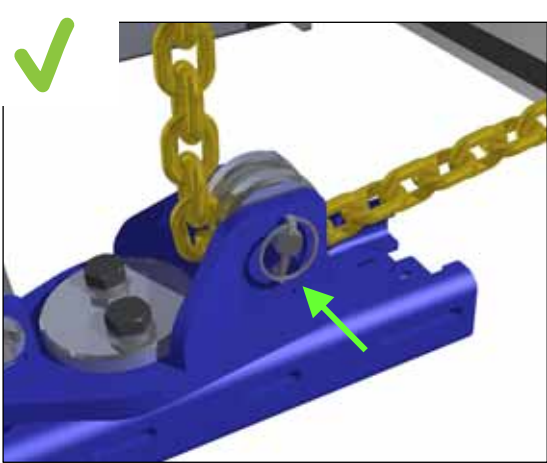


Fig 5-19

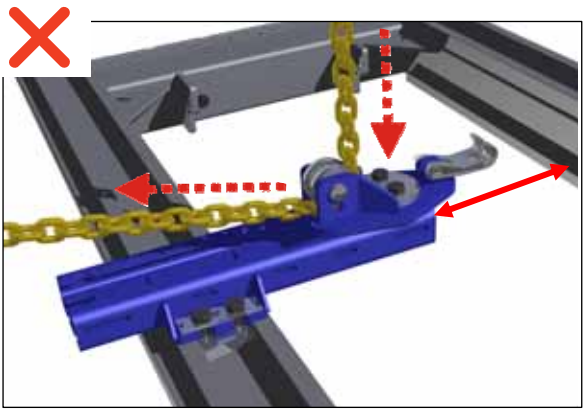


Fig 5-20

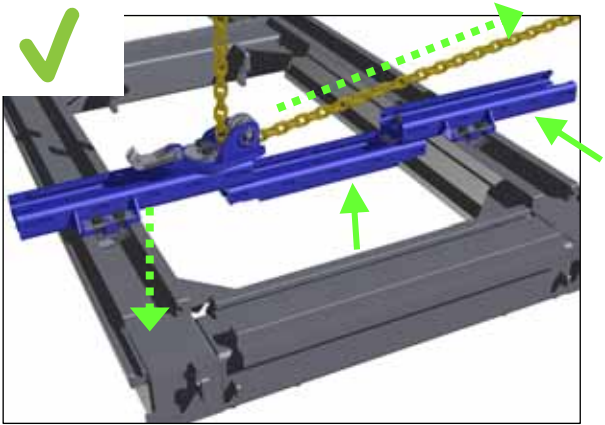


Fig 5-21

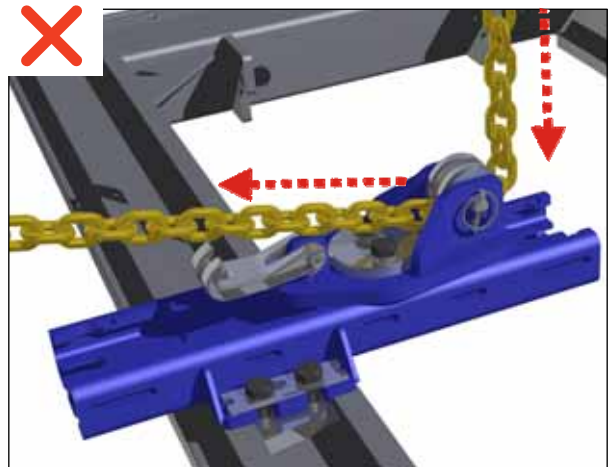


Fig 5-22

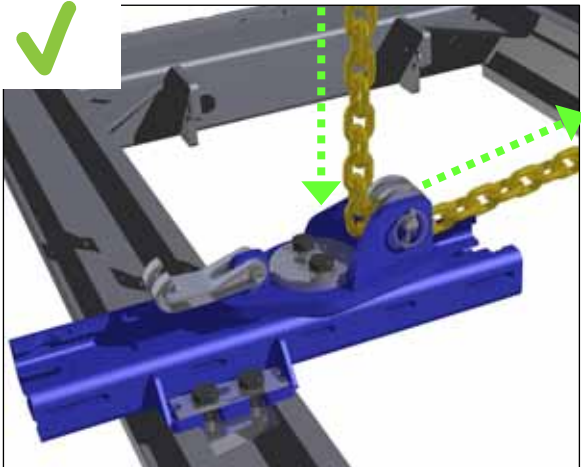


