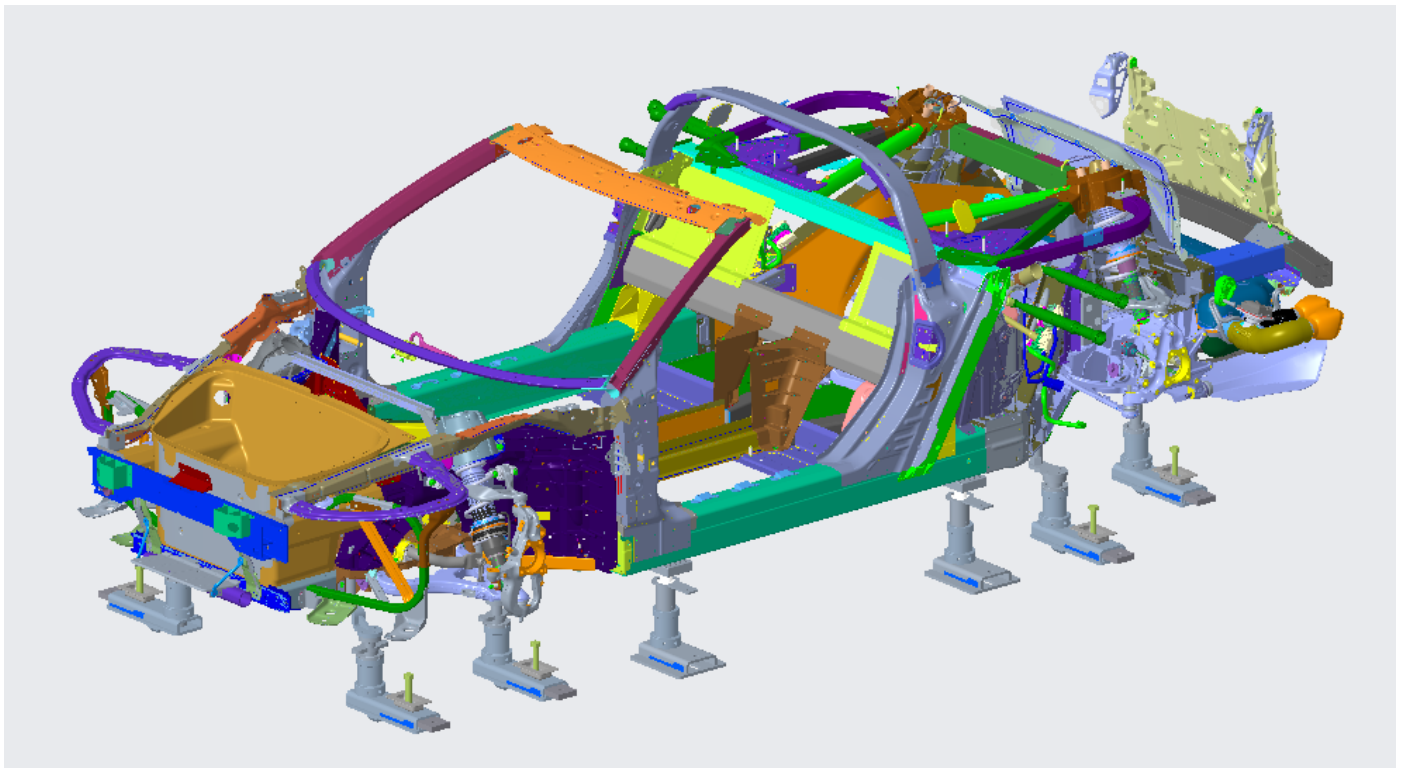




GM C8-Corvette Structural Holding System Users Manual

IMPORTANT

Always refer to OEM repair procedures for proper repair guidelines. Never subject GM C8-Corvette to pulling forces.



CHIEF'S LIMITED ONE-YEAR WARRANTY & LIABILITY

Chief Automotive Technologies warrants for one year from the date of installation and/or purchase any of its products which do not perform satisfactorily due to defect caused by faulty material or workmanship. Chief's obligation under this warranty is limited to the repair or replacement of products which are defective and which have not been misused, carelessly handled, or defaced by repairs made or attempted by others.

CHIEF AUTOMOTIVE TECHNOLOGIES DOES NOT ASSUME RESPONSIBILITY FOR ANY DEATH, INJURY OR PROPERTY DAMAGE RESULTING FROM THE OPERATOR'S NEGLIGENCE OR MISUSE OF THIS PRODUCT OR ITS ATTACHMENTS. CHIEF MAKES NO WRITTEN, EXPRESS OR IMPLIED WARRANTY WHATSOEVER OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE REGARDING THE EQUIPMENT OR ANY PART OF THE PRODUCT OTHER THAN THE LIMITED ONE-YEAR WARRANTY STATED ABOVE.

This users manual is designed to assist operators with the safe and efficient use of the Chief C8 Corvette Structural Holding System. When used with Chief Electronic Measuring, the parts holding system provides operators with the ability to accurately and securely hold replacement parts during vehicle repair.

IMPORTANT:

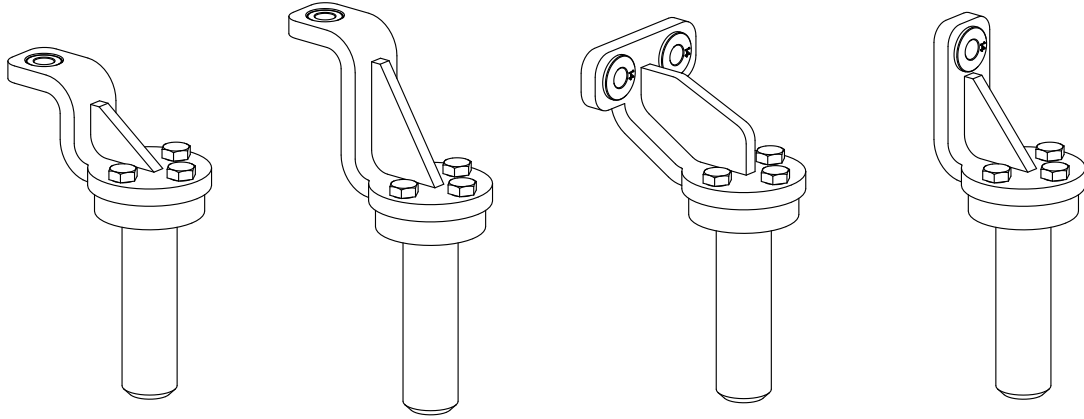
This manual only identifies basic usage procedures for the C8 Corvette Structural Holding System, it must be used with the Chief Structural Holding System (CK300021). The usage of the system is limited only by the imagination of the technician doing the work.

The Chief C8 Corvette Structural Holding System is designed for the holding and positioning replacement parts. It is not designed as a replacement for Chief Anchoring. **IMPORTANT** The C8 Corvette Structural Holding System must not be subjected to pulling forces. The Chief Universal Stands provided will serve as the primary vehicle holding.

Because Chief C8 Corvette Structural Holding System works with Chief electronic measuring, special attention should be given to the replacement of the Structural Holding stands during setup. Best results will be achieved with the stands located on the perimeter of the vehicle being repaired to prevent shading of measuring targets.

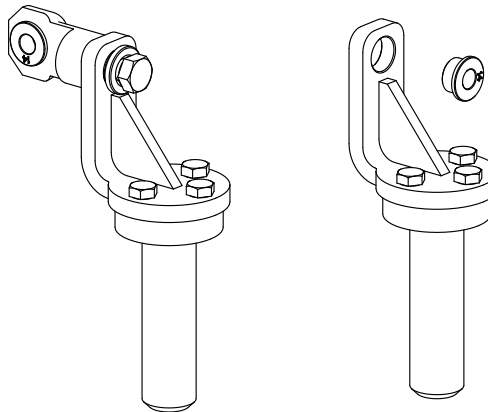
PLANNING AND SETUP

The Holding System is a universal system that will adapt to any Chief style systems with rectangular holes in the deck. The Fixtures are designed to be bolted to any existing threaded bolt or any location there is a threaded nut, flange or boxed rail on a vehicle. This could be used with suspension (components) that are installed or removed and are designed with an offset to also be used with Chiefs computerized measuring system. The system includes short vertical fixtures and tall vertical fixtures that will accommodate most bolts or threaded holes from 6mm to 25mm with the use of bushings. The large and tall horizontal fixtures are designed for any bolts or bolt hole ranging from 6mm to 25mm with the use of bushings that is facing forward, inward, outward or rearward.

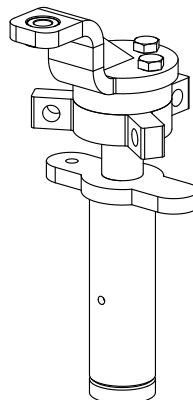


Additional attachments will allow for connection of the fixture to the structure in several different methods. The angle adapter allows for the location of the fixture to be used if the location is at an angle.

Note: All bushings are designed to allow for the correct sizing of the hole for the bolt to be used to allowing for centering of the Fixture and should be placed on the opposite side of the fixture away from the structure.



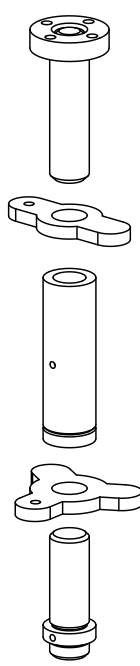
A heavy three-ear rigging nut can be placed directly below the foundation adapter. This will serve as a cable tie off when additional stability is needed.



Directly below the foundation adapter is the turnbuckle adjustment mechanism. The foundation adapter threaded stud screws into the top of the turnbuckle center section while the Structural Holding lower adapter screws into the bottom. A two-ear wing nut is threaded on to the foundation adapter to lock the top half of the turnbuckle once correct vertical position is achieved. A three-ear wing nut is threaded on the lower adapter to lock that half of the turnbuckle.

Note: The long threaded portion of the Structural Holding lower adapter utilizes a left hand thread, which is compatible with the bottom of the turnbuckle center section (marked with a v-groove around the outside of the part) and the three-ear wing nut.

Turnbuckle Assembly

	<ol style="list-style-type: none">1. Completely thread two-ear wing nut onto foundation adapter threaded stud.2. Thread non-grooved end of turnbuckle center section completely onto foundation adapter threaded stud.3. Completely thread three-ear wing nut onto Parts Holding lower adapter.4. Completely thread Structural Holding lower adapter three-ear wing nut assembly into grooved end of the turnbuckle center section.
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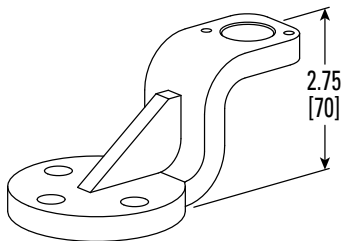
The short threaded side of the Structural Holding lower adapter is a standard right hand thread that is compatible with the Structural Holding stand base and extension tubes.

Note: It is not necessary to completely disassemble the turnbuckle section when changing setups or reconfiguring the stand. The fully assembled turnbuckle section can be unscrewed from the rest of the stand system using the included spanner wrenches.

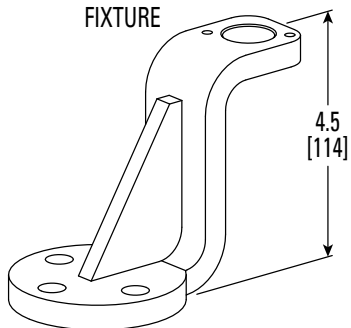
Note: For best results, always have foundation adapter and the lower Structural Holding adapter threaded into the turnbuckle center section equal amounts before starting up.

Vertical positioning of the C8 Corvette Structural Holding System, when used in conjunction with the Structural Holding System, uses a turnbuckle style adjustment over a 4.5" (115mm) range. Additional height can be achieved by using the extension tubes and extension adapters included with the system. Compare the approximate height required to the table below to determine how to configure the extension tubes and adapters.

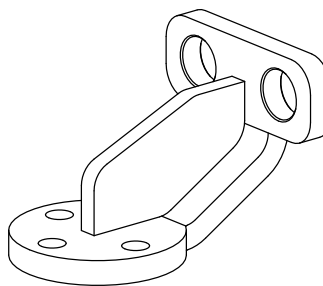
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SHORT VERTICAL FIXTURE
(FOR EXTENDED REACH USE CK110123)



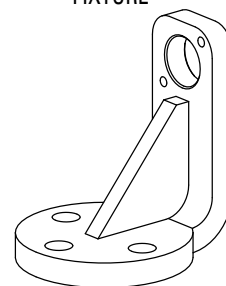
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TALL VERTICAL
FIXTURE



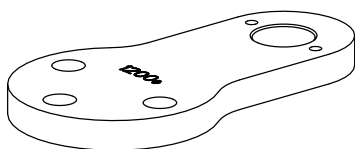
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LARGE HORIZONTAL
FIXTURE



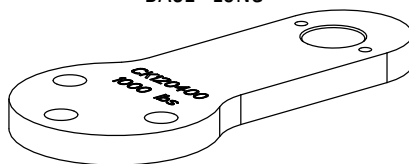
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TALL HORIZONTAL
FIXTURE



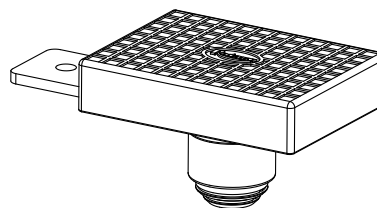
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FLAT FIXTURE



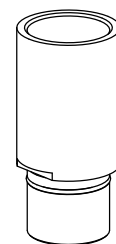
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FLAT FIXTURE
BASE - LONG



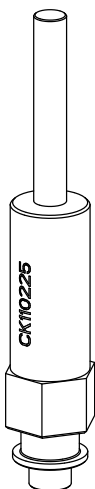
CK110124
ADAPTER WITH
LEVER ADJUSTMENT



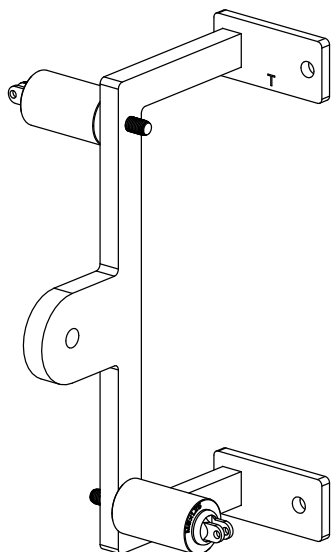
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90mm EXTENSION



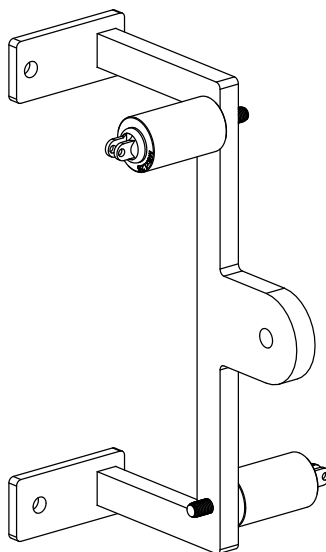
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STANDOFF
M14 X 85



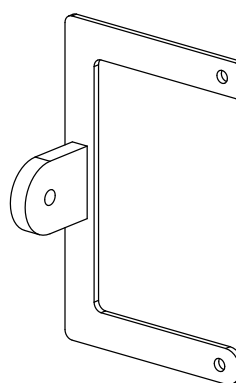
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A-PILLAR
RIGHT C8



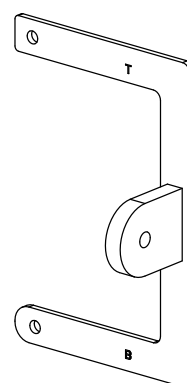
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A-PILLAR
LEFT C8



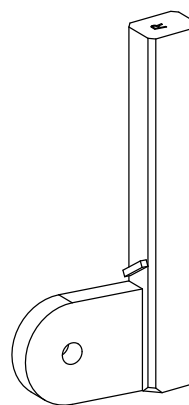
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INNER A
FIXTURE RIGHT



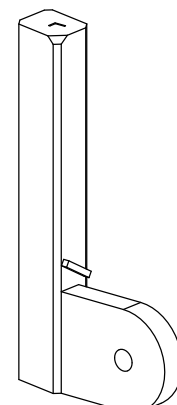
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INNER A
FIXTURE LEFT



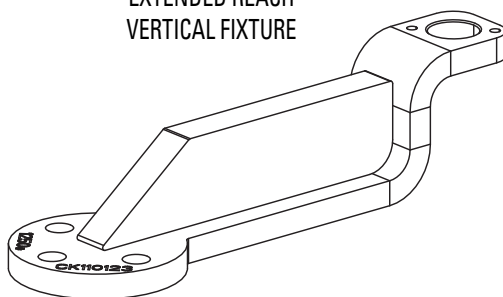
CK110238
B-PILLAR
REINFORCEMENT LEFT



CK110239
B-PILLAR
REINFORCEMENT RIGHT



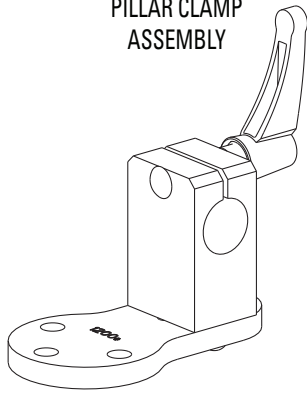
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EXTENDED REACH
VERTICAL FIXTURE



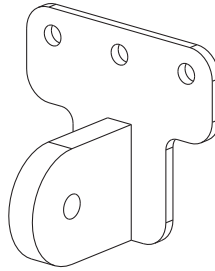
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ANGLE ADAPTER
CLAMP



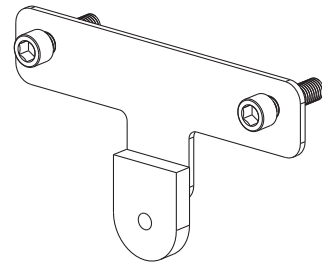
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PILLAR CLAMP
ASSEMBLY



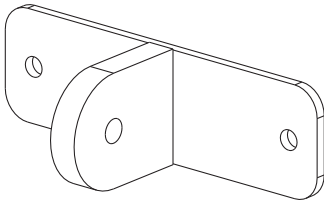
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ROOF BOW
FIXTURE C8



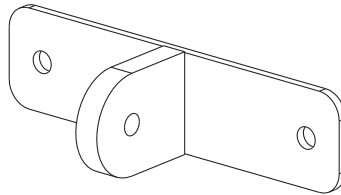
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ROOF HEADER
FIXTURE C8



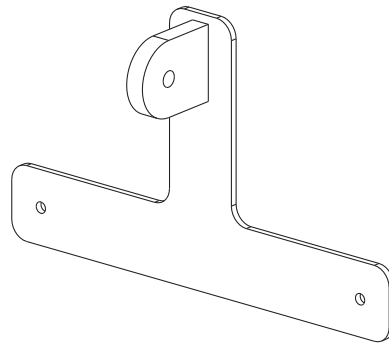
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REAR WINDOW
BRACE C8



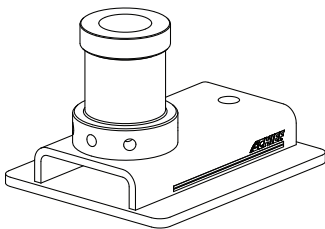
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FRONT FLOOR
EXT. C8



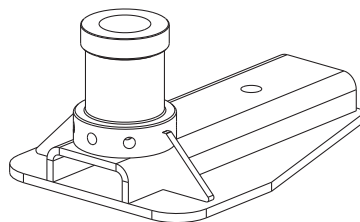
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ROCKER
INNER C8



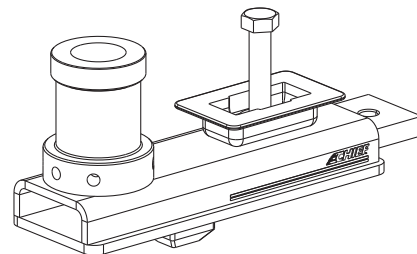
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FLAT BASE



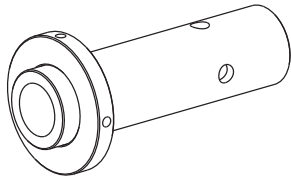
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STRUCTURAL HOLDING
BASE



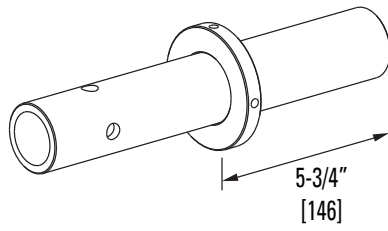
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NARROW STRUCTURAL
HOLDING BASE ASSY



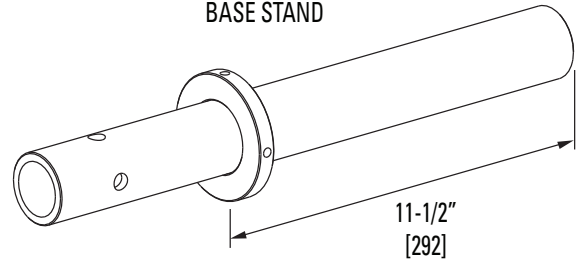
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SHORT TUBE
BASE STAND



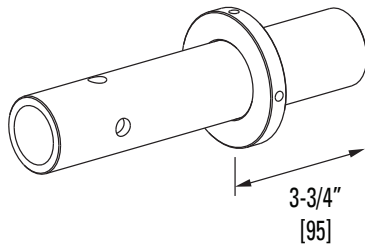
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TALL TUBE
BASE STAND



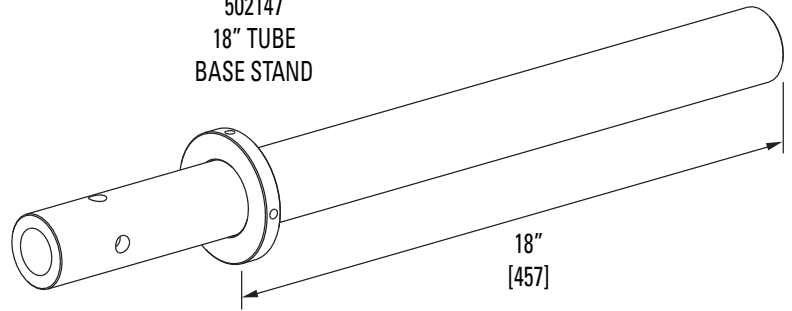
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11-1/2" TUBE
BASE STAND



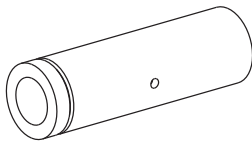
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3-3/4" TUBE
BASE STAND



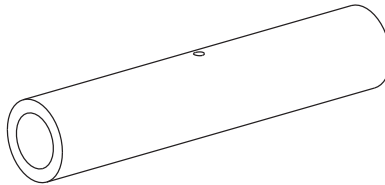
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18" TUBE
BASE STAND