Fig 5-23

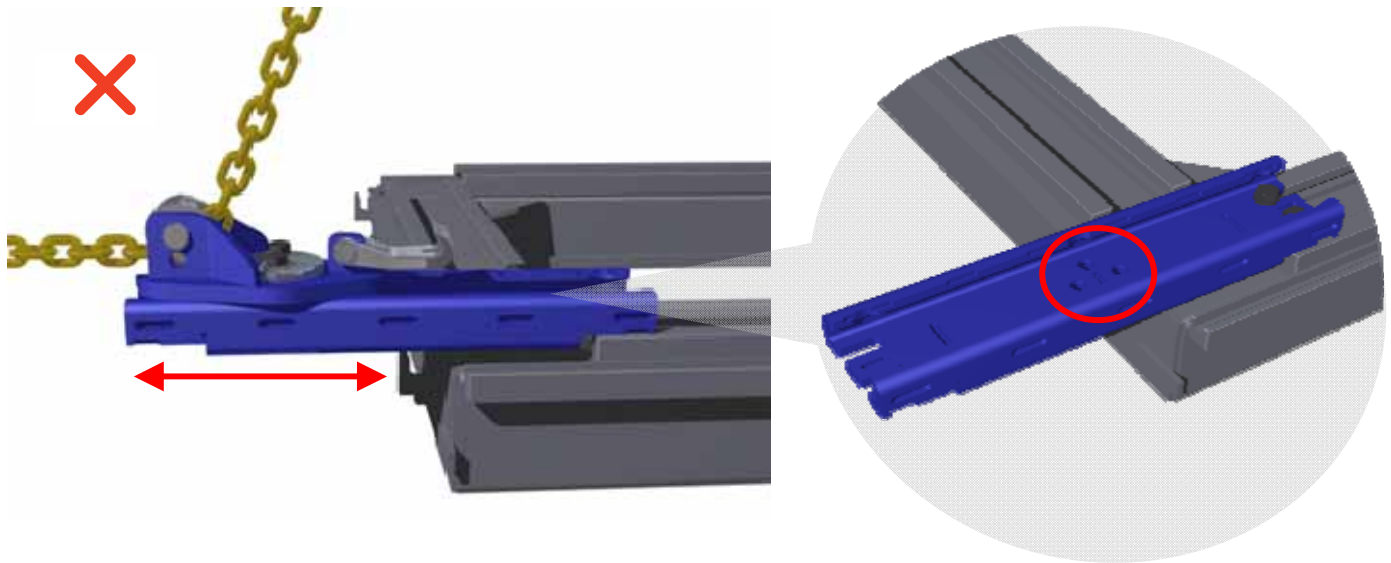


Fig 5-24

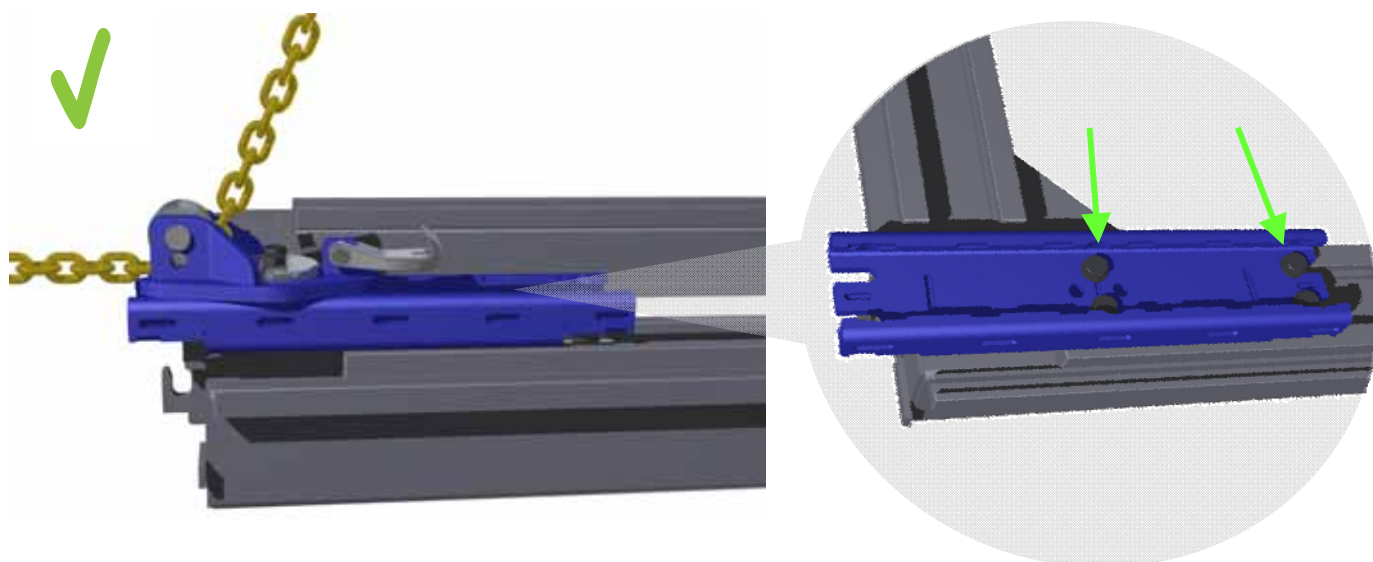


Fig 5-25

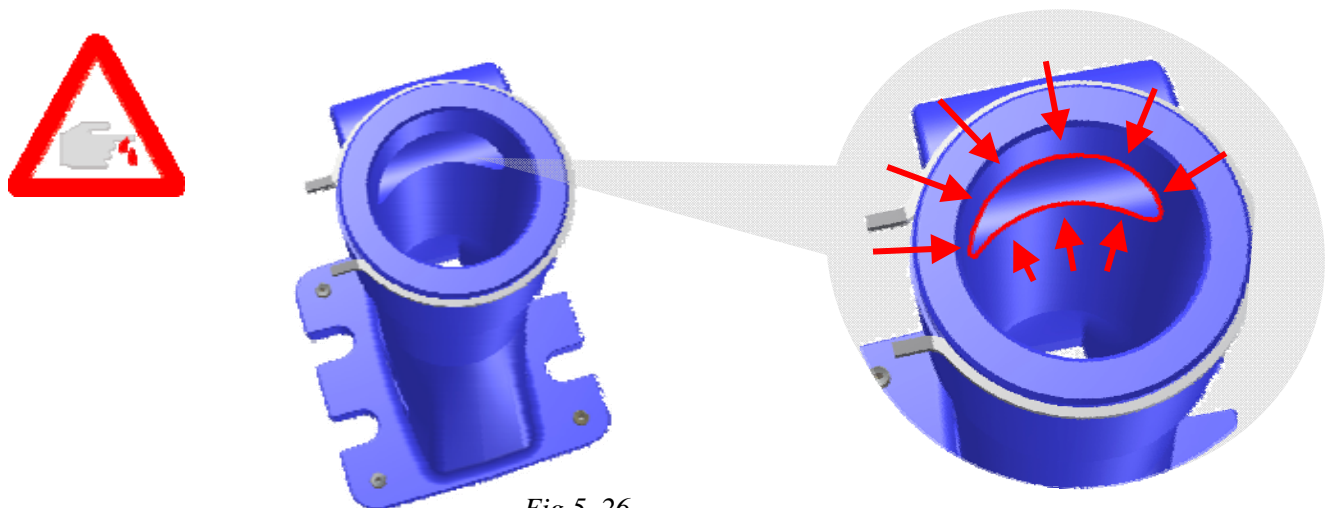


Fig 5-26

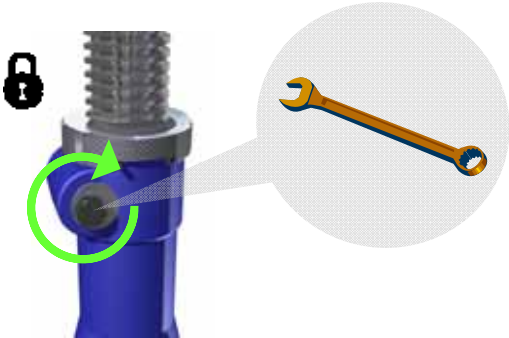


Fig 5-27

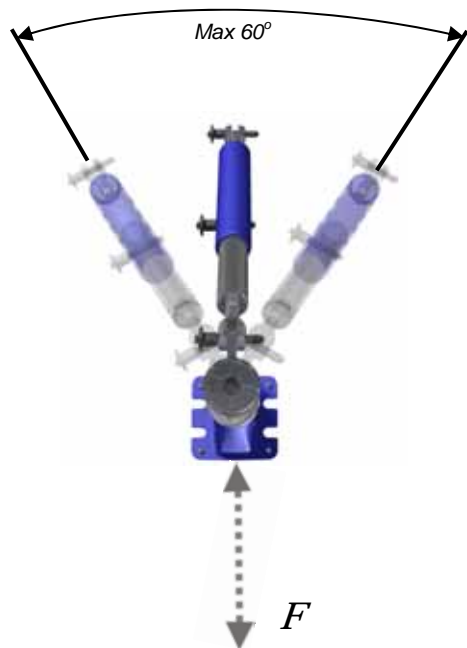


Fig 5-28

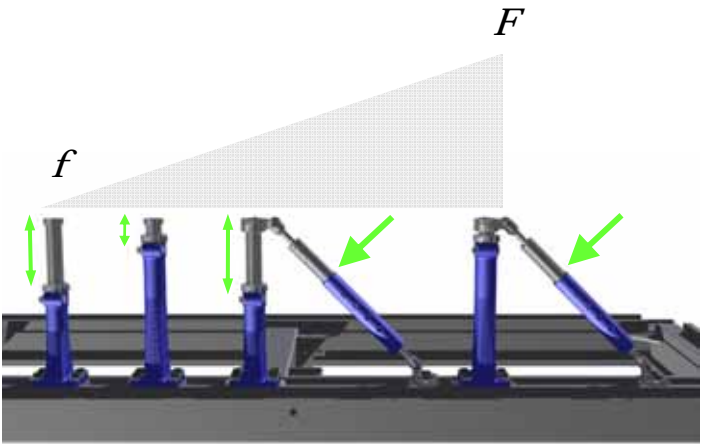


Fig 5-29

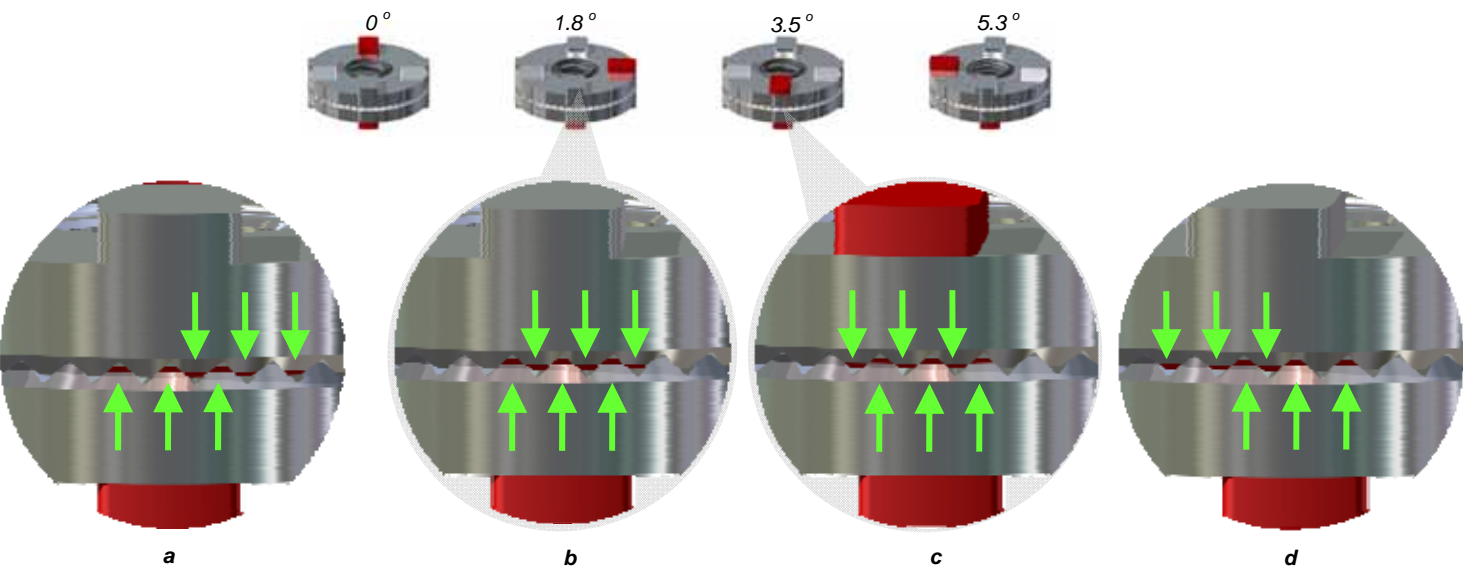


Fig 5-30a-d

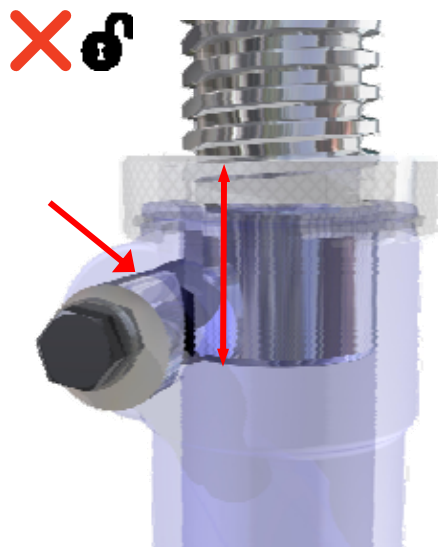


Fig 5-31

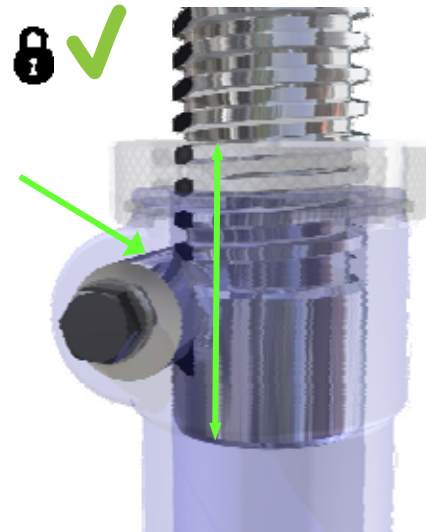


Fig 5-32