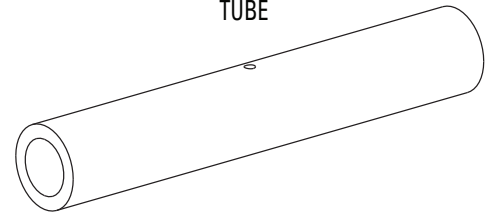
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TURN BUCKLE
CENTER TUBE



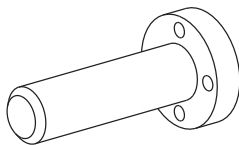
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10" EXTENSION
TUBE



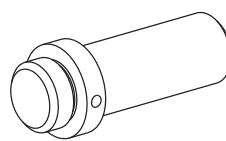
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12" EXTENSION
TUBE



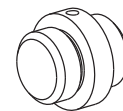
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ADAPTER HEIGHT
SCREW



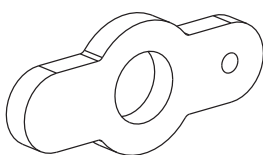
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LOWER ADAPTER
SCREW



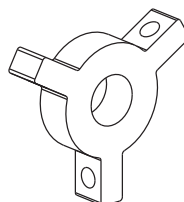
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ADAPTER
EXTENSION



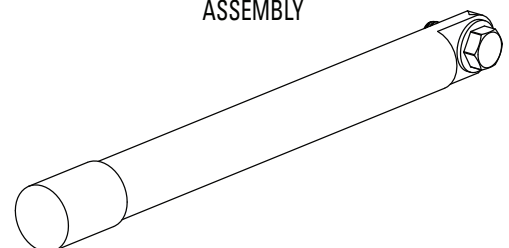
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RIGHT HAND
WING NUT



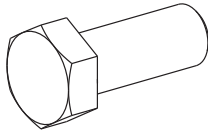
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RIGGING NUT



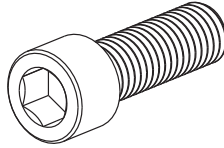
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OVERHEAD ARM
ASSEMBLY



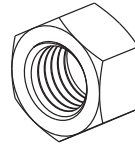
41684
M12-1.75 x 30 HHCS



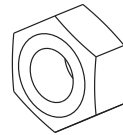
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M12-1.75 x 35 SHCS



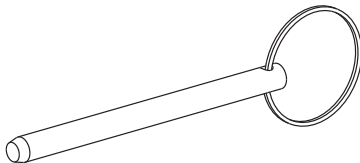
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M10 x 1.5 HEX NUT



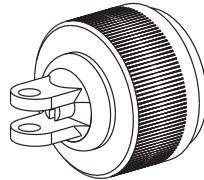
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M8 NUT



502058
RELEASE PIN

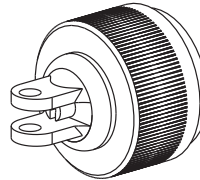


780102
MAGNETIC BOLT
ATTACHMENT 14mm



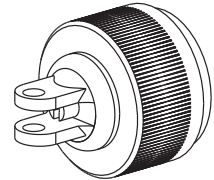
USE W/ M10 SHCS

780104
MAGNETIC BOLT
ATTACHMENT 16mm



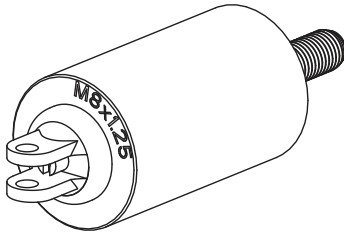
USE W/ M12 SHCS

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MAGNETIC HOLE
ATTACHMENT 10mm

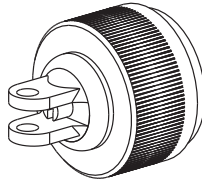


USE W/ M12 SHCS

CK110083
THREAD-IN TARGET x 2" Lg.
M8 x 1.25

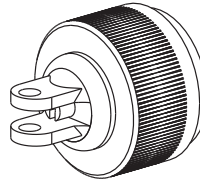


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MAGNETIC BOLT
ATTACHMENT 12mm



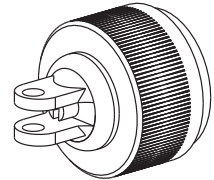
USE W/ M8 SHCS

CK110091
MAGNETIC BOLT
ATTACHMENT 18.5mm



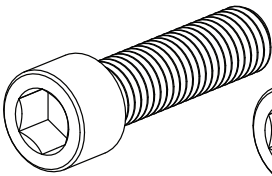
USE W/ M14 SHCS

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MAGNETIC HOLE
ATTACHMENT 12mm

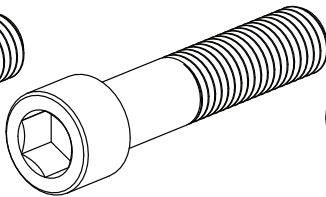


USE W/ M14 SHCS

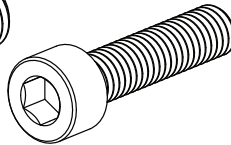
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M14-2.0 x 50 SHCS



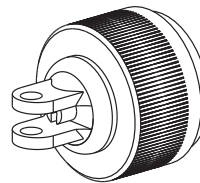
CK130225
M14-2.0 x 65 SHCS



CK130058
M6-1.0 x 25 SHCS

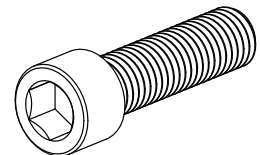


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MAGNETIC HOLE
ATTACHMENT 8mm

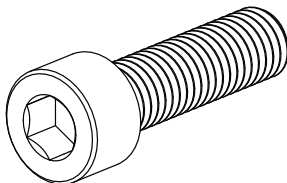


USE W/ M10 SHCS

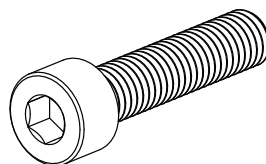
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M12-1.75 x 50 SHCS



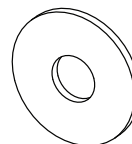
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M10-1.5 x 35 SHCS



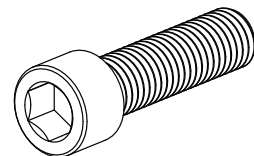
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M8-1.25 x 35 SHCS



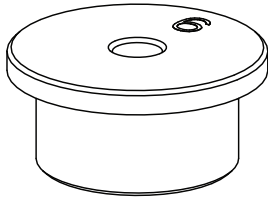
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M10 x 30 O.D.
FLAT WASHER



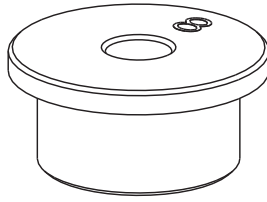
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M12-1.75 x 45 SHCS



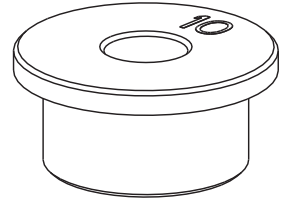
502165
PILOT BUSHING
6mm



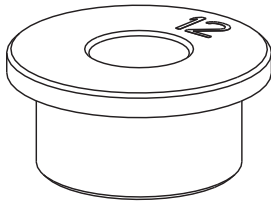
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PILOT BUSHING
8mm



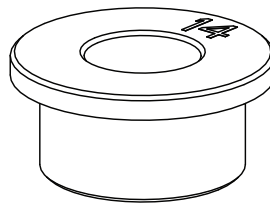
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PILOT BUSHING
10mm



502028
PILOT BUSHING
12mm



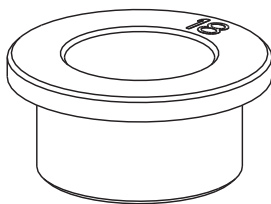
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PILOT BUSHING
14mm



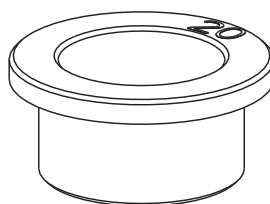
502030
PILOT BUSHING
16mm



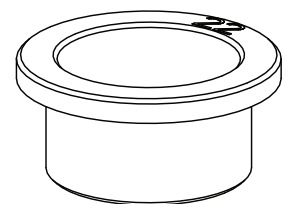
502035
PILOT BUSHING
18mm



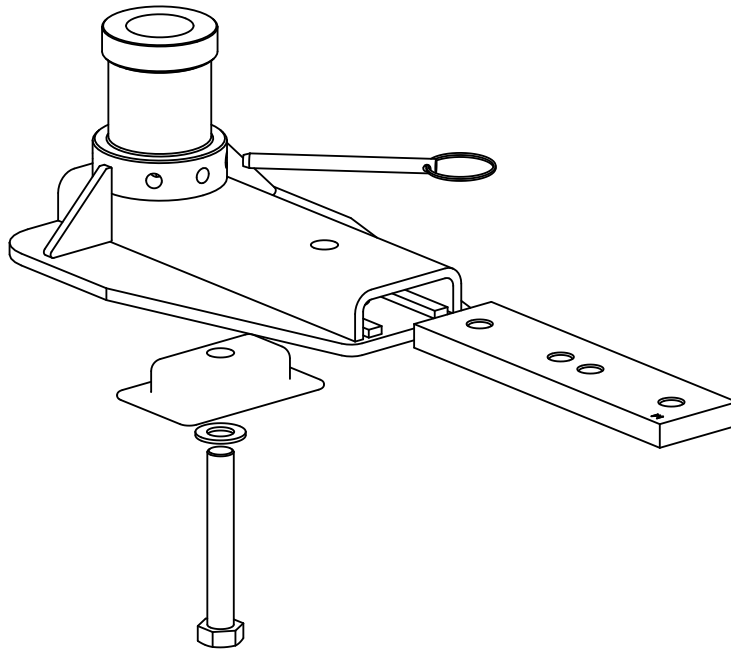
502036
PILOT BUSHING
20mm



502037
PILOT BUSHING
22mm



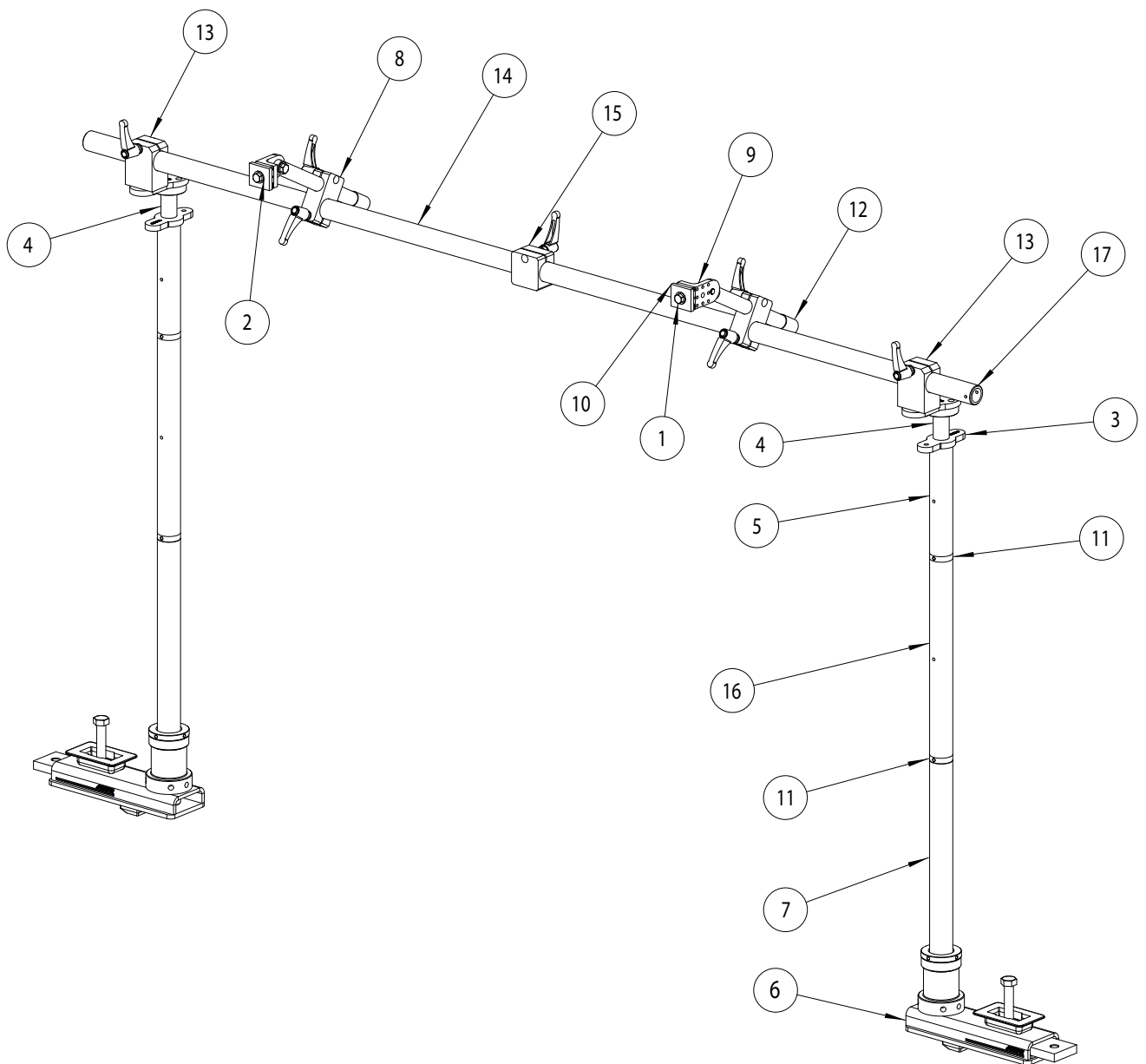
Once the proper configuration has been determined, assemble the required Structural Holding components on the base stand. The base stand should be loosely secured to the frame machine deck using M20x2.5 hardware and a UAS fastener plate. The M20x2.5 hardware will be fully tightened after the Structural Holding stand is located properly. Once the Structural Holding components are assembled, they can be fully tightened using the included spanner wrenches.



Securing New Part

Secure the replacement part to the Structural Holding stand using the foundation adapter and fixtures. Horizontal adjustment of the part can be made by lightly tapping on the stand base. Once the part is located correctly in both horizontal directions, torque down the stand base using a 30 mm wrench or socket. Vertical adjustment of the parts is achieved by turning the clockwise rotation will raise the stand. The turnbuckle section should turn easily by hand, but there is a provision to use a spanner wrench if necessary. Once the part is at the proper vertical position, tighten the top and bottom wing nuts to lock the turnbuckle center section in place and insert the release pin into one of the three hole positions.

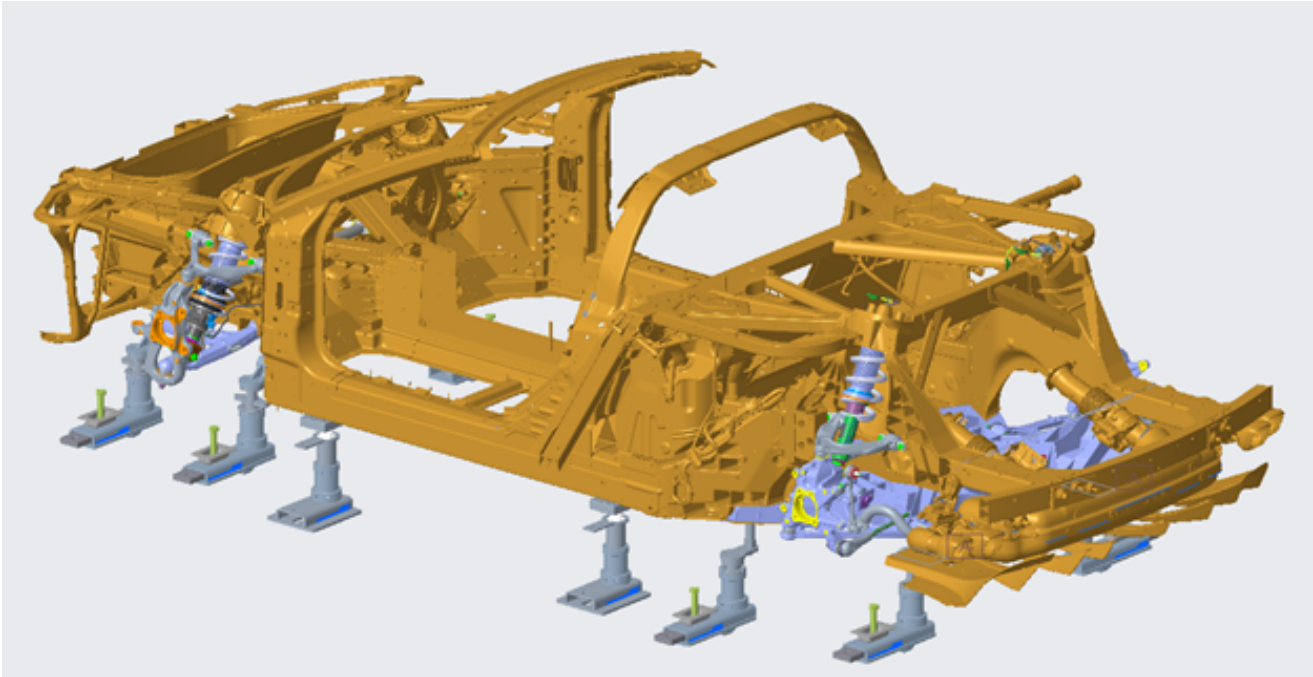
Note: For best results, the two-ear and three-ear wing nuts should be threaded away from the turnbuckle center section when making vertical position adjustments.



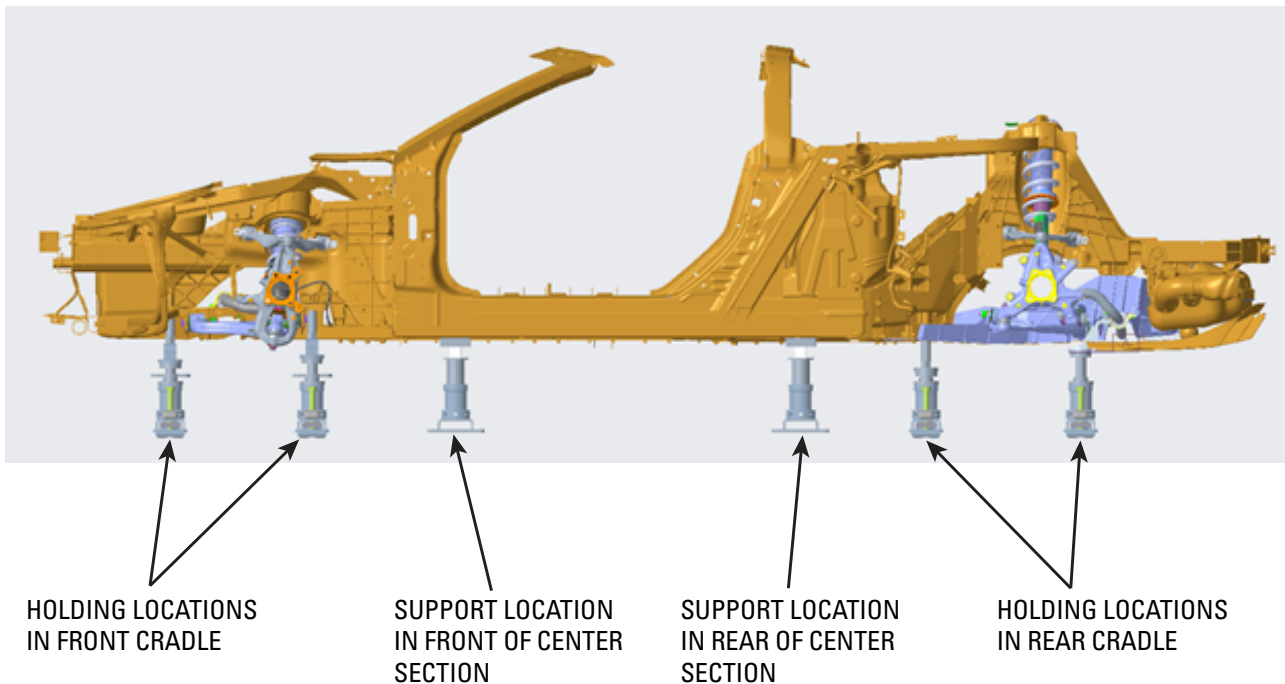
ITEM	QTY	PART NO.	DESCRIPTION
1	2	010625	BOLT, 1/2-13 X 1-1/4, HHCS, GRADE 8, PLATED
2	2	019095	WASHER, 1/2" ASTM F436
3	2	502015	WING NUT, PARTS HOLDING - RH
4	2	502039	STRUCTURAL HOLDING ADAPTER ASSEMBLY
5	2	502061	10" EXTENSION TUBE, PARTS HOLDING
6	2	502128	NARROW STRUCTURAL HOLDING BASE ASSEMBLY
7	2	502147	18" TUBE BASE STAND ASS'Y.
8	2	638068	OVERHEAD BOOM CLAMP ASSY
9	2	638073	WRIST BLOCK
10	2	638133	JAW CLAMP ASSEMBLY, PARTS HOLDING
11	4	502032N	ADAPTER EXTENSION TUBE PARTS HOLDING
12	2	CK110090	OVERHEAD ARM ASSEMBLY
13	2	CK110231	BOOM CLAMP, END -ASSM-
14	1	CK110243	OVERHEAD BEAM SHORT ASSEMBLY
15	1	CK110244	OVERHEAD CENTER BOOM CLAMP ASSY
16	2	CK120413N	18" EXTENSION TUBE NITRIDE
17	1	CK120422	OVERHEAD BEAM, PARTS HOLDING

C8 Corvette Set-up

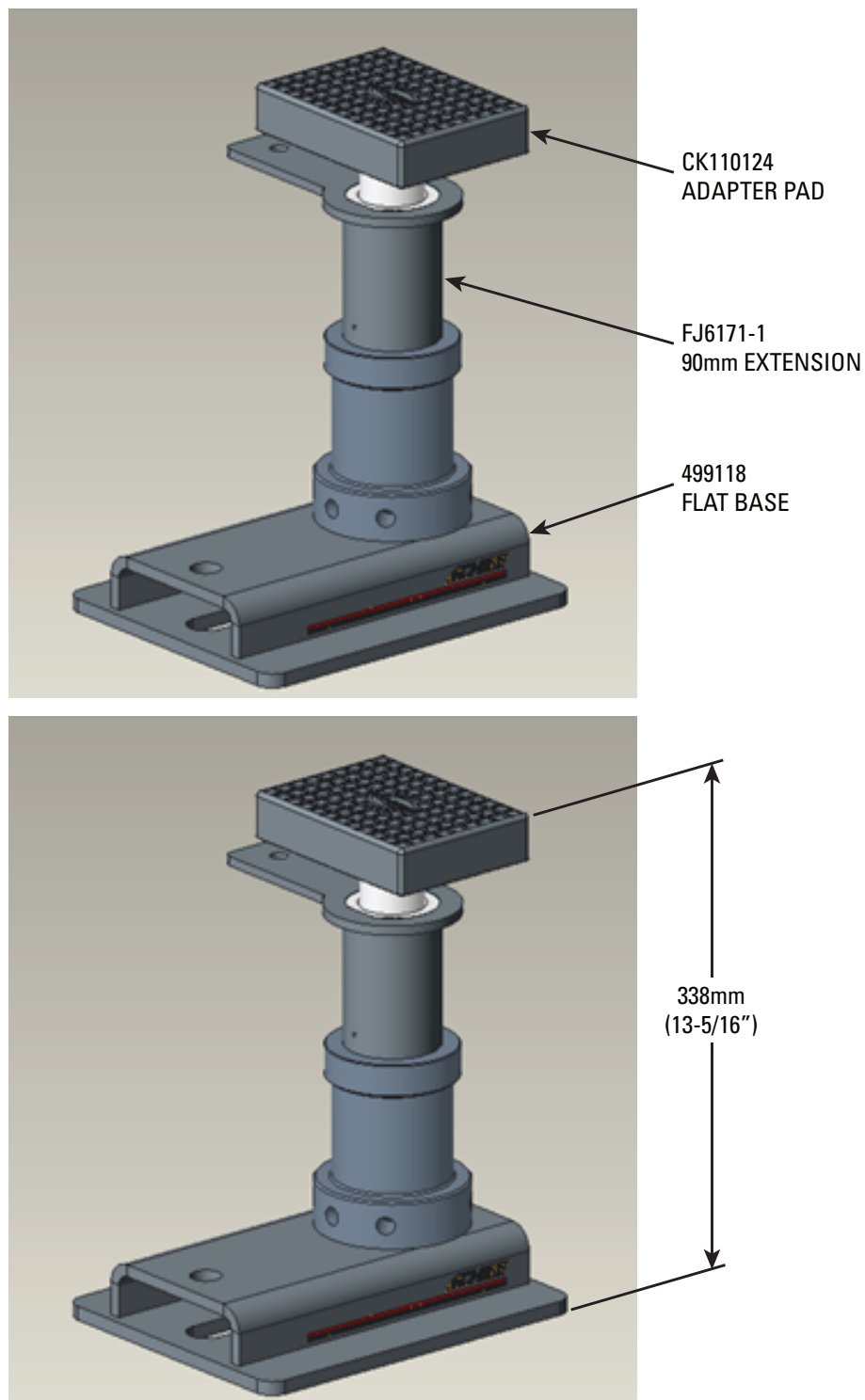
Positioning of the vehicle on the deck is very important, and the vehicle should be carefully located on the frame machine based on the type, severity and location of the damage. Once positioned, refer to your manual for proper installation and set-up procedures.