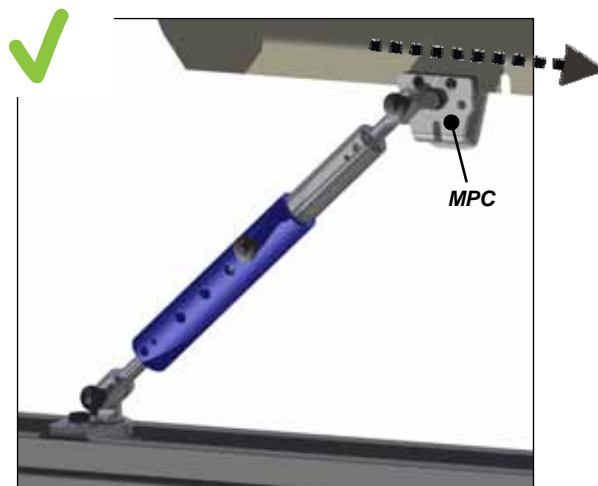


Fig 5-33

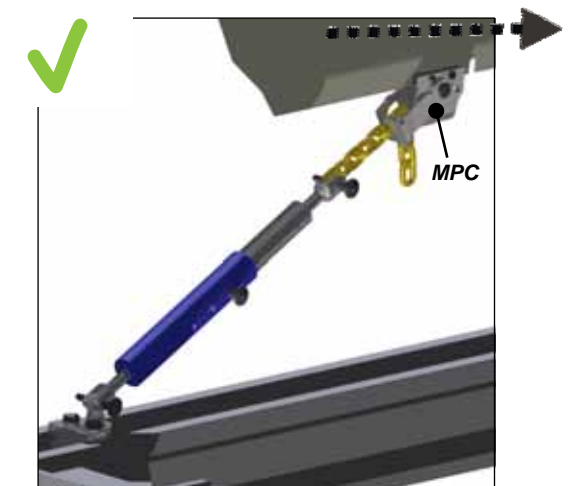


Fig 5-34

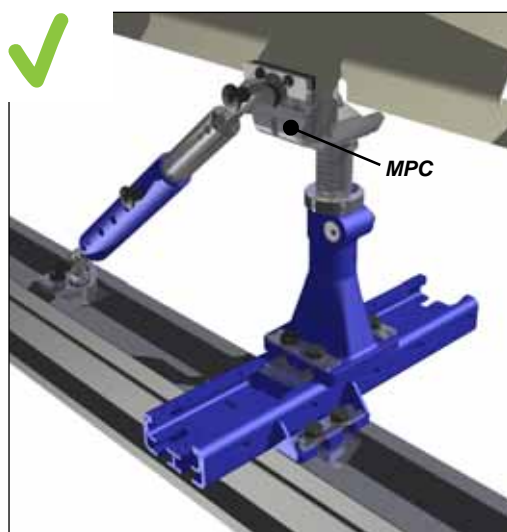


Fig 5-35

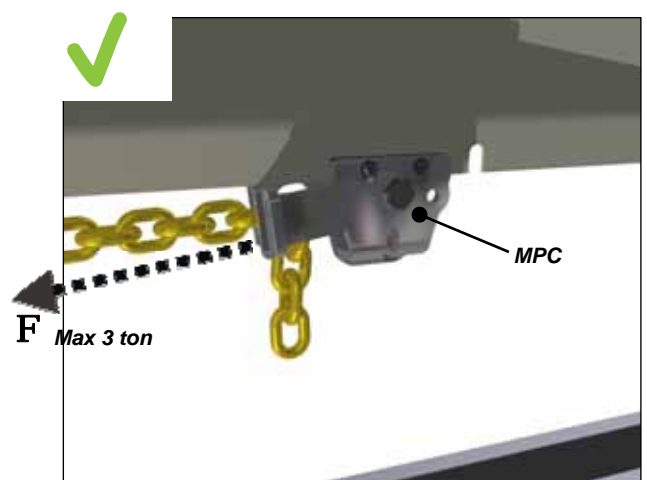


Fig 5-36

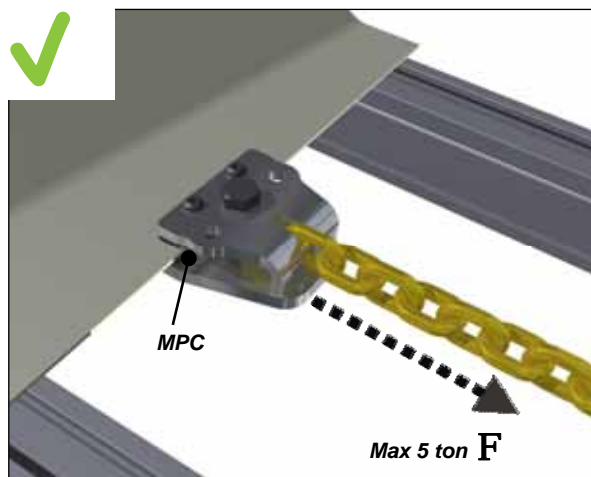


Fig 5-37

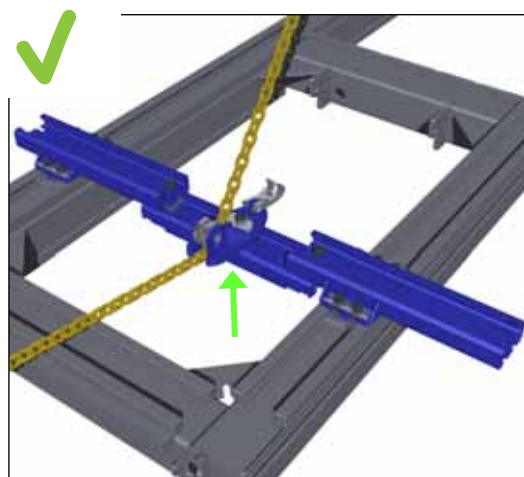


Fig 5-38

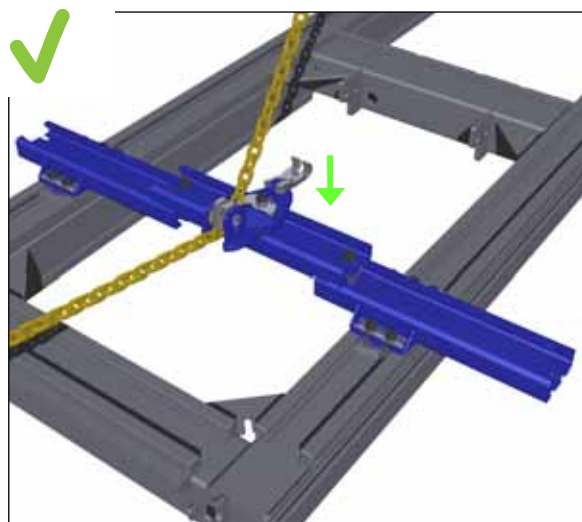


Fig 5-39



Fig 5-40



Fig 5-41

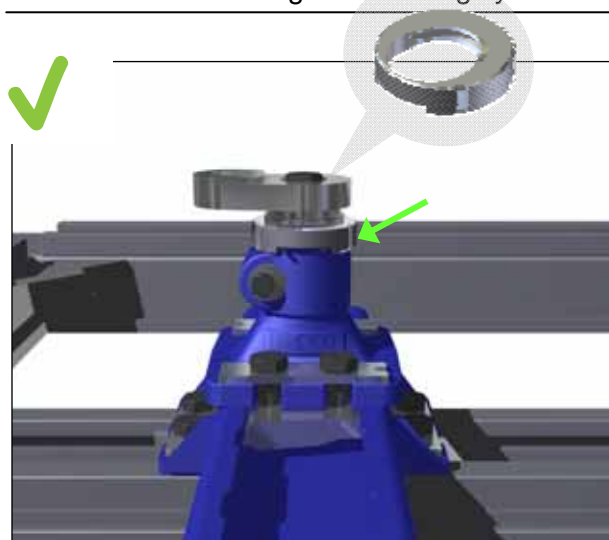


Fig 5-42

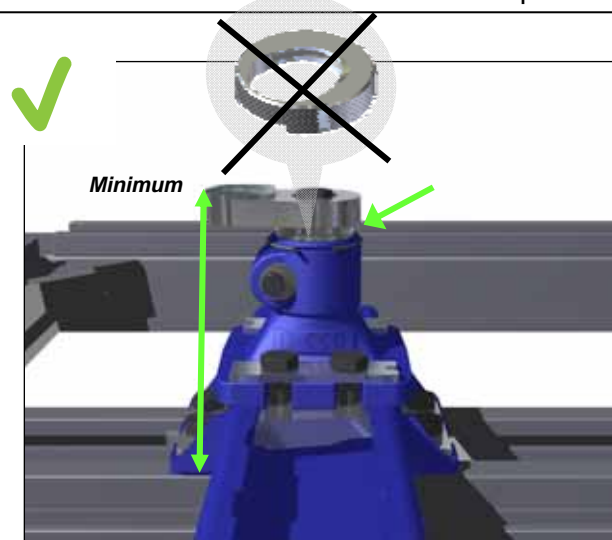


Fig 5-43



Fig 5-44



Fig 5-45