1. The initial setup requires four center section locations to be installed. Two in the front of the center section and two in the rear of the center section. Additionally, at least one set of fixtures must be placed on the front and rear rails, for a total of eight point holding for entire vehicle, see example below.



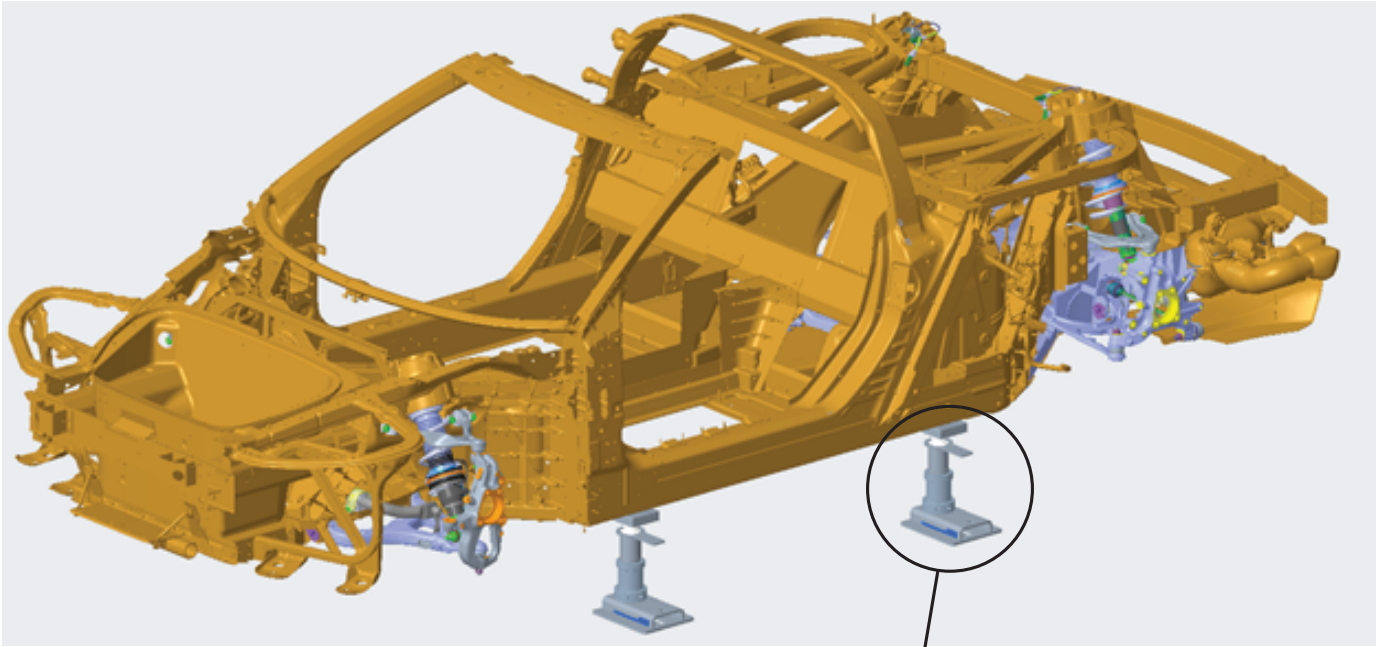
Center Section Base Mounting



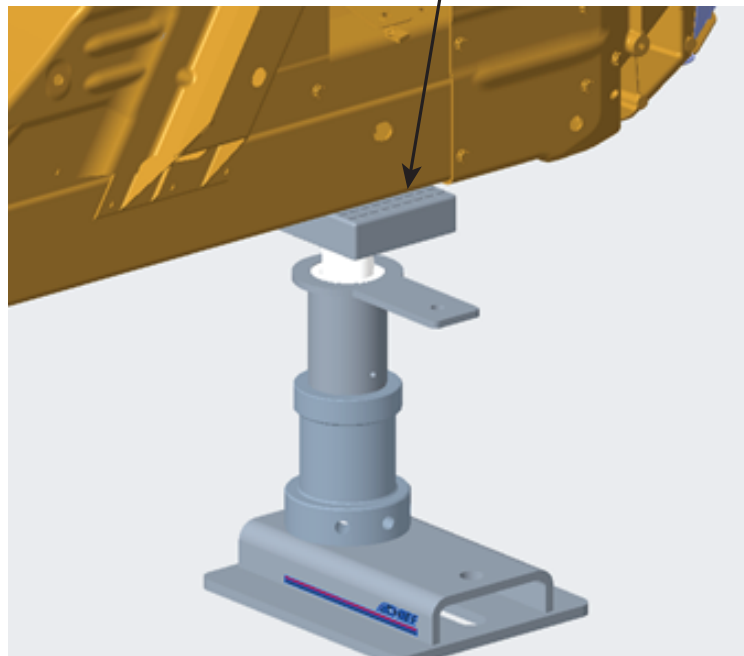
Setting a level datum for Center Section:

1. Assembly Base (499118), 90mm Extension (FJ6171-1), and Adapter Pad (CK110124) .
2. Adjust Adapter Pad height 338mm (13-5/16") to establish level datum.
3. Assembled Base Stand will be placed in each corner of Center Section of vehicle.
4. Final adjustments to raise or lower is achieved by rotating handle.

Center Section Rocker Supports



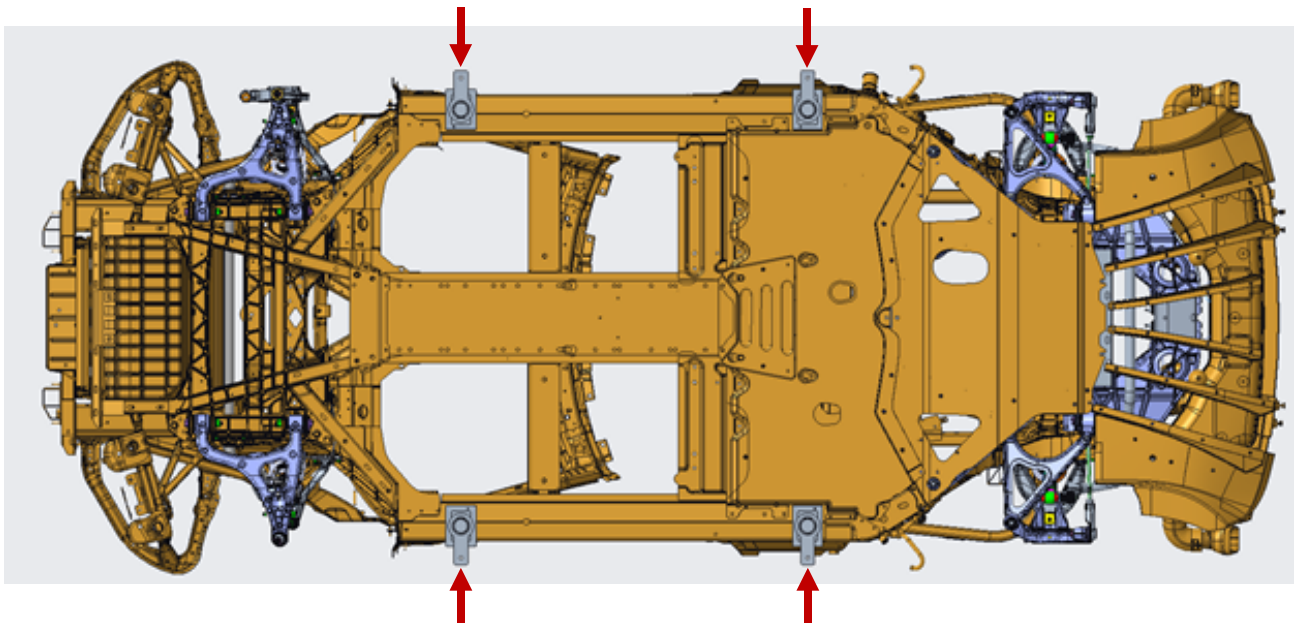
1. Locate four (4) Jacking Points on underside of vehicle.
2. Place Base Stand at each Jacking Point located in center section of vehicle.
3. Confirm Base Stand Assembly is adjusted to 338mm (13-5/16") at the pinch weld to maintain a level datum for placing fixtures.



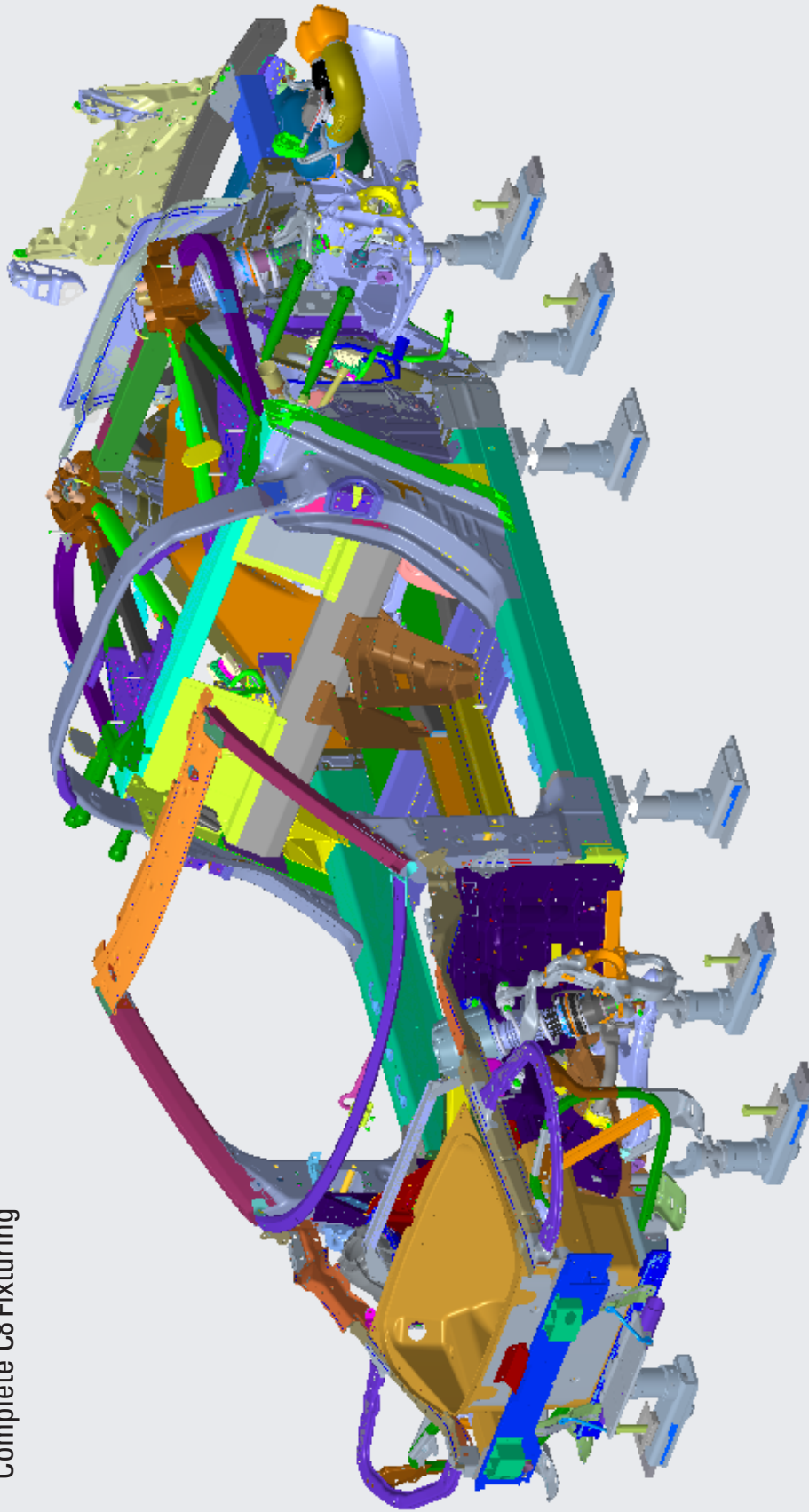
Rocker Support

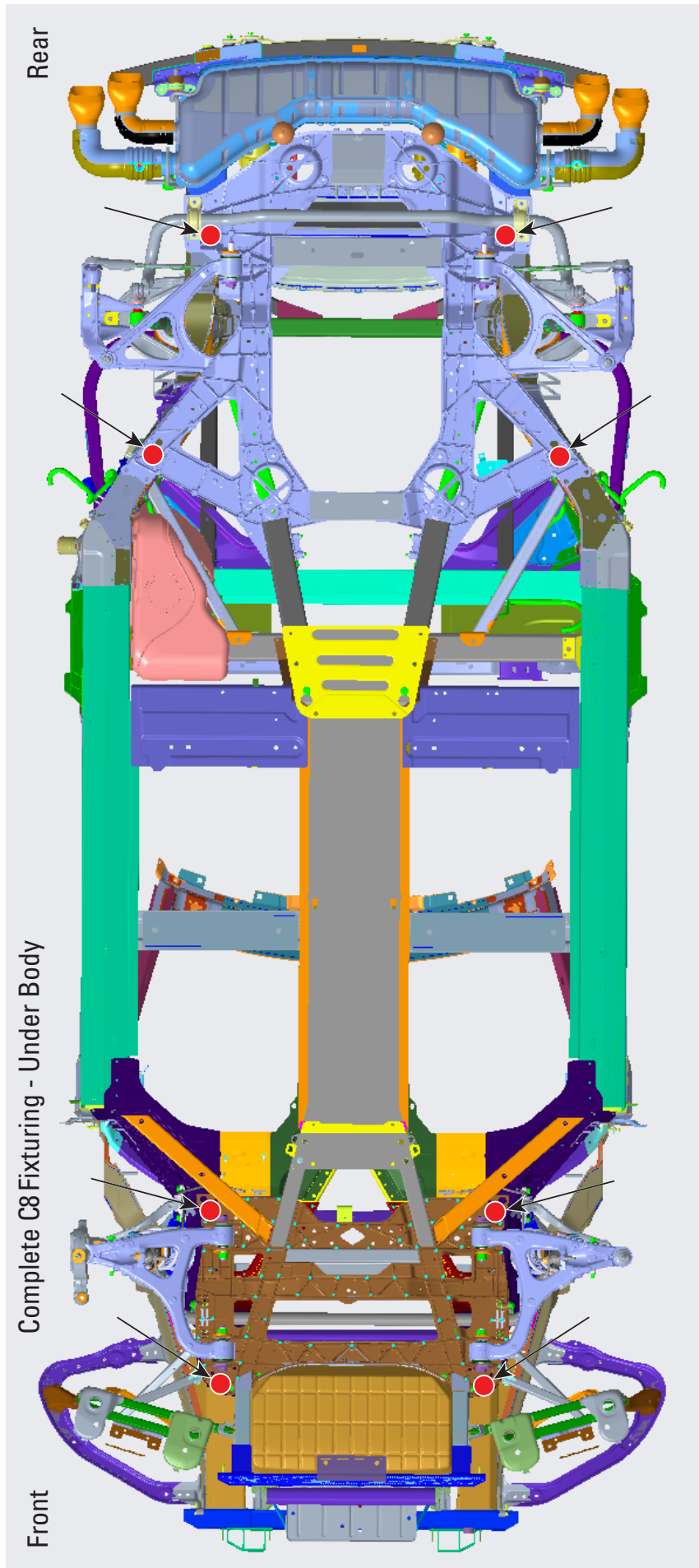
Location Requirements

- Locate supports under the jack pad features (indicated by red arrows).
- After stands are placed in each corner of center section at points shown, lower vehicle onto adapter pads (CK110124) and confirm vehicle is at a level datum.
- Continue to place fixtures as required.