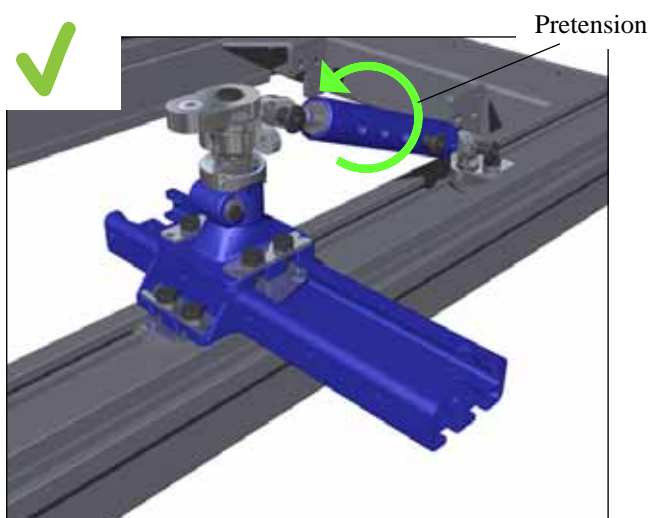


Fig 5-46

5.1 How to position and use EVO3

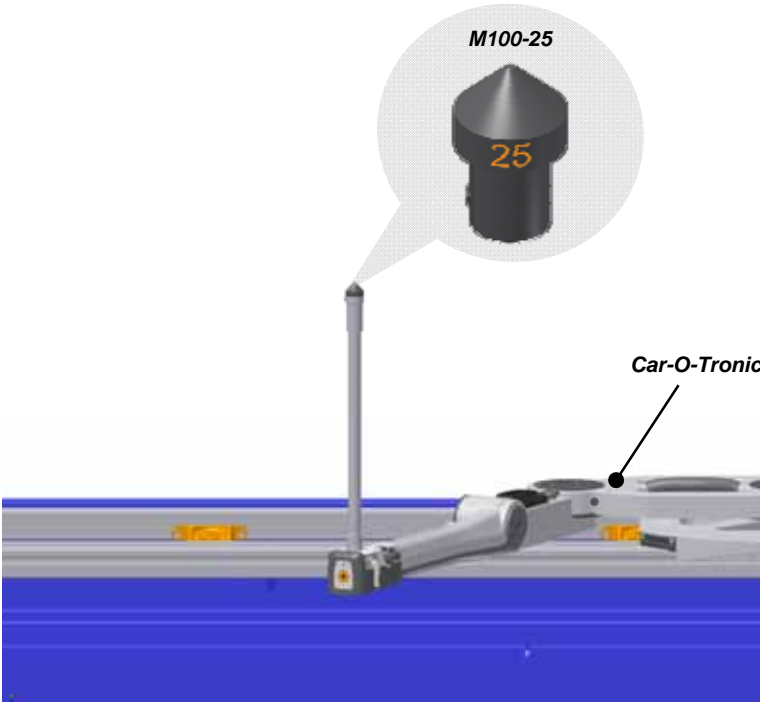


Fig 5-47

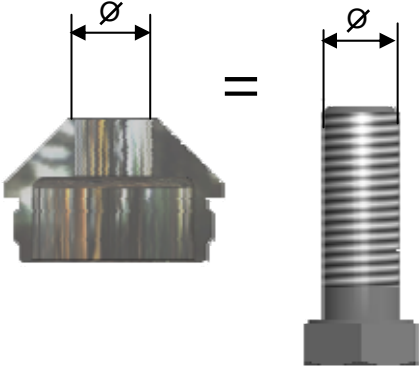


Fig 5-48

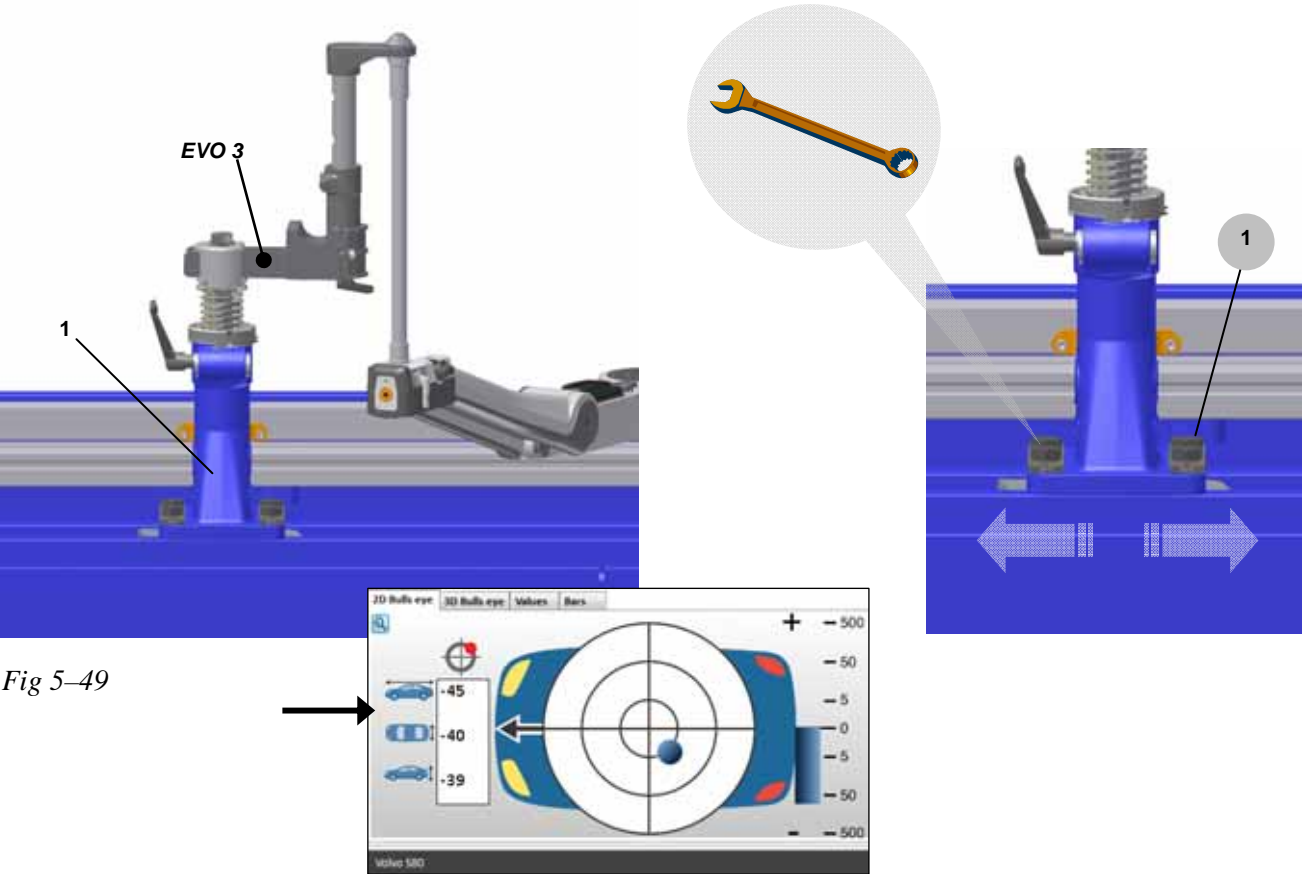


Fig 5-49

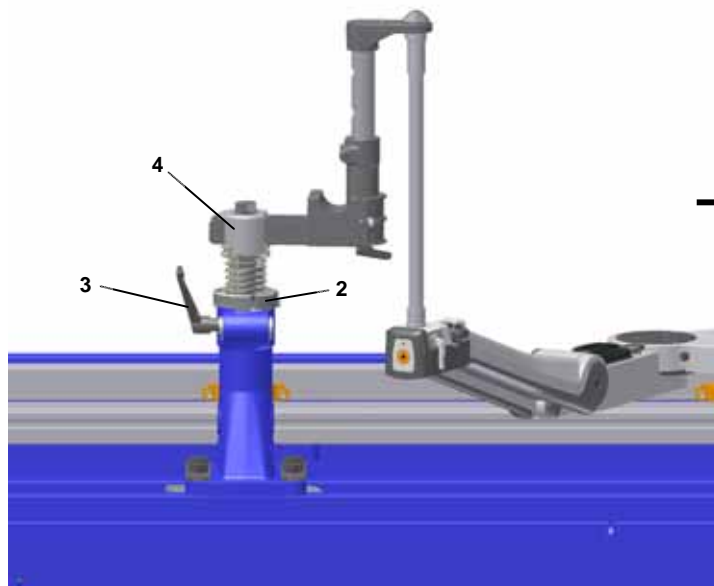


Fig 5-50

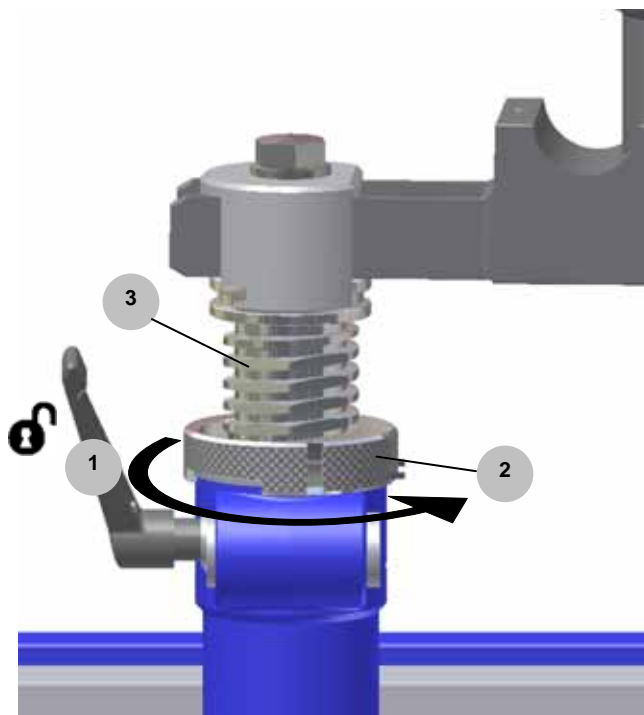
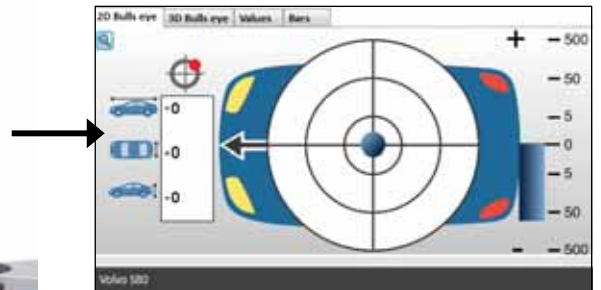


Fig 5-51

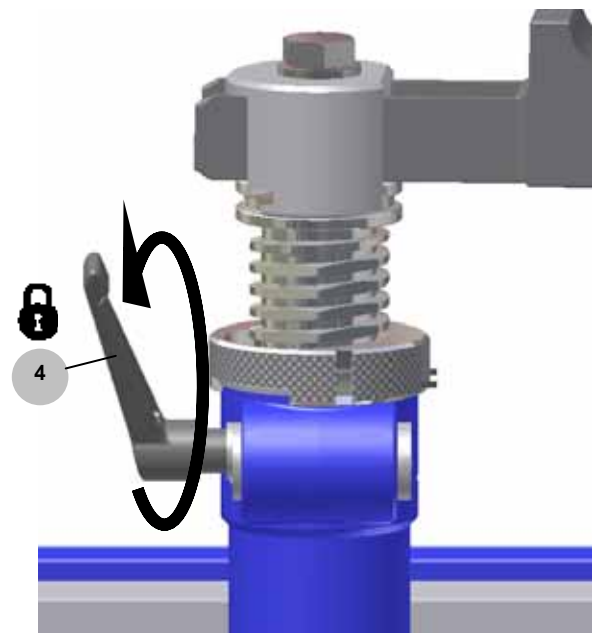


Fig 5-52

5.2 Release and drop down the E300

1. Press the button to drop down the fixture.