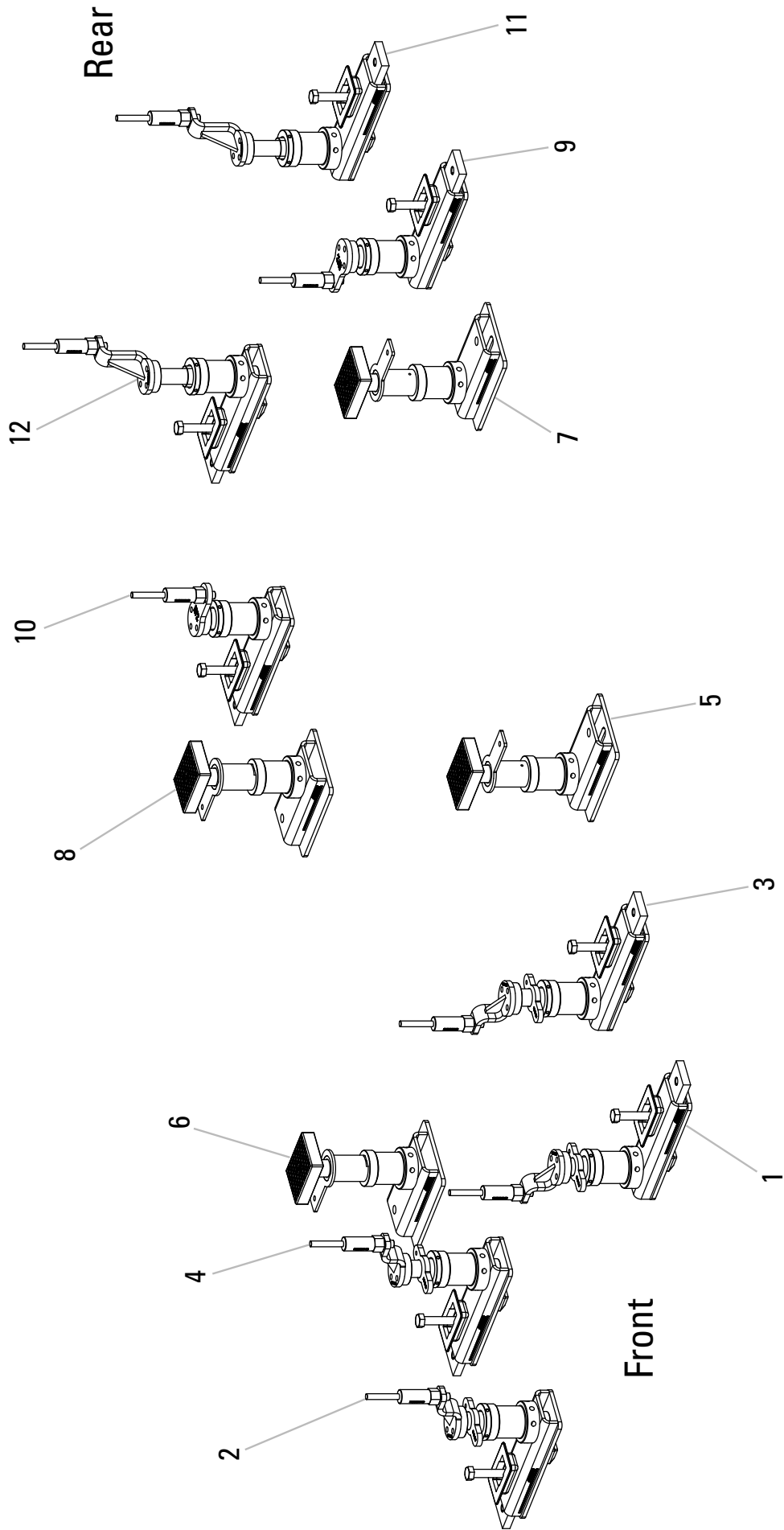


Complete C8 Fixturing

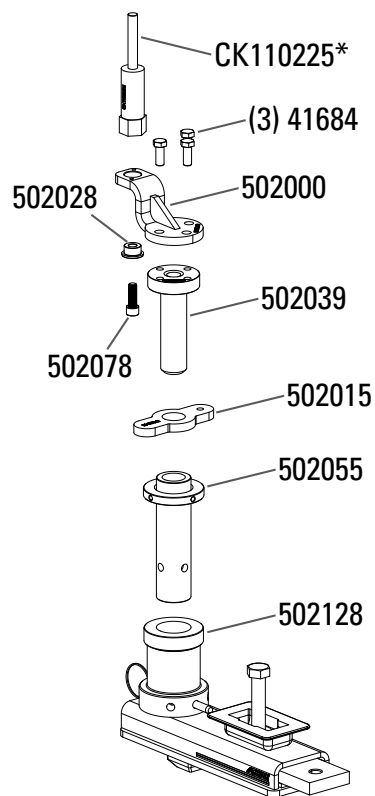




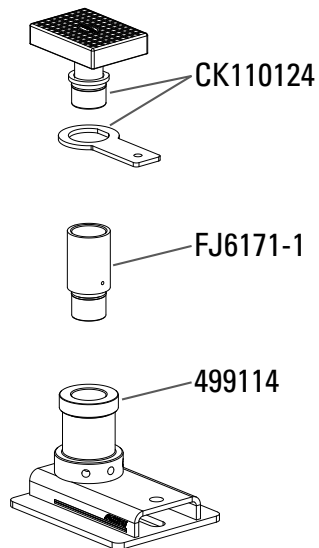
Complete C8 Fixturing Locations - Fixed



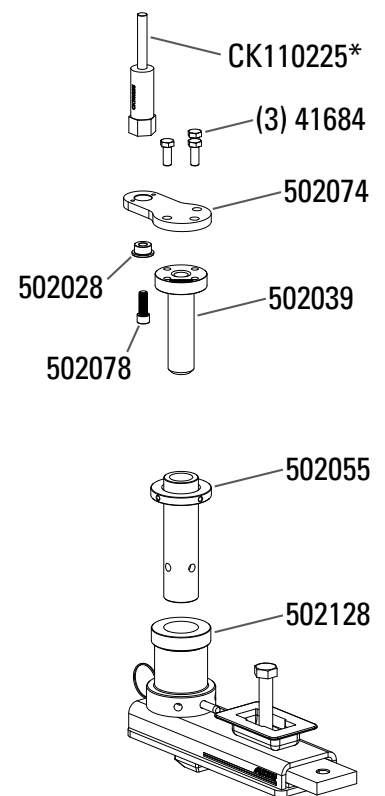
Fixture # 1, 2, 3, 4



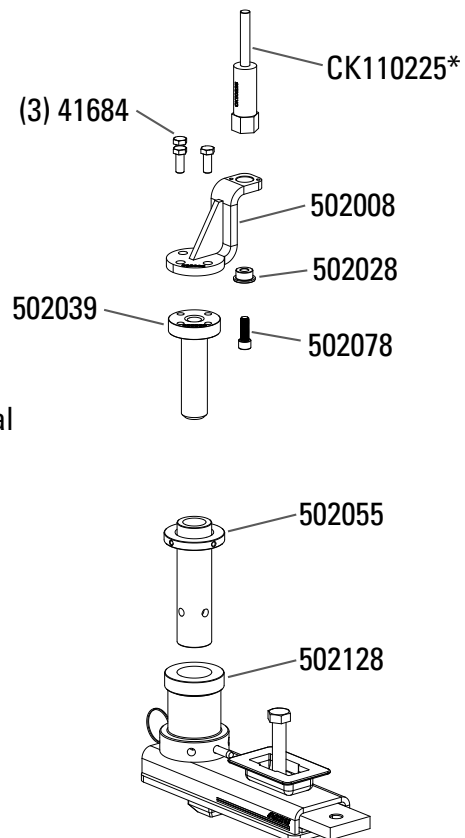
Fixture # 5, 6, 7, 8



Fixture # 9, 10

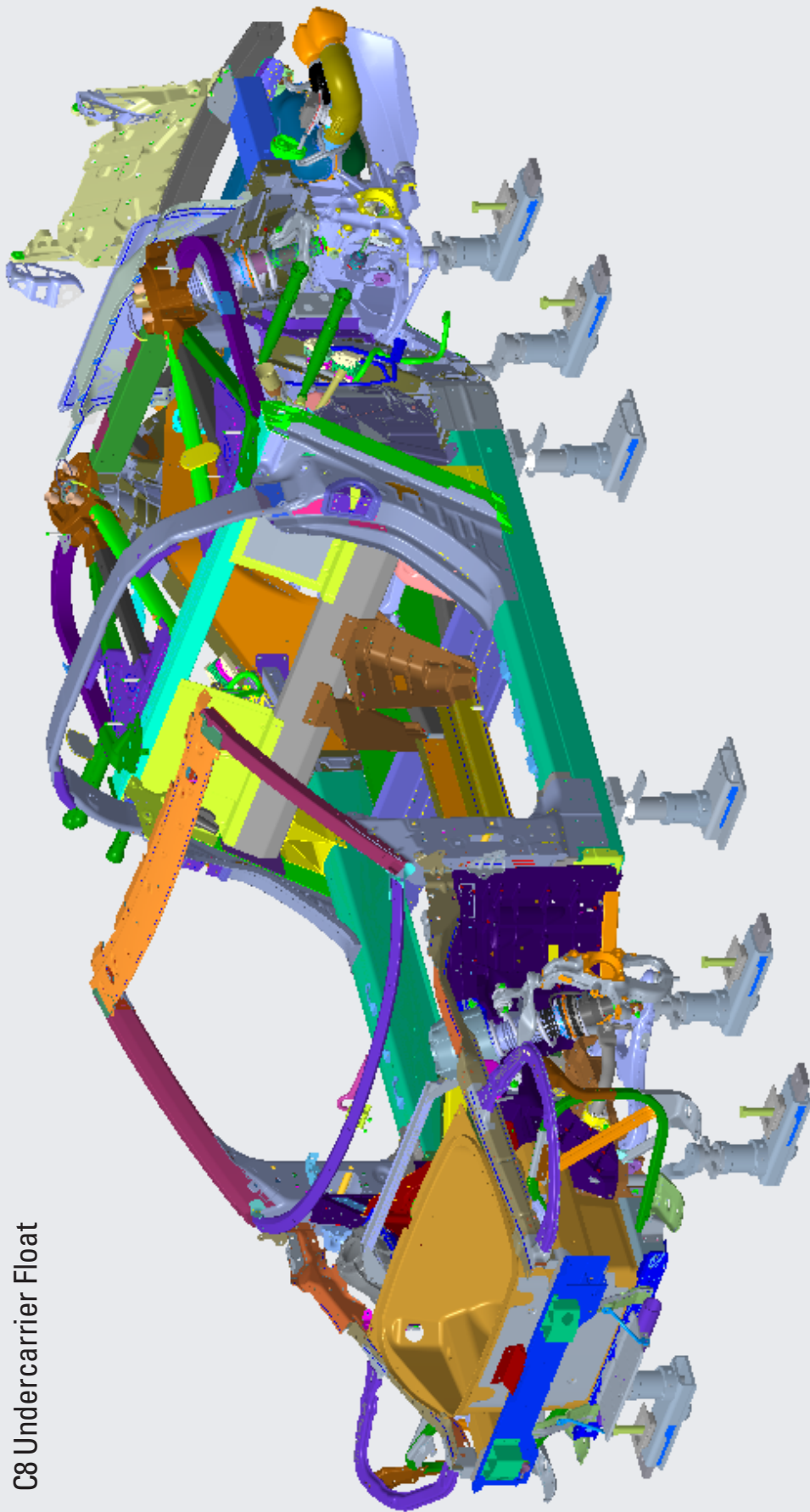


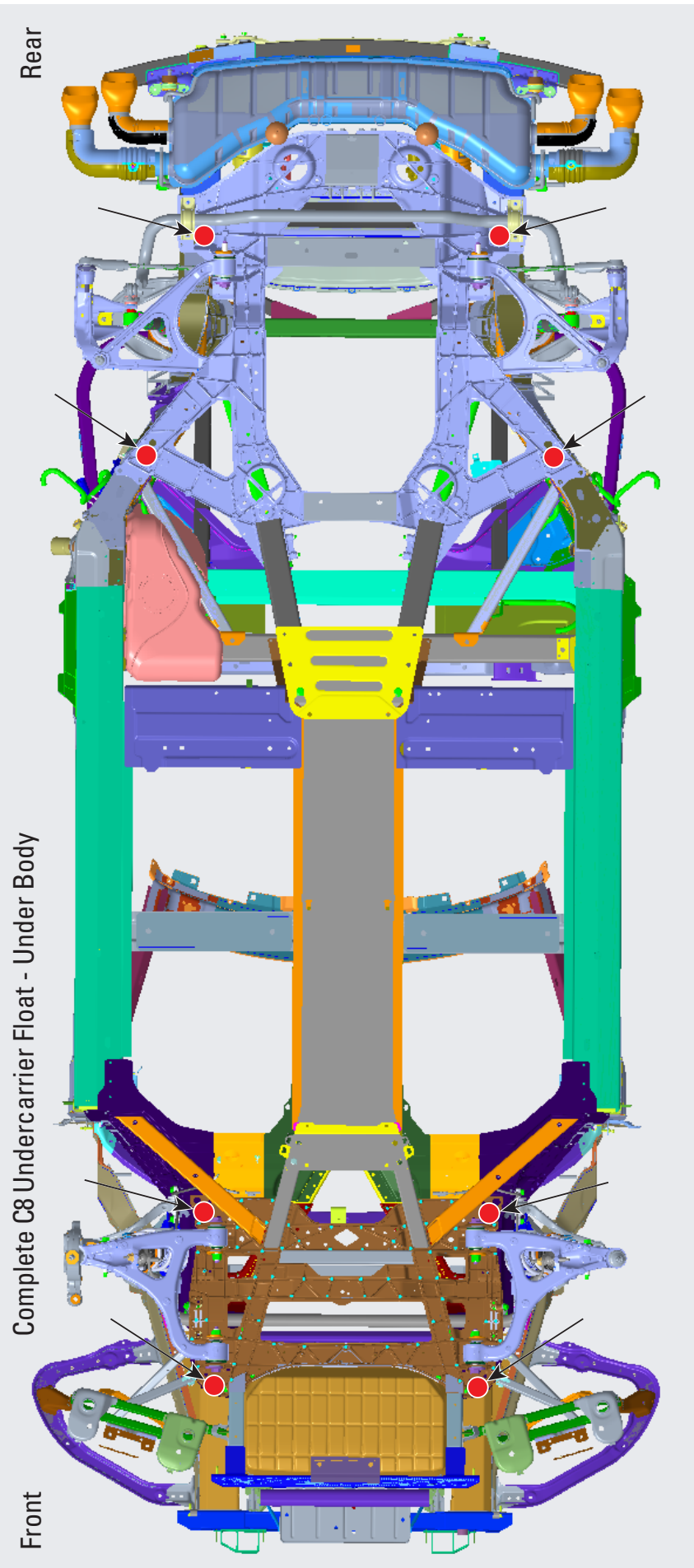
Fixture # 11, 12



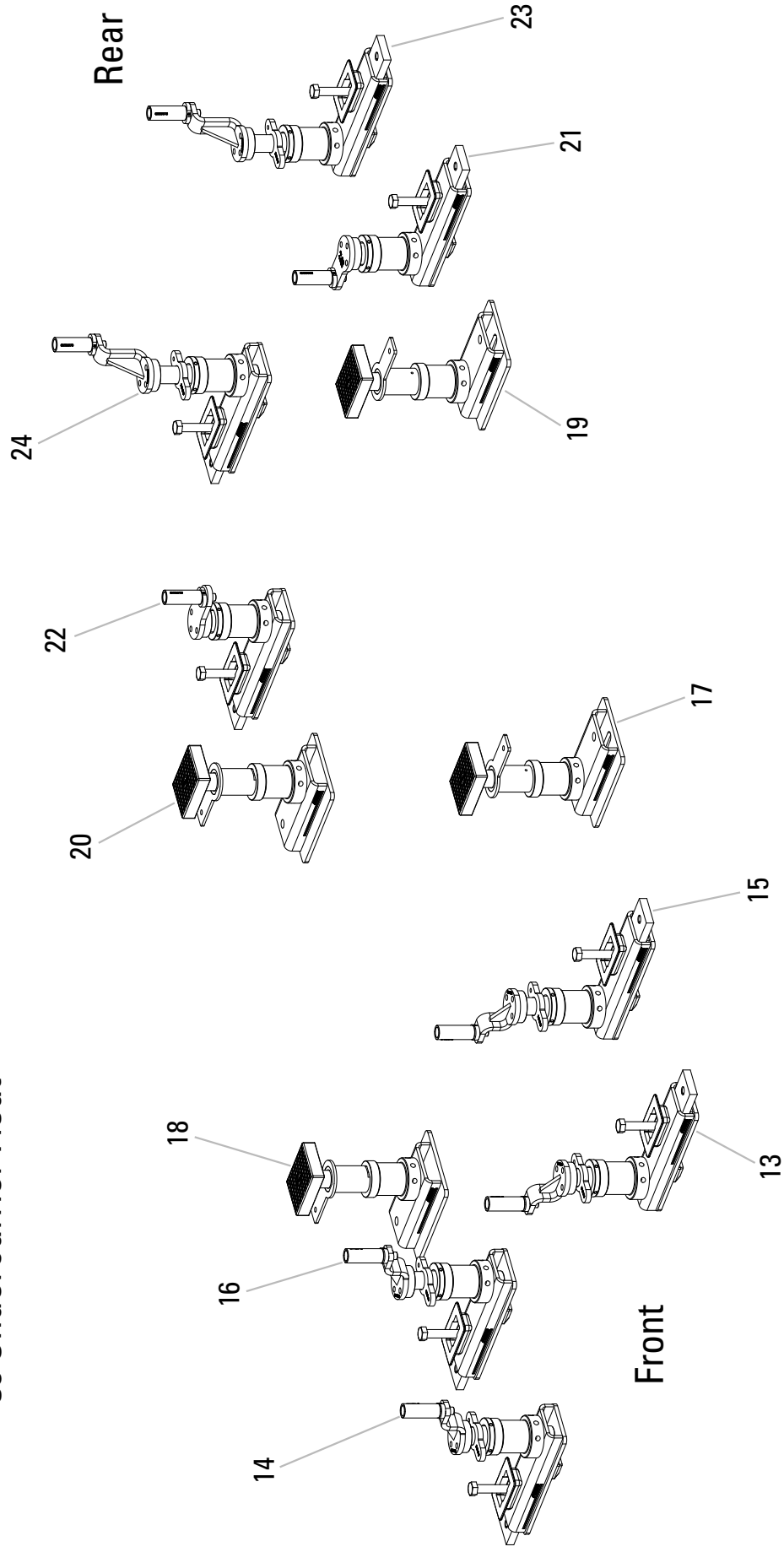
* Consult OEM Repair Manual
For Torque Spec's

C8 Undercarrier Float

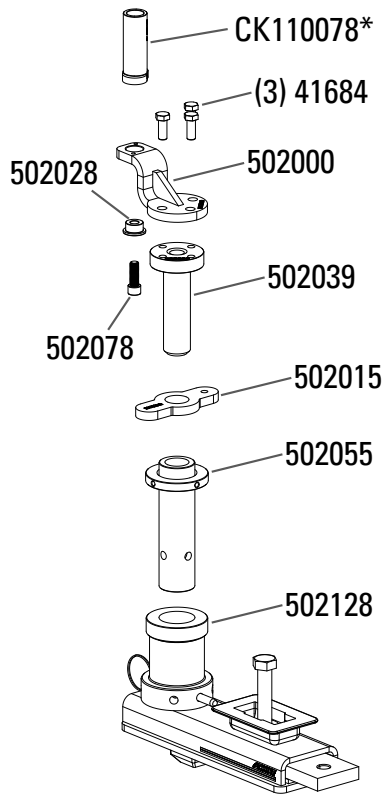




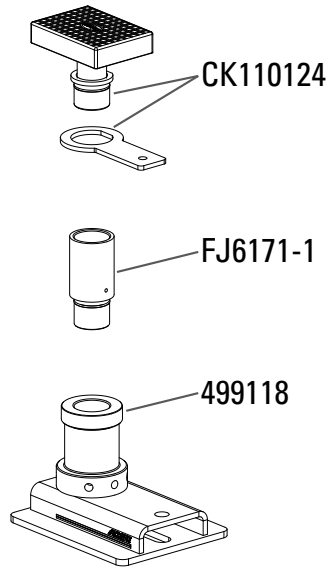
C8 Undercarrier Float



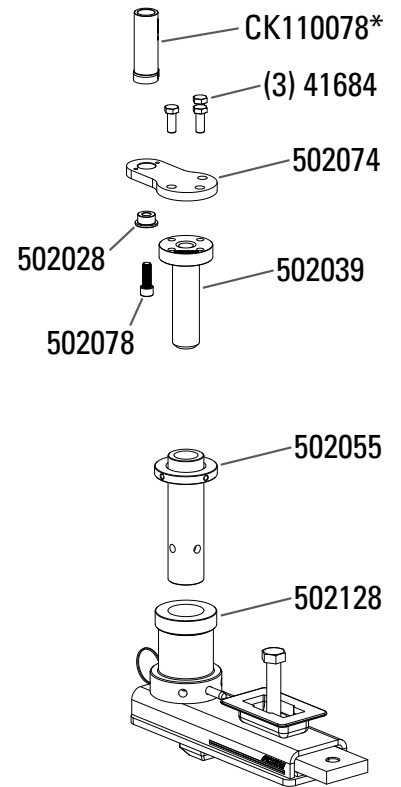
Fixture # 13, 14, 15, 16



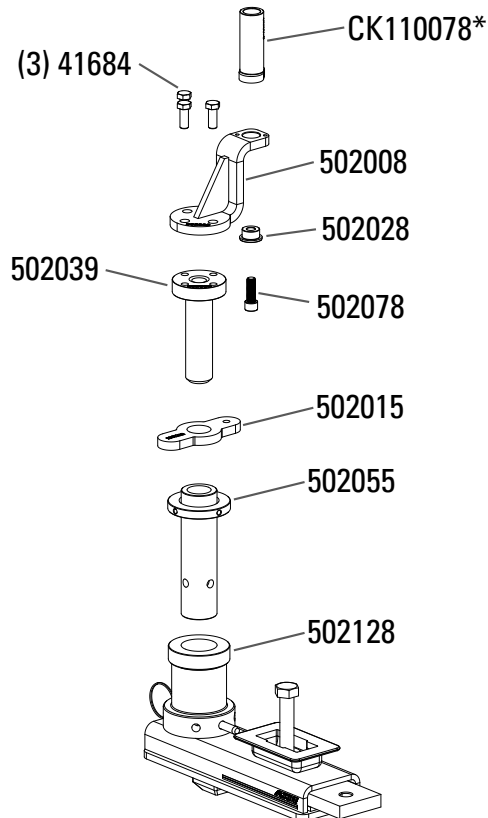
Fixture # 17, 18, 19, 20



Fixture # 21, 22

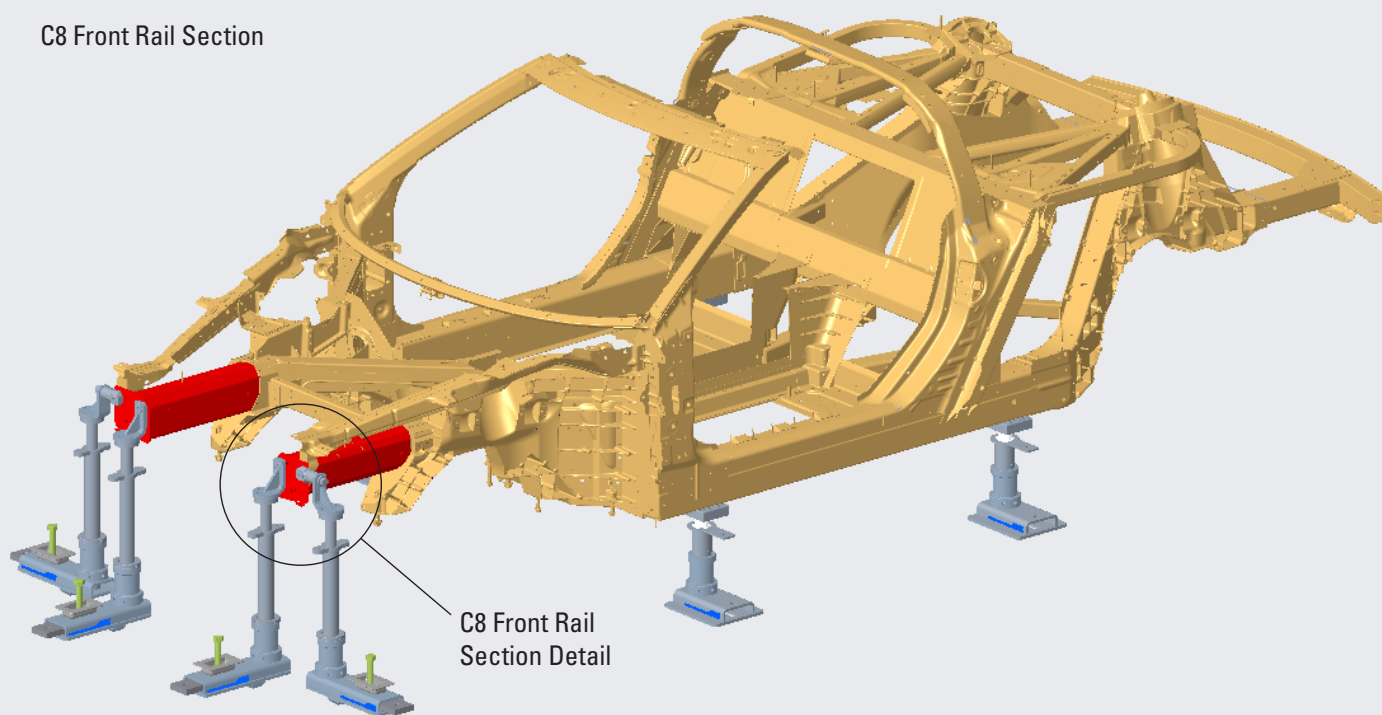


Fixture # 23, 24

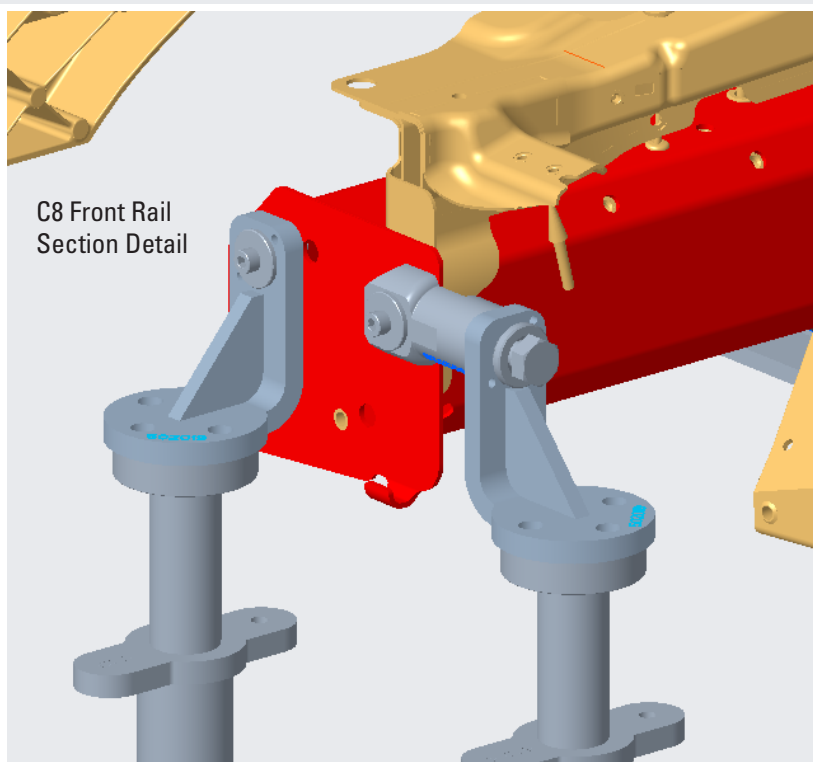


* Not Included
Consult Chief Tech Support
For Details

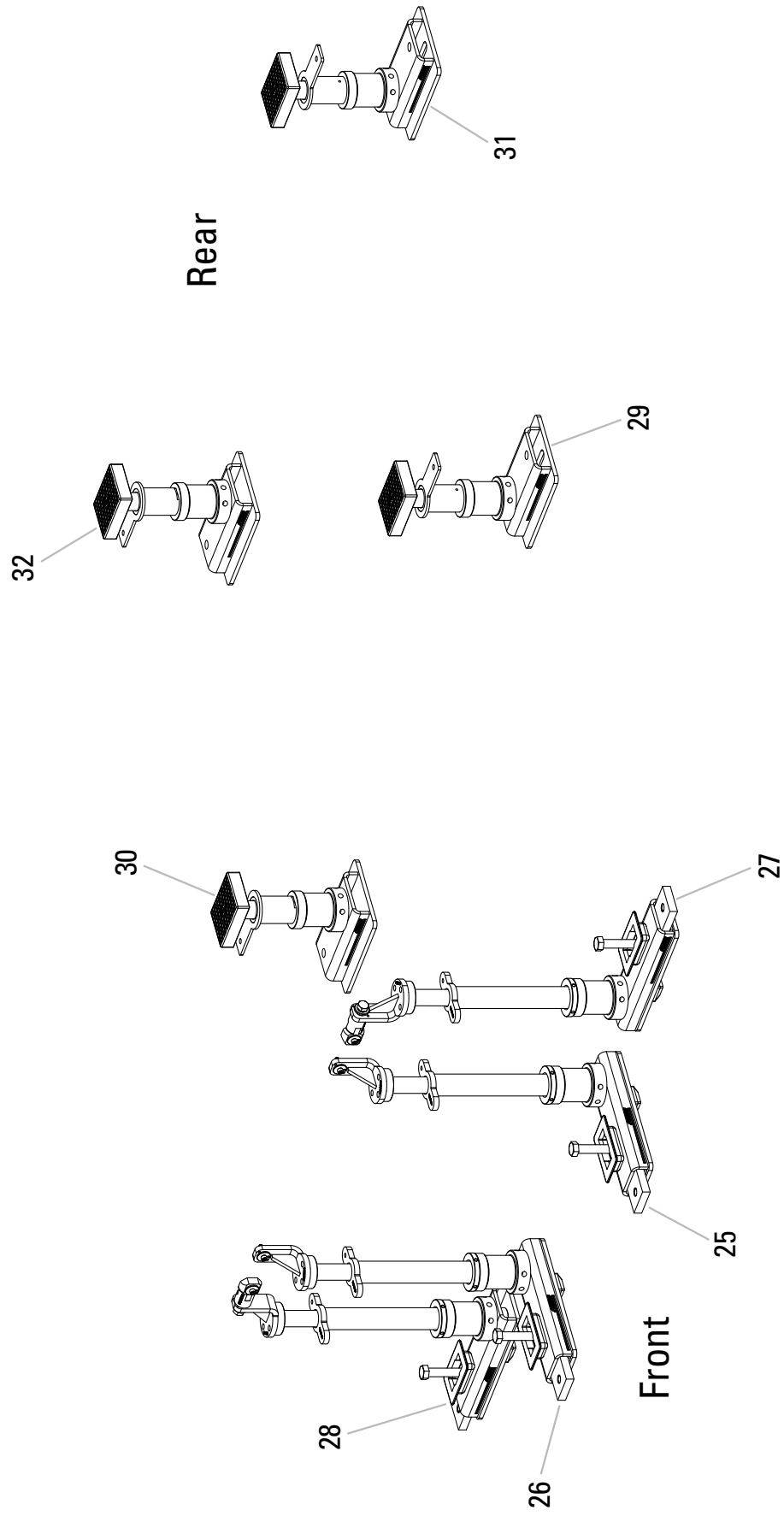
C8 Front Rail Section



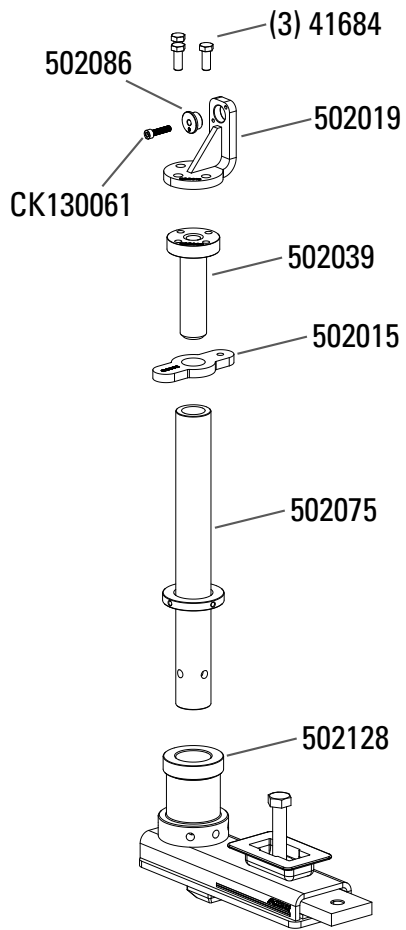
C8 Front Rail
Section Detail



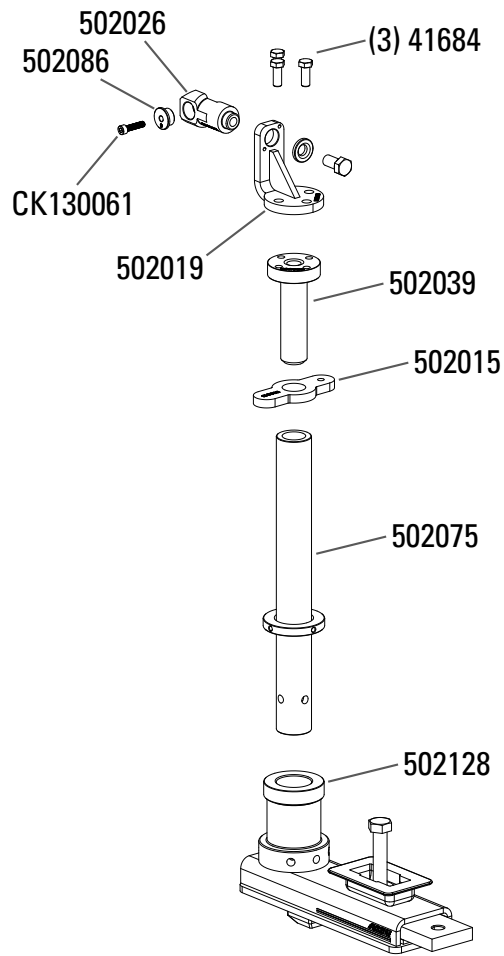
C8 Front Rail Section



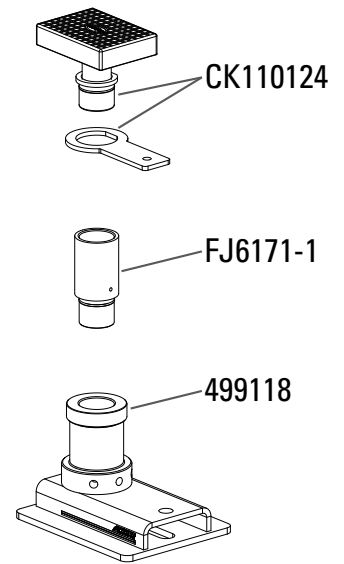
Fixture # 25, 26



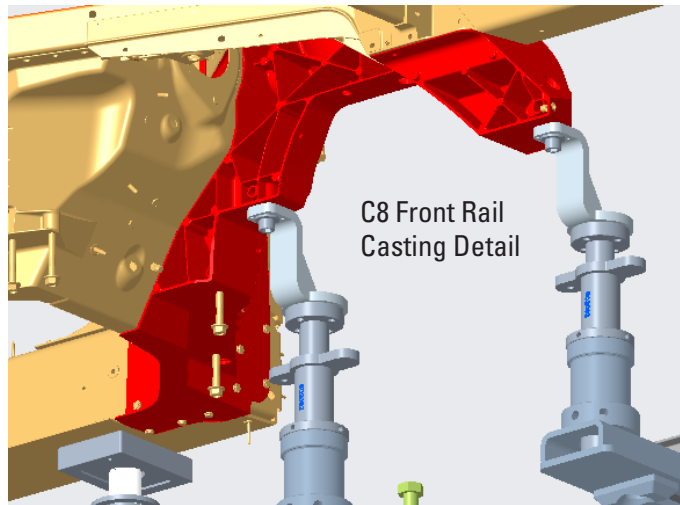
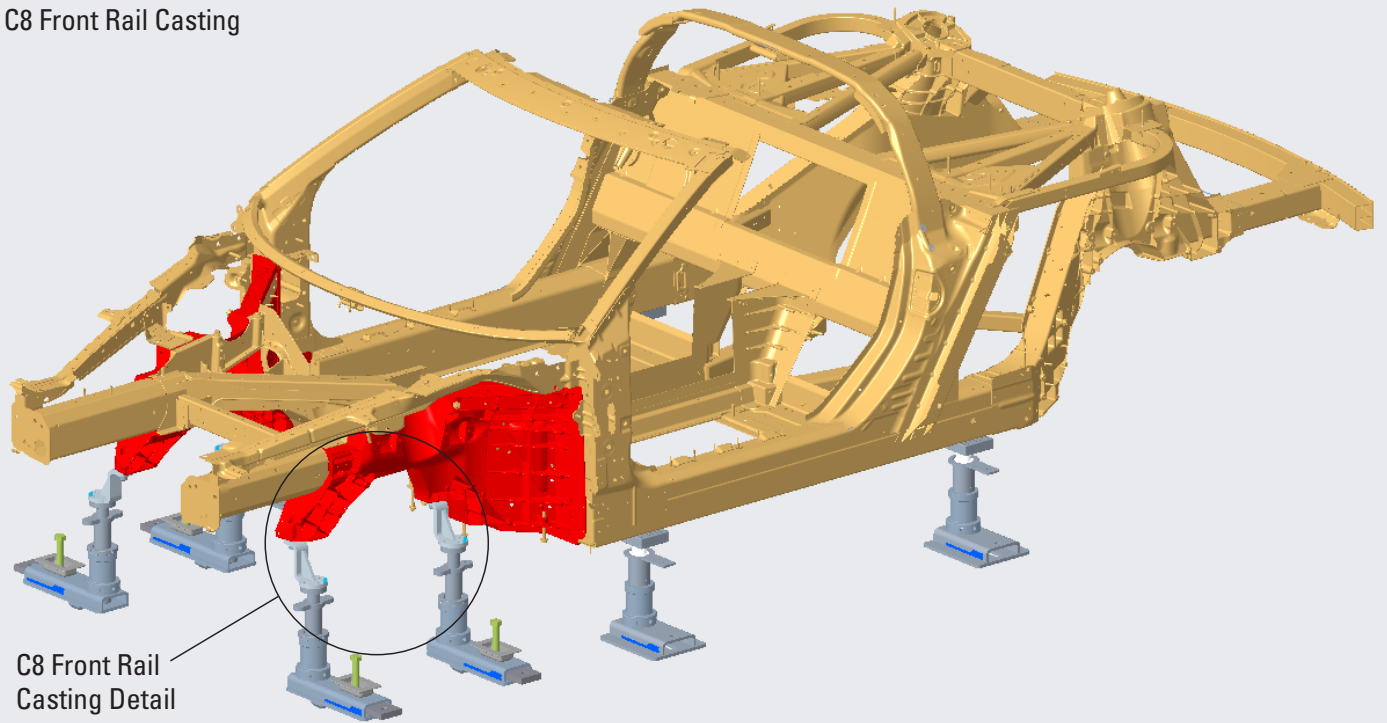
Fixture # 27, 28



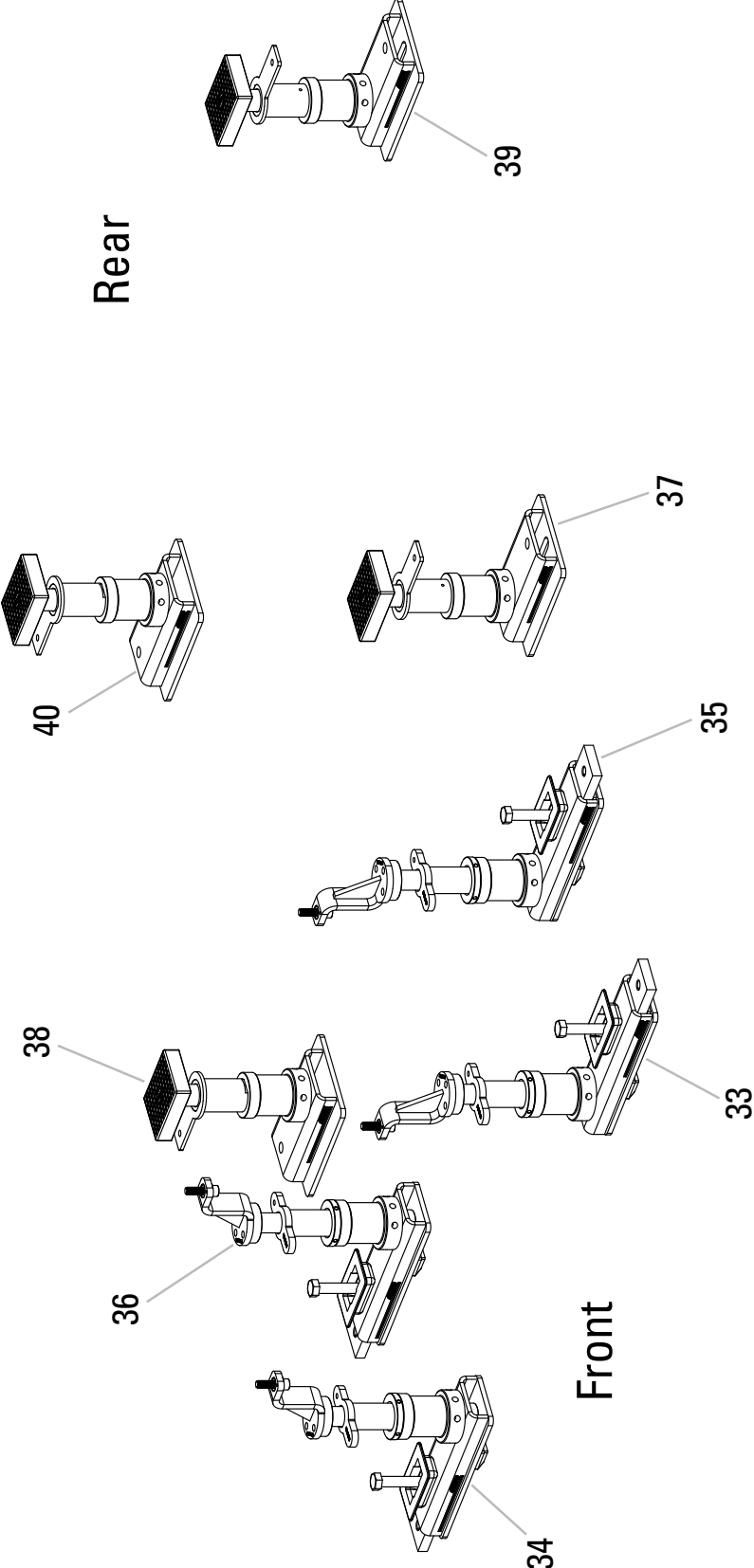
Fixture # 29, 30, 31, 32



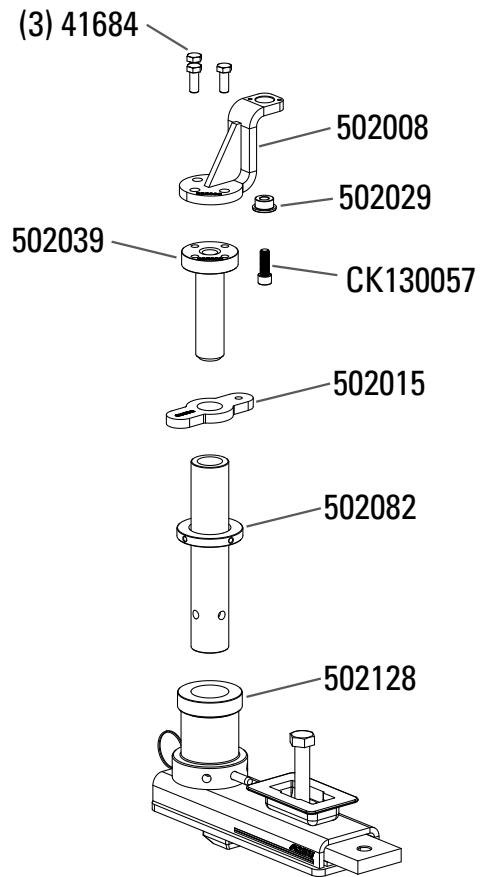
C8 Front Rail Casting



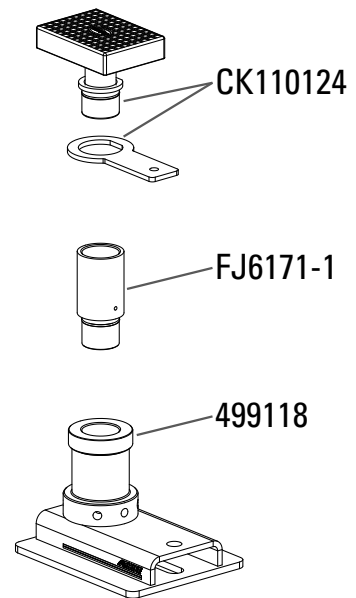
C8 Front Rail Casting



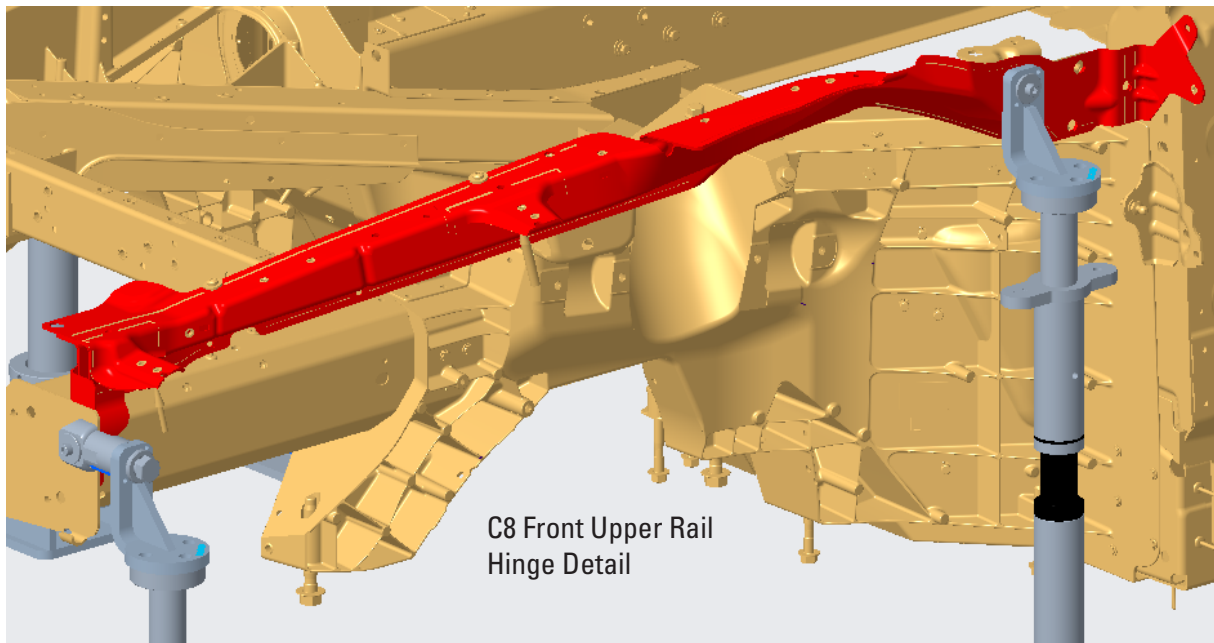
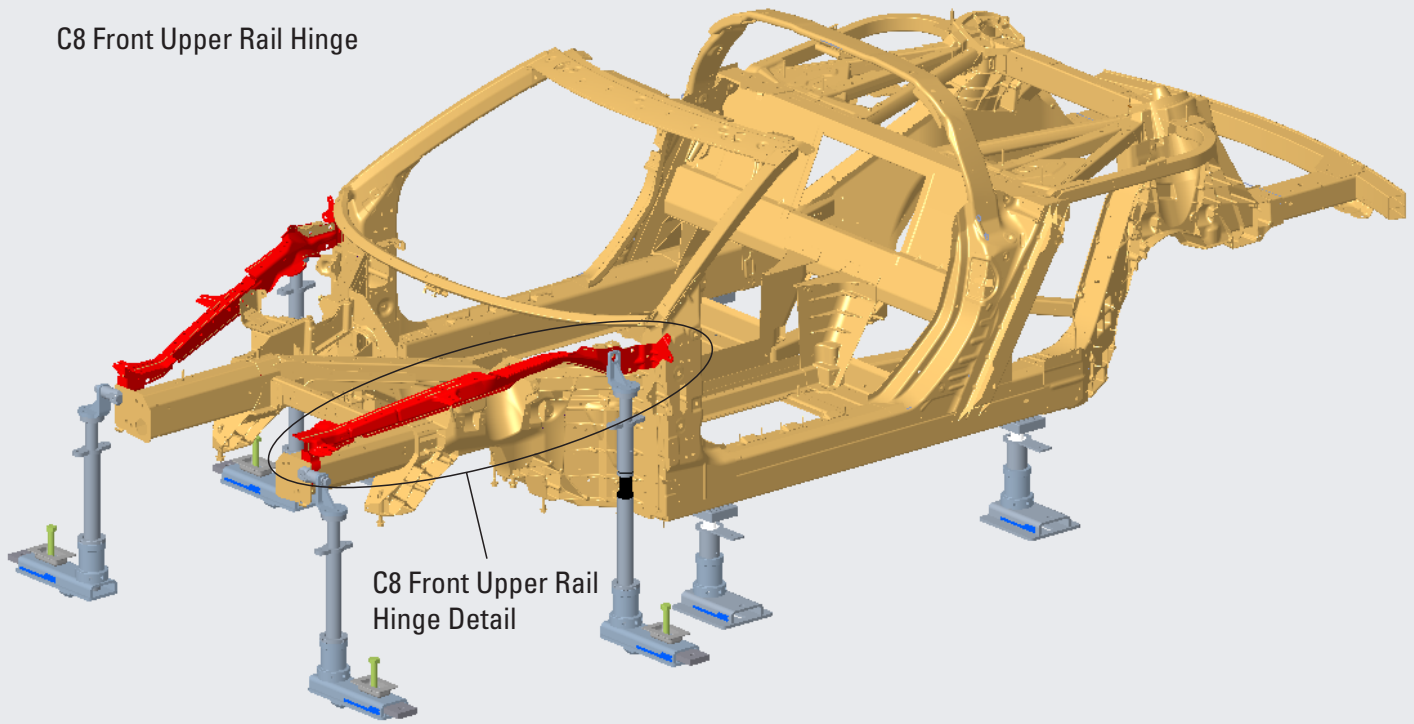
Fixture # 33, 34, 35, 36