2. Place the new part (2).

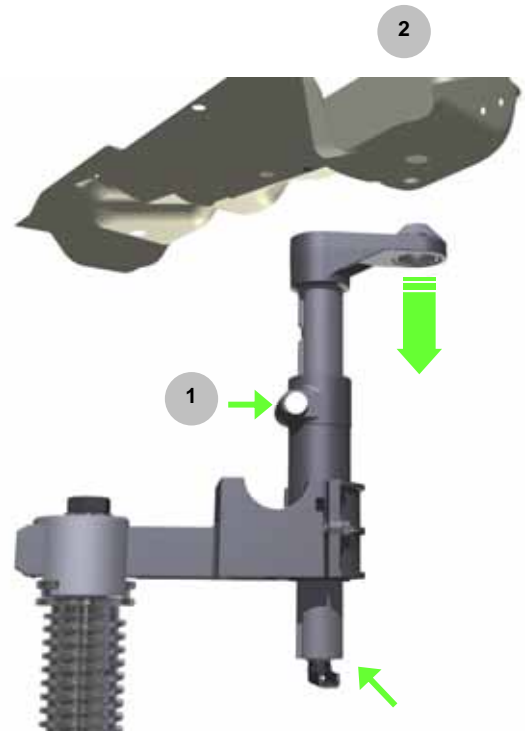


Fig 5 –53

3. Reposition the E300 to the same height and position as in step 1 with the new part in place.



Fig 5–54

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