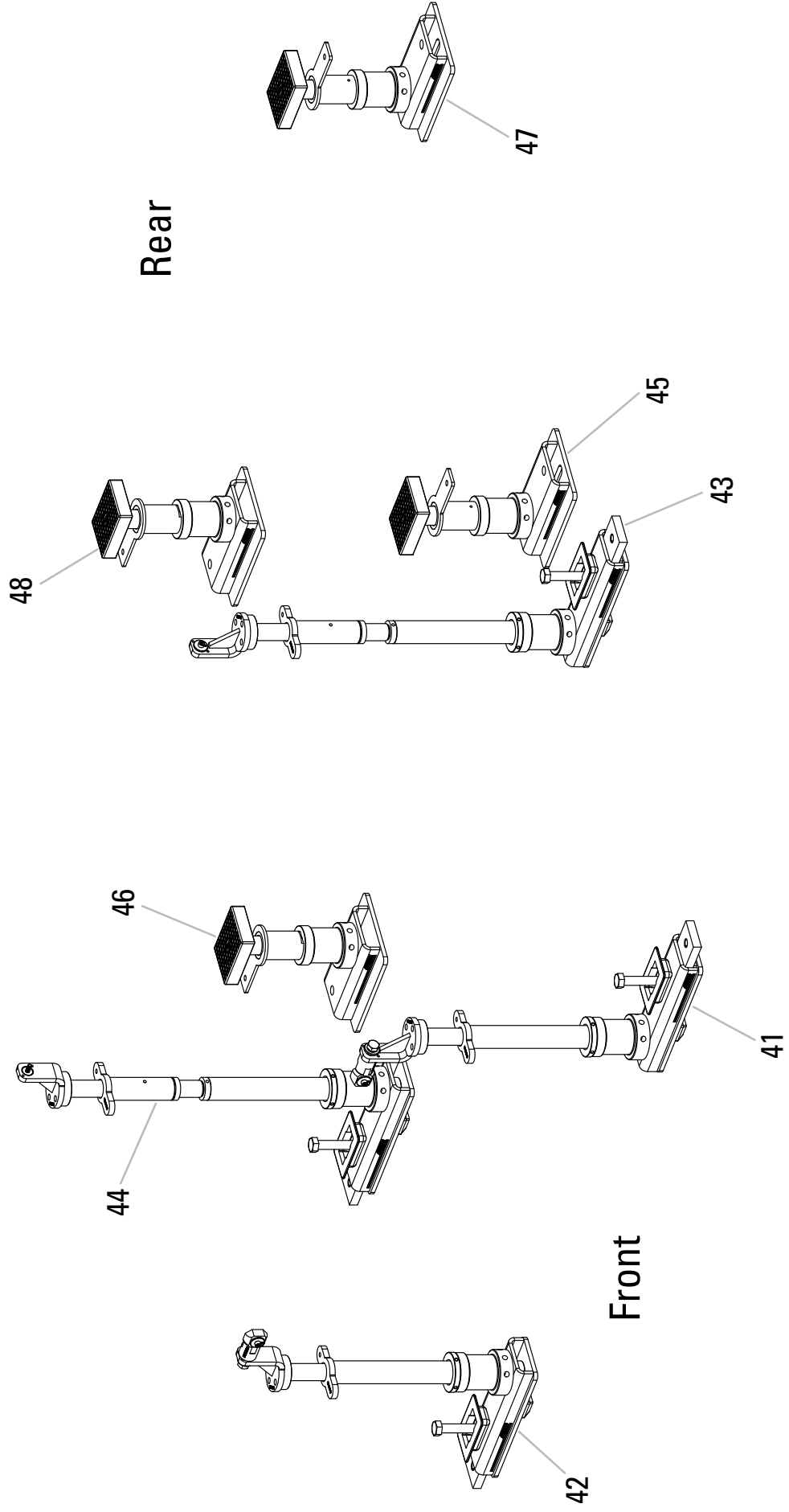
Fixture # 37, 38, 39, 40



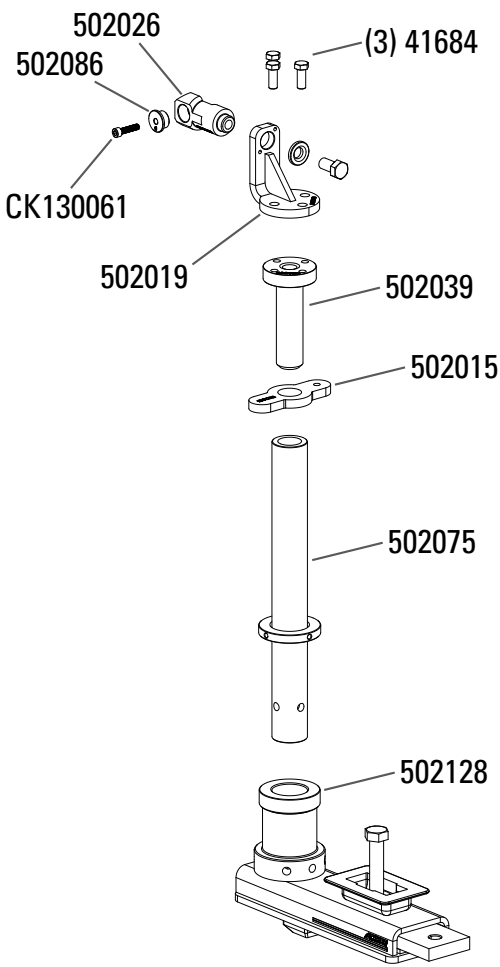
C8 Front Upper Rail Hinge



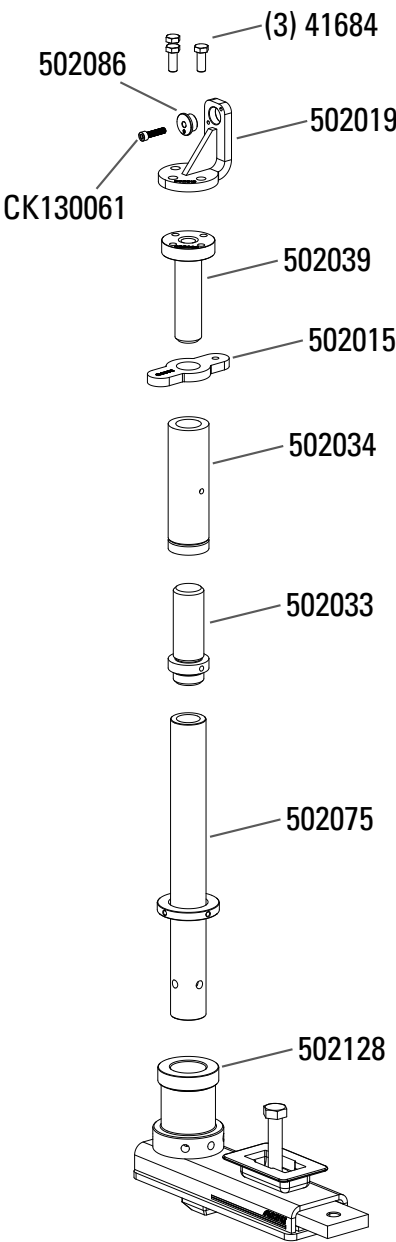
C8 Front Upper Rail Hinge



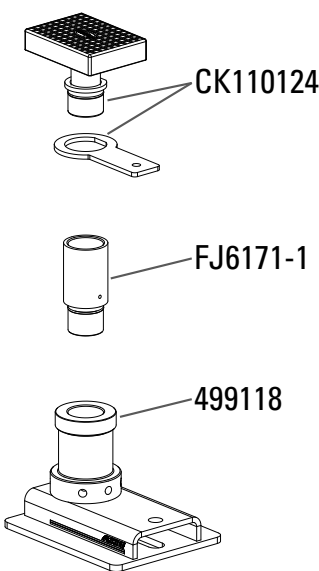
Fixture # 41, 42



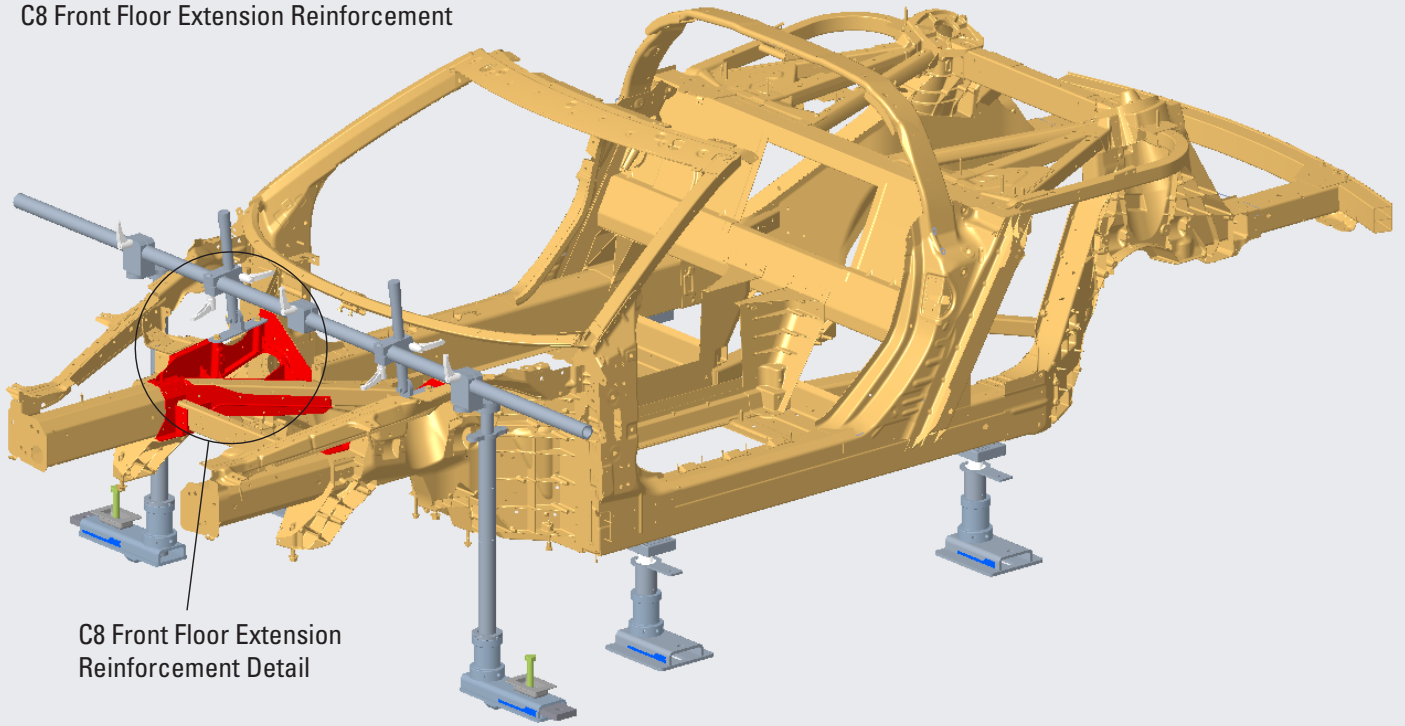
Fixture # 43, 44



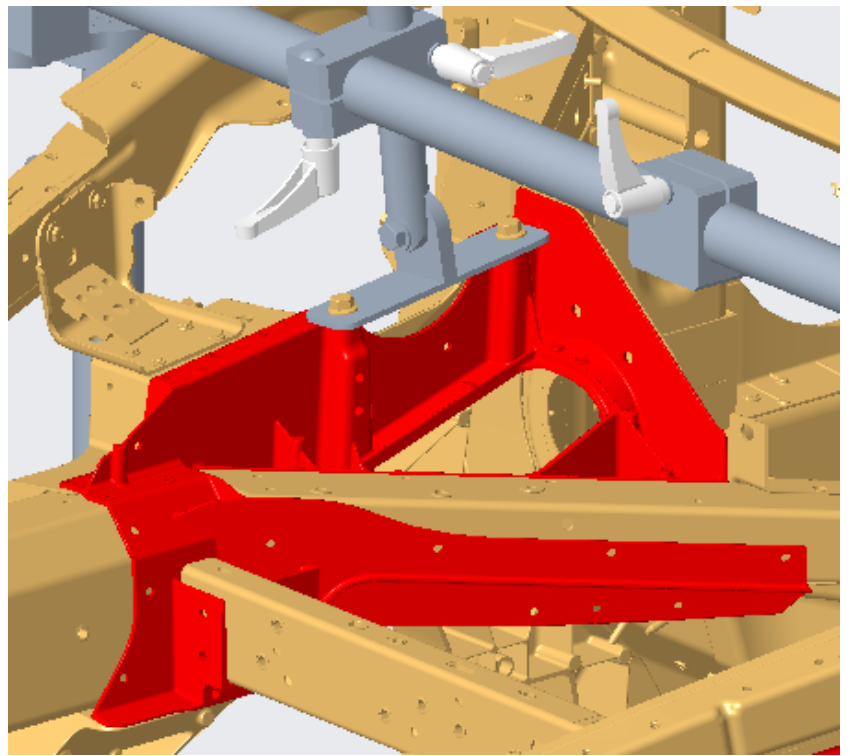
Fixture # 45, 46, 47, 48



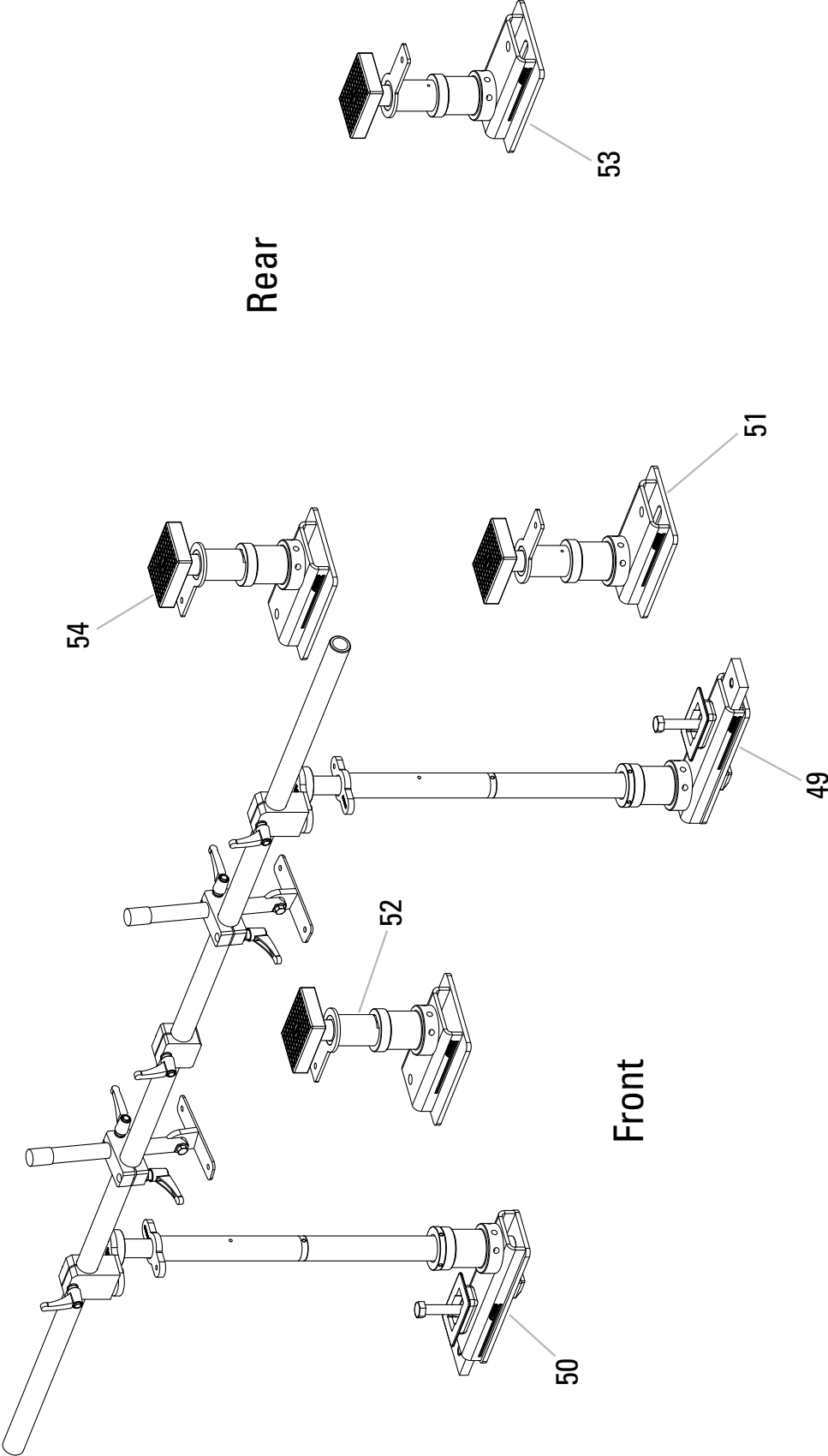
C8 Front Floor Extension Reinforcement

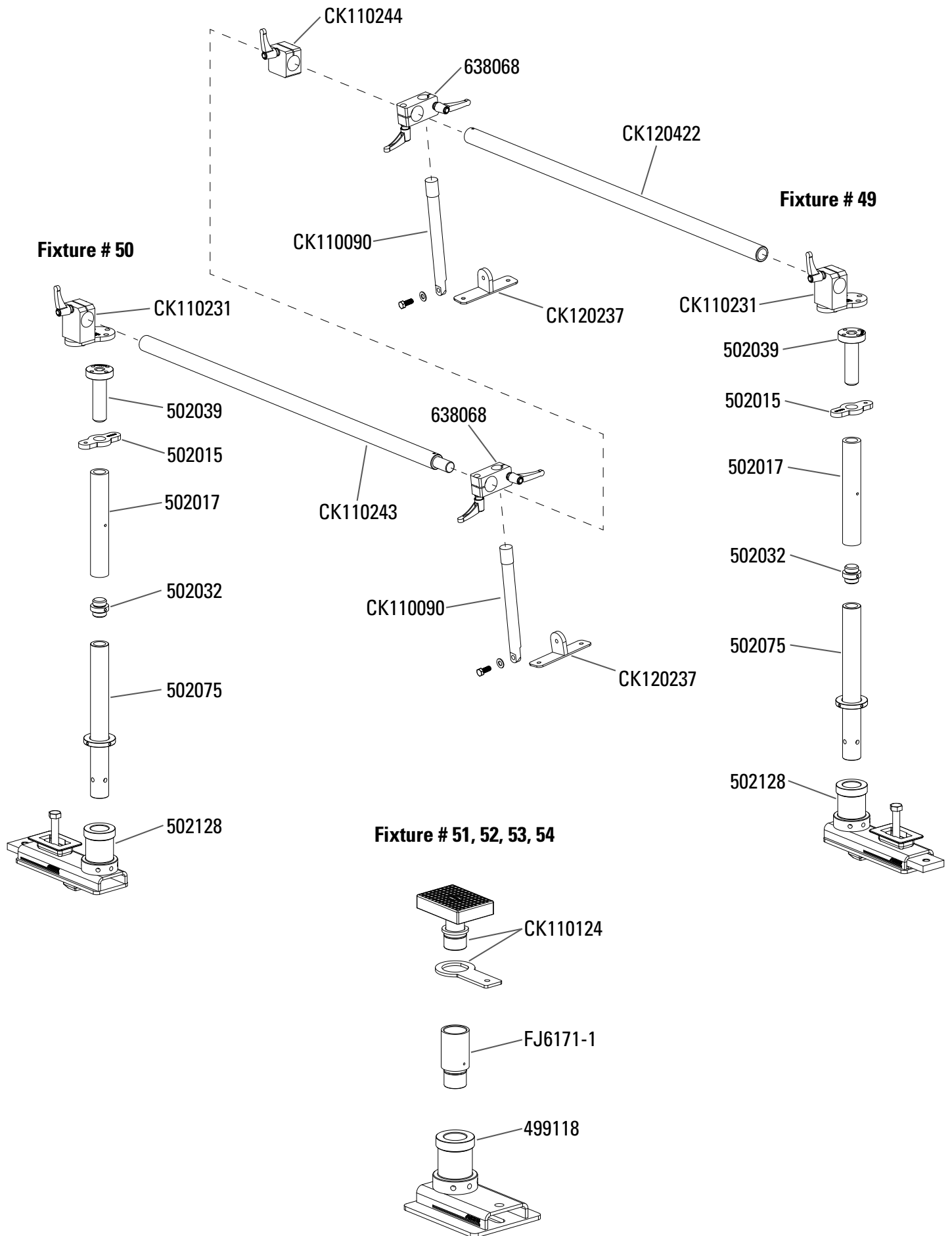


C8 Front Floor Extension Reinforcement Detail

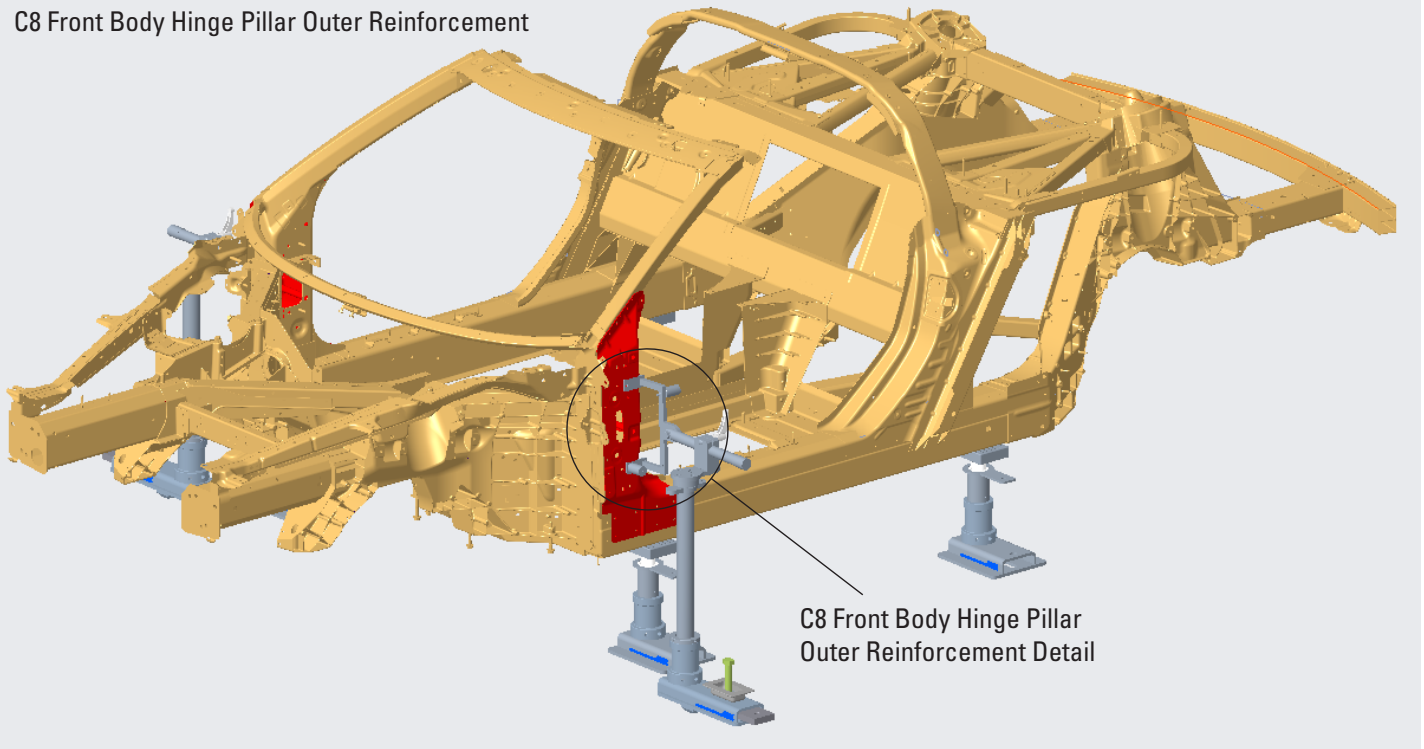


C8 Front Floor Extension Reinforcement

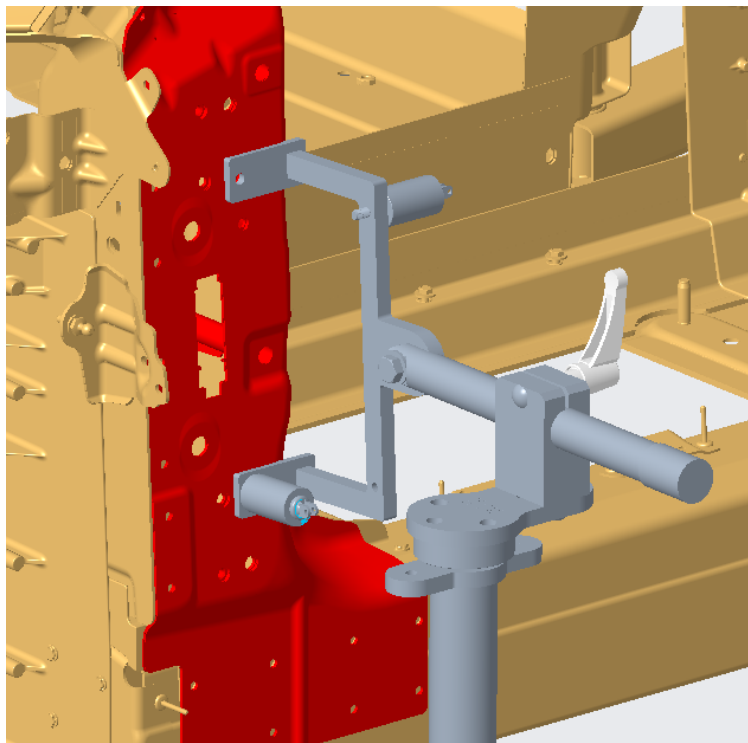




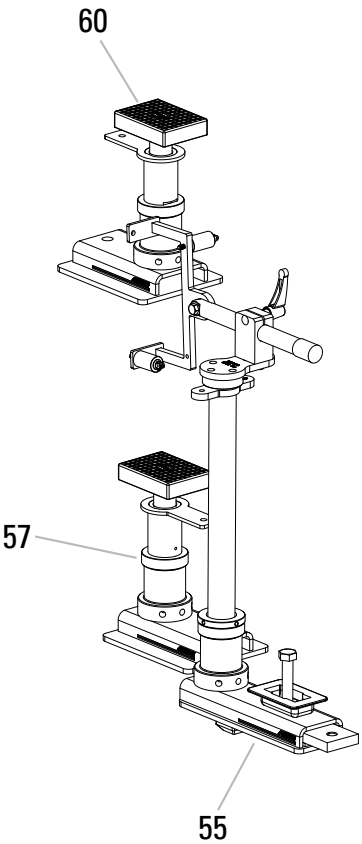
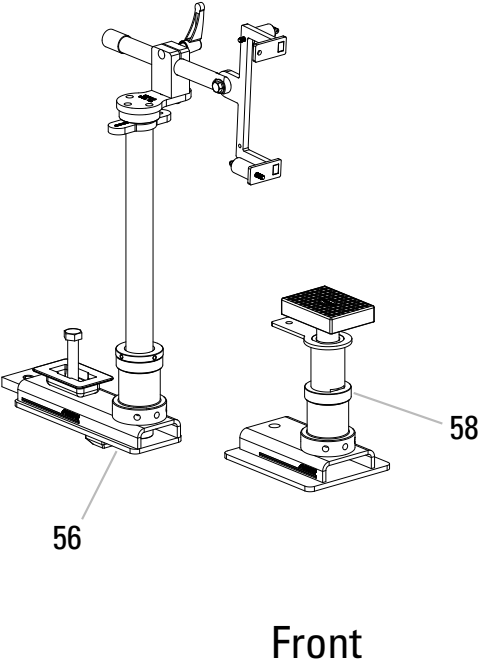
C8 Front Body Hinge Pillar Outer Reinforcement



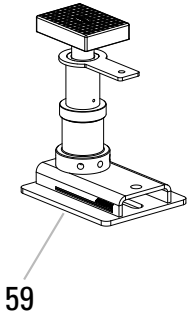
C8 Front Body Hinge Pillar Outer Reinforcement Detail



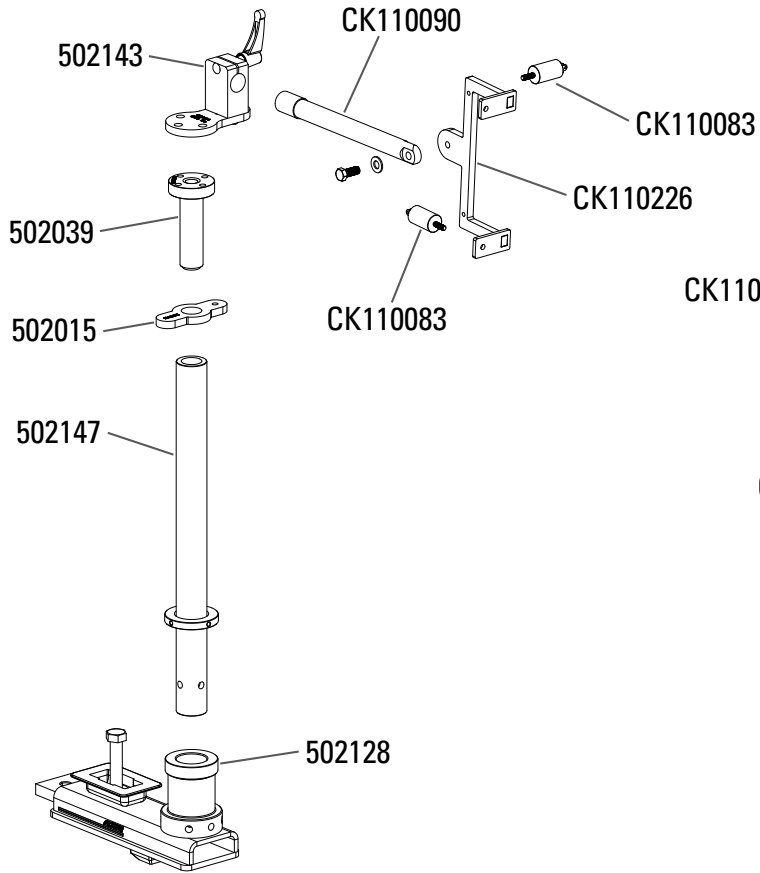
C8 Front Body Hinge Pillar Outer Reinforcement



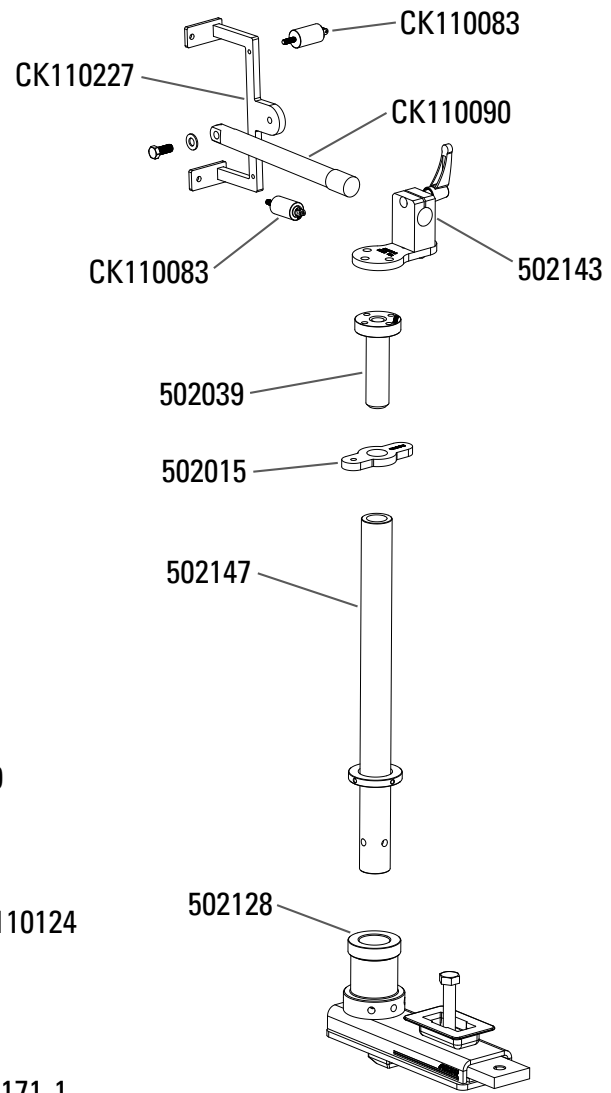
Rear



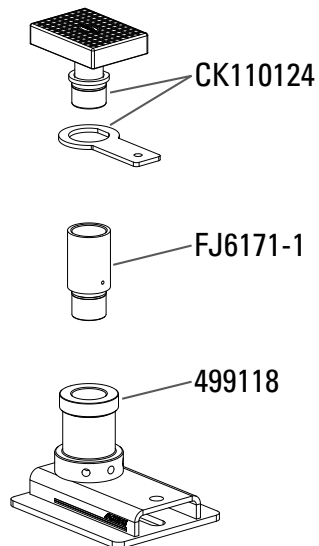
Fixture # 56



Fixture # 55

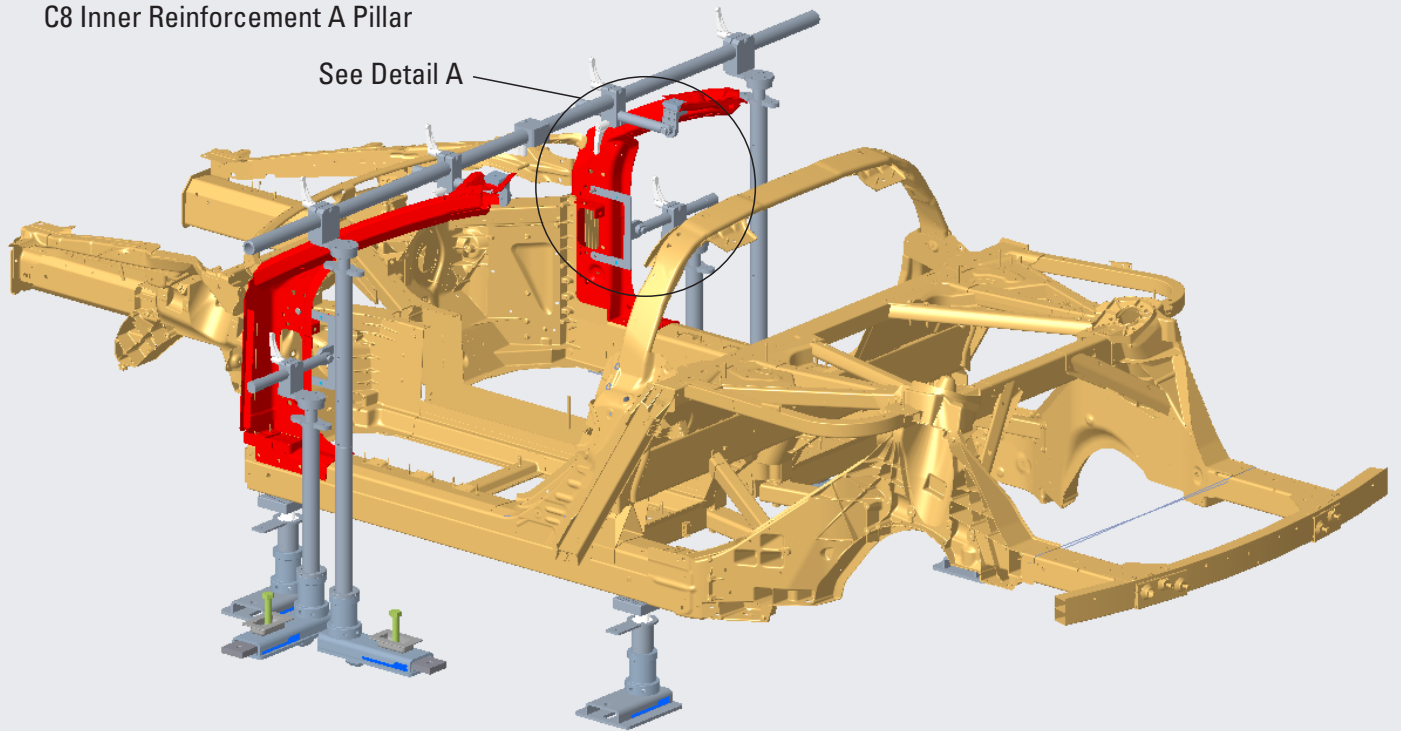


Fixture # 57, 58, 59, 60

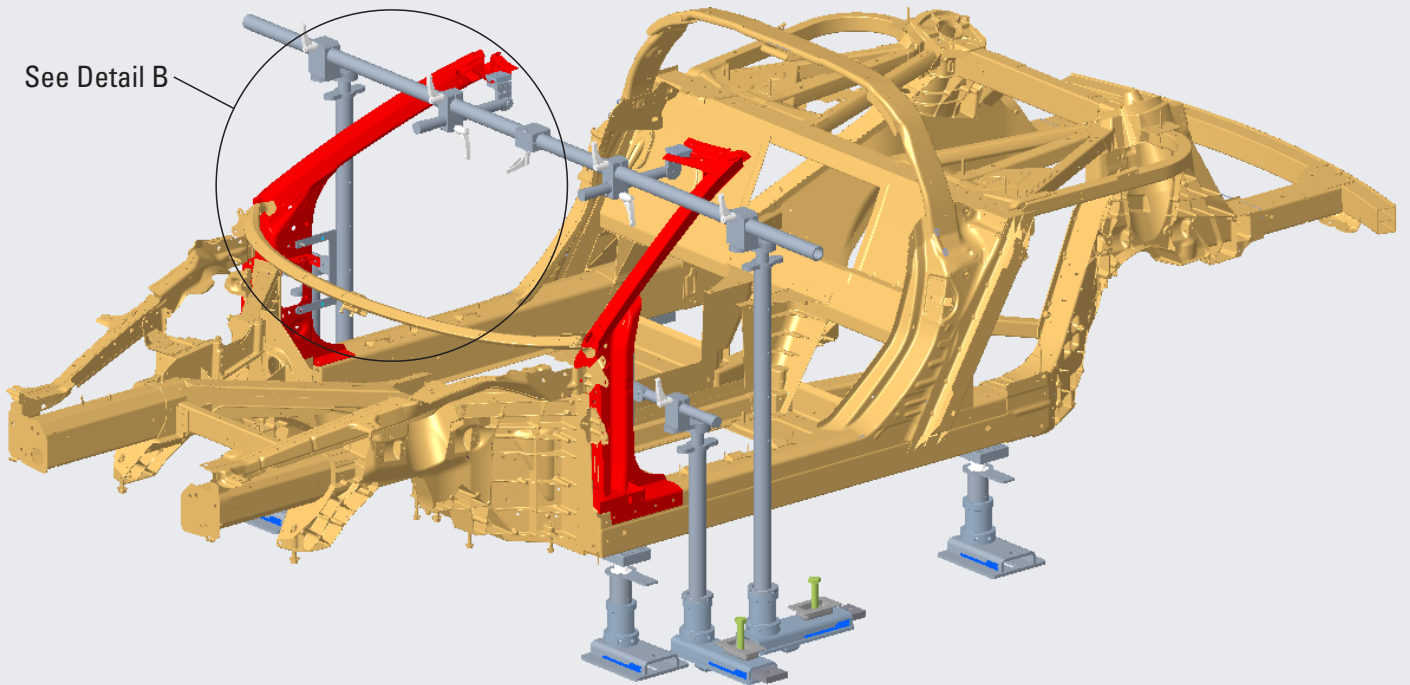


C8 Inner Reinforcement A Pillar

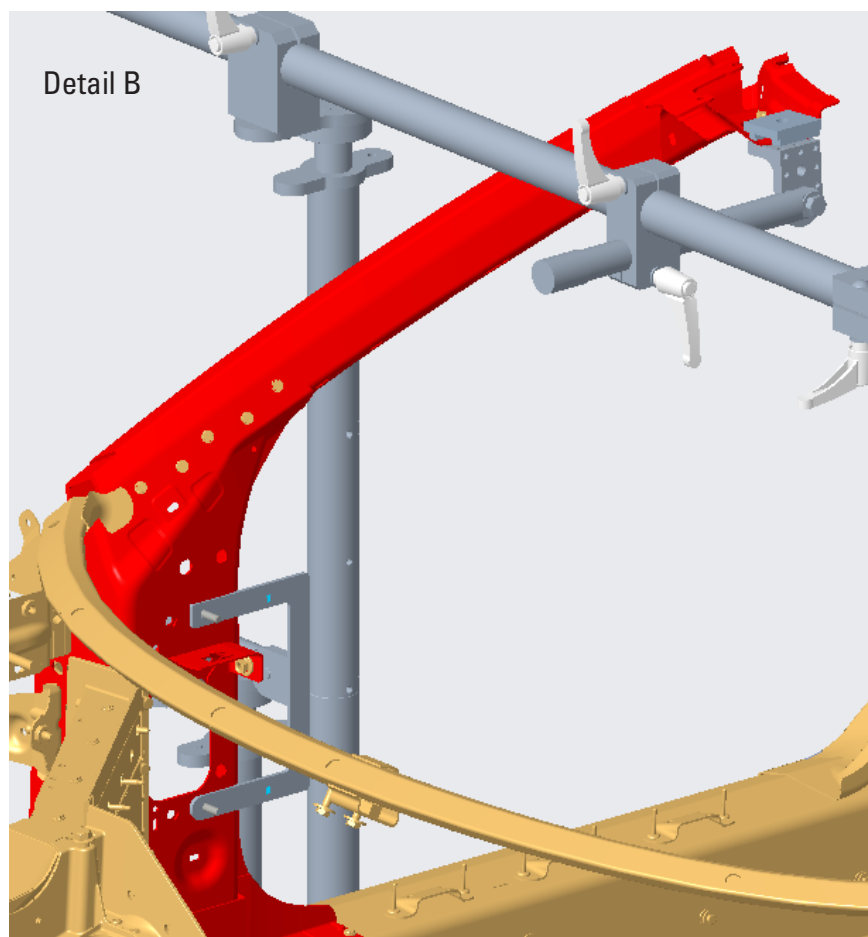
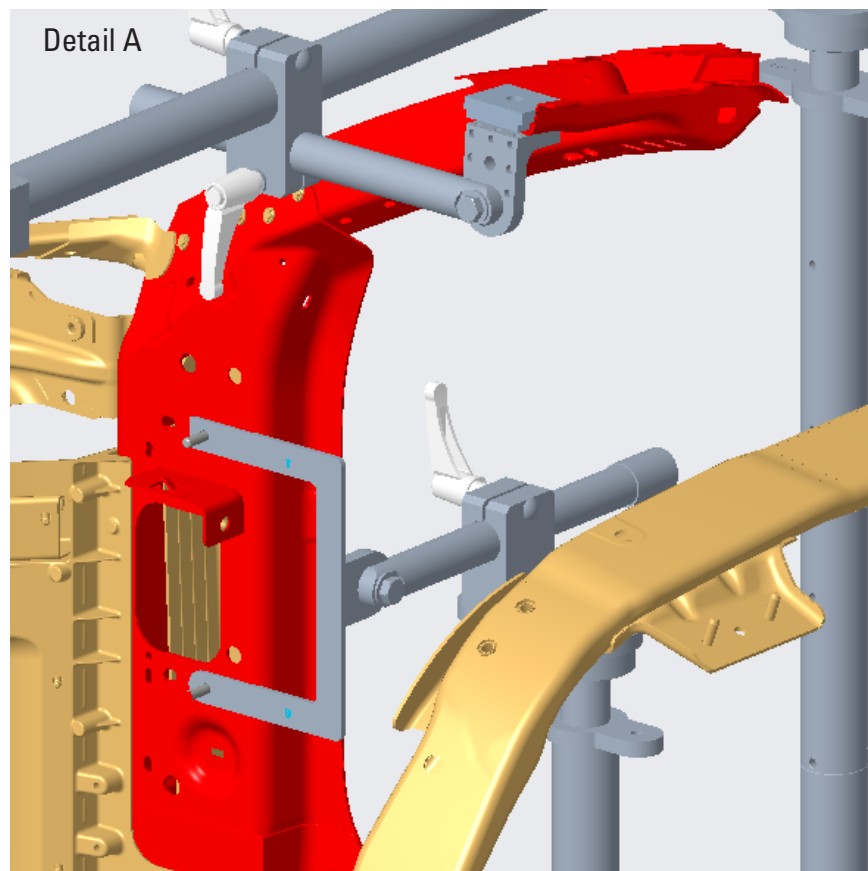
See Detail A



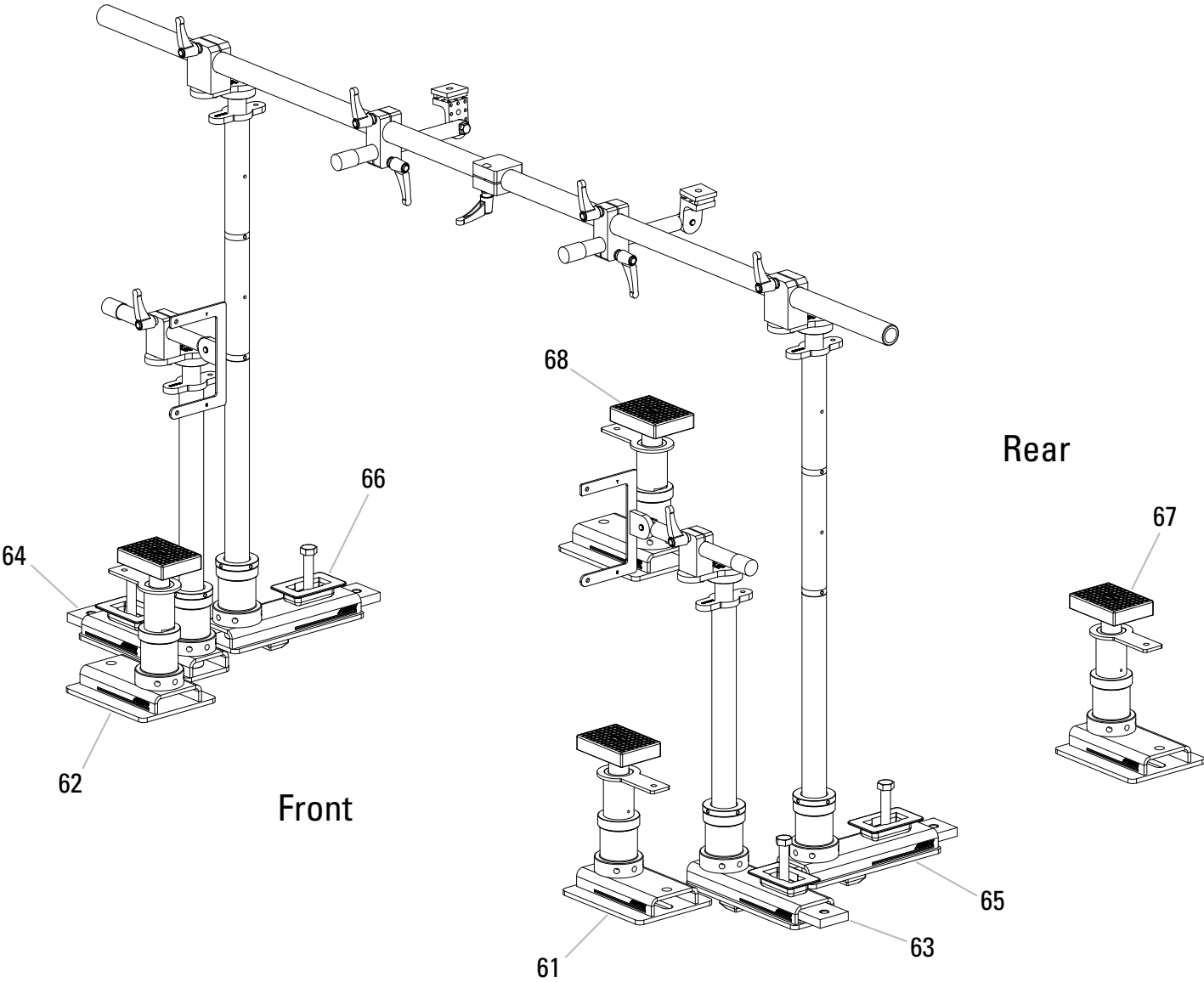
See Detail B



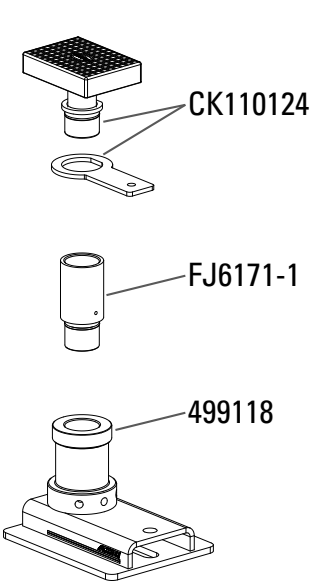
C8 Inner Reinforcement A Pillar Detail



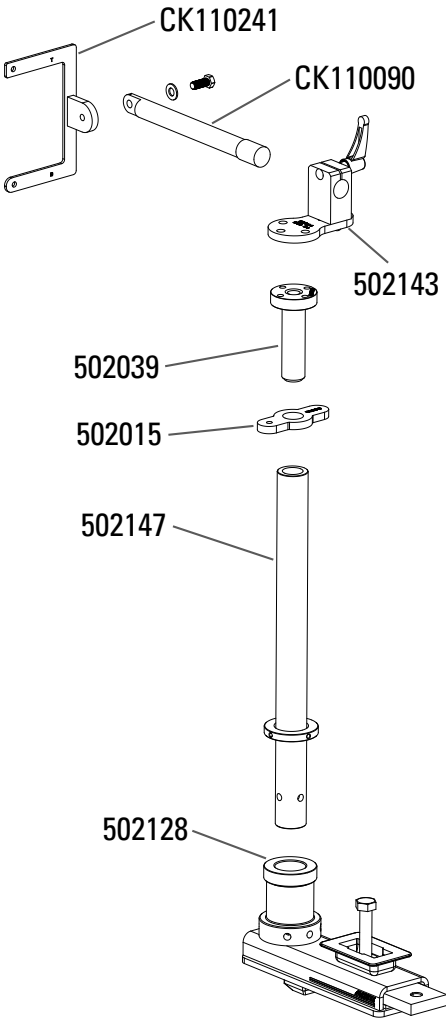
C8 Inner Reinforcement A Pillar



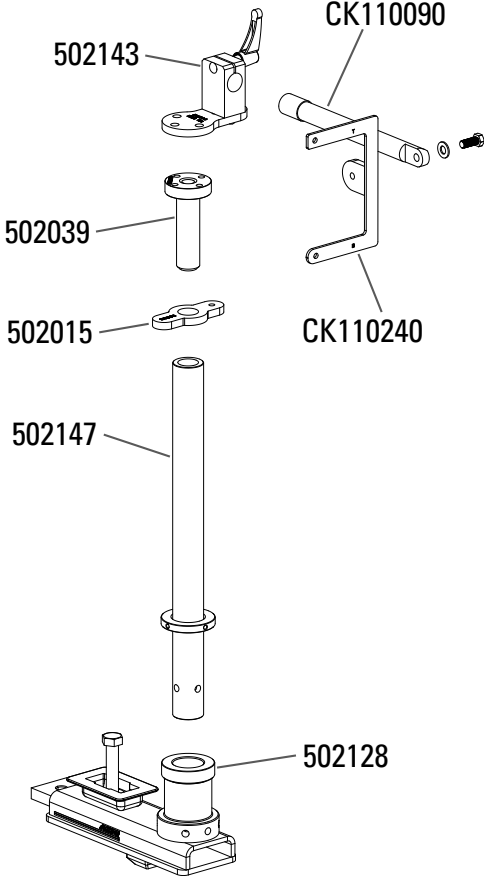
Fixture # 61, 62, 67, 68

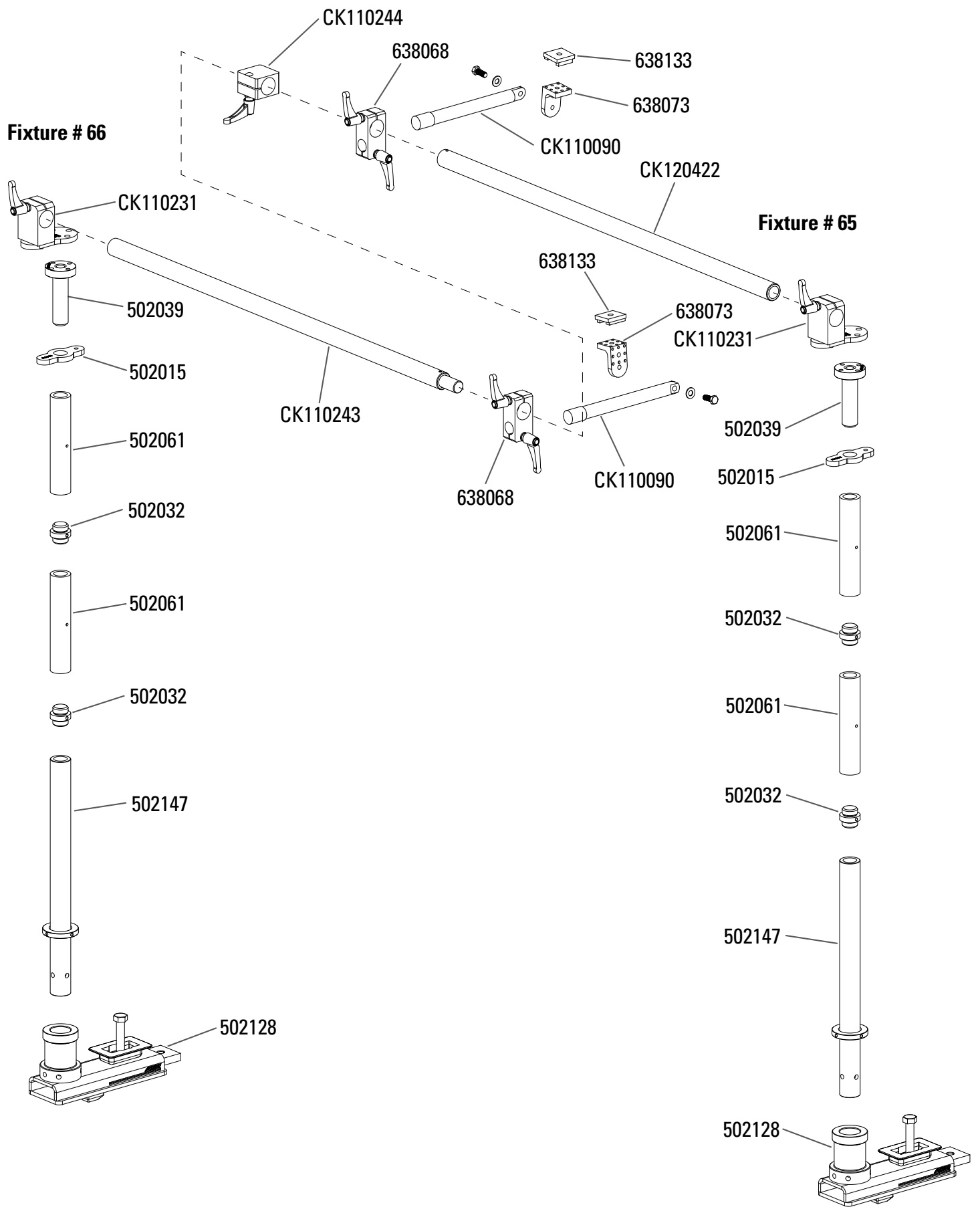


Fixture # 63

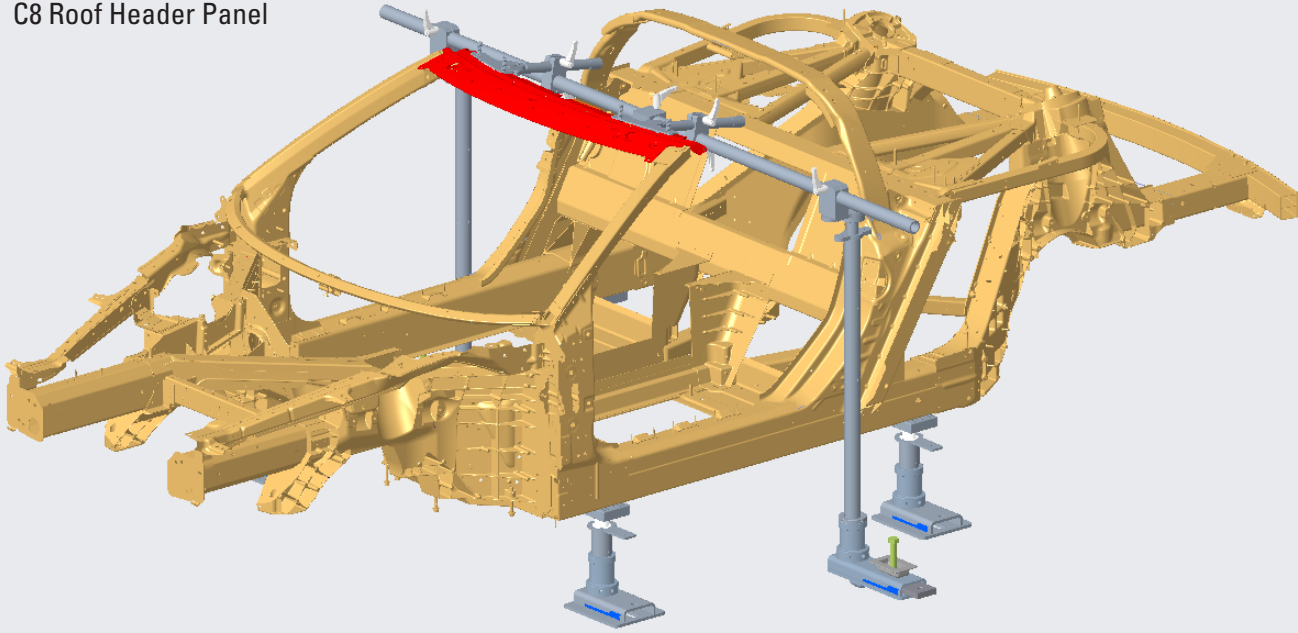


Fixture # 64

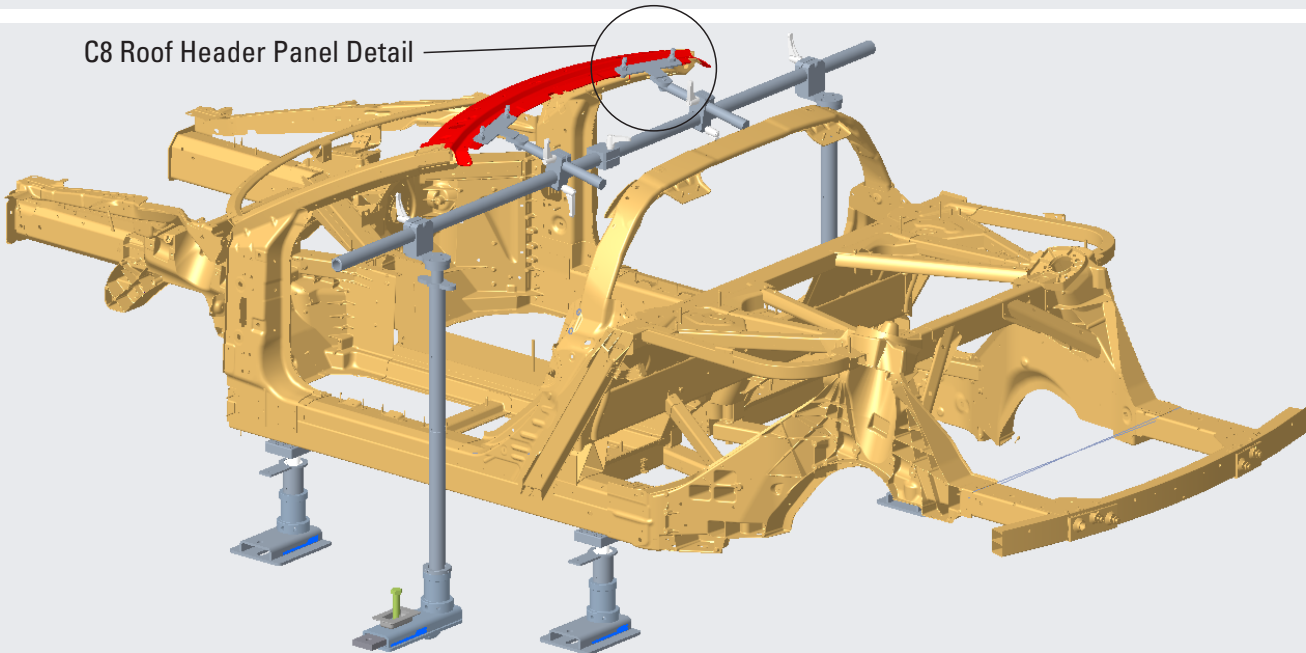




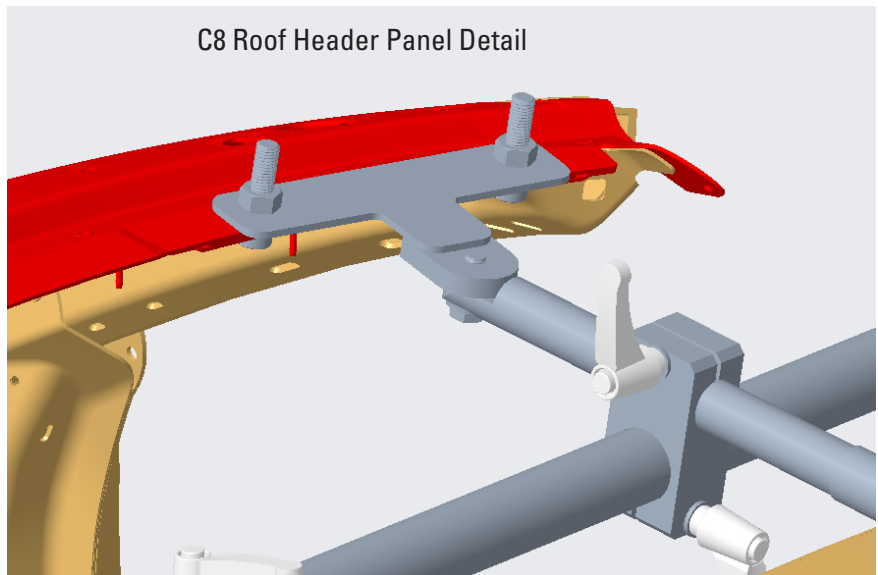
C8 Roof Header Panel



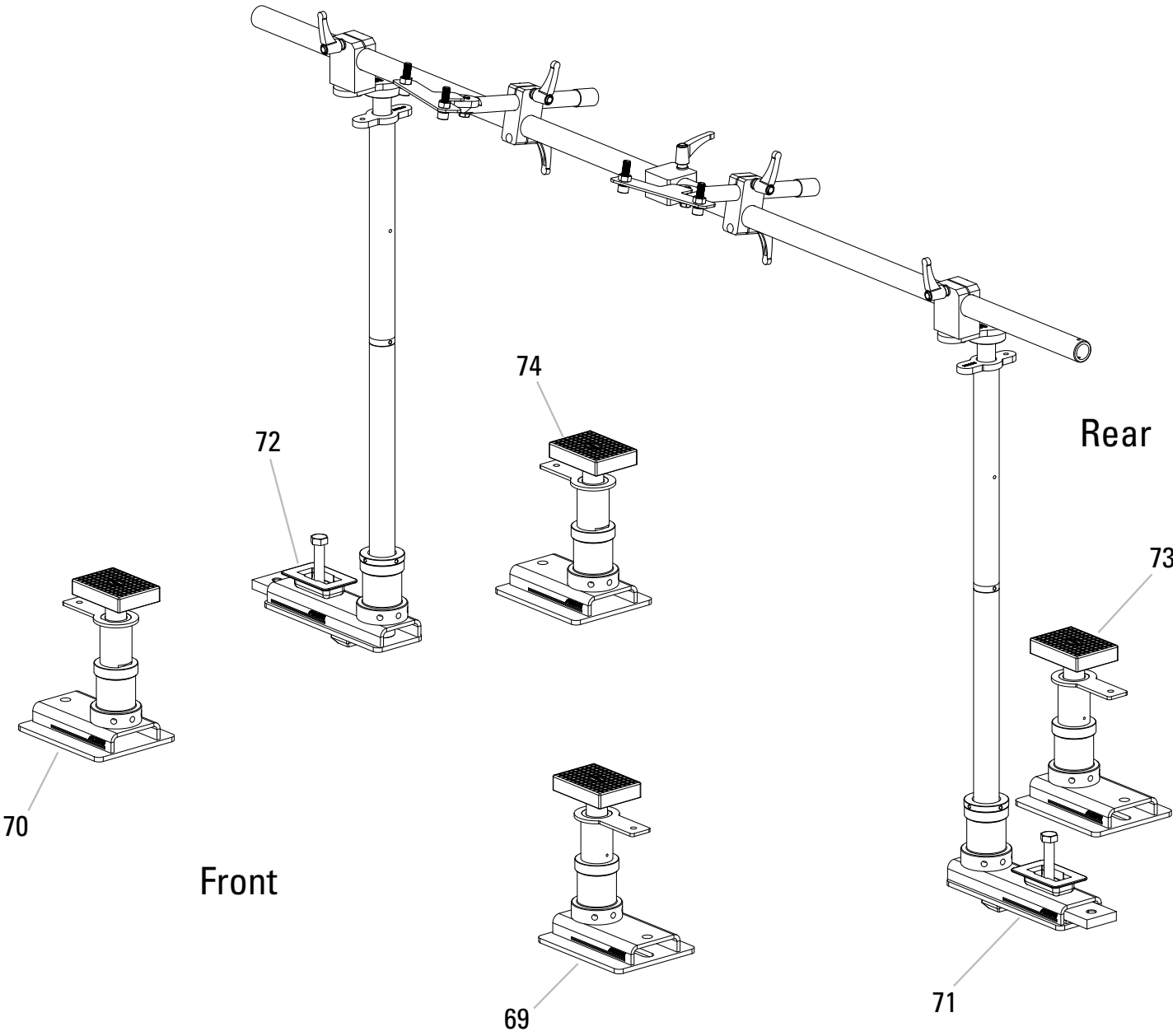
C8 Roof Header Panel Detail



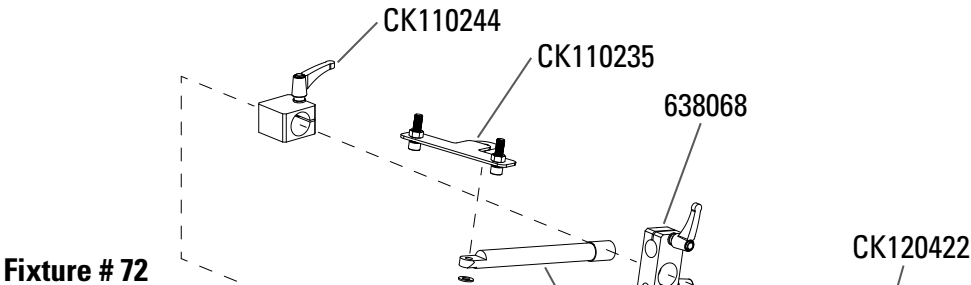
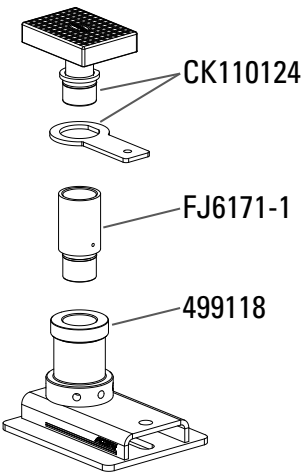
C8 Roof Header Panel Detail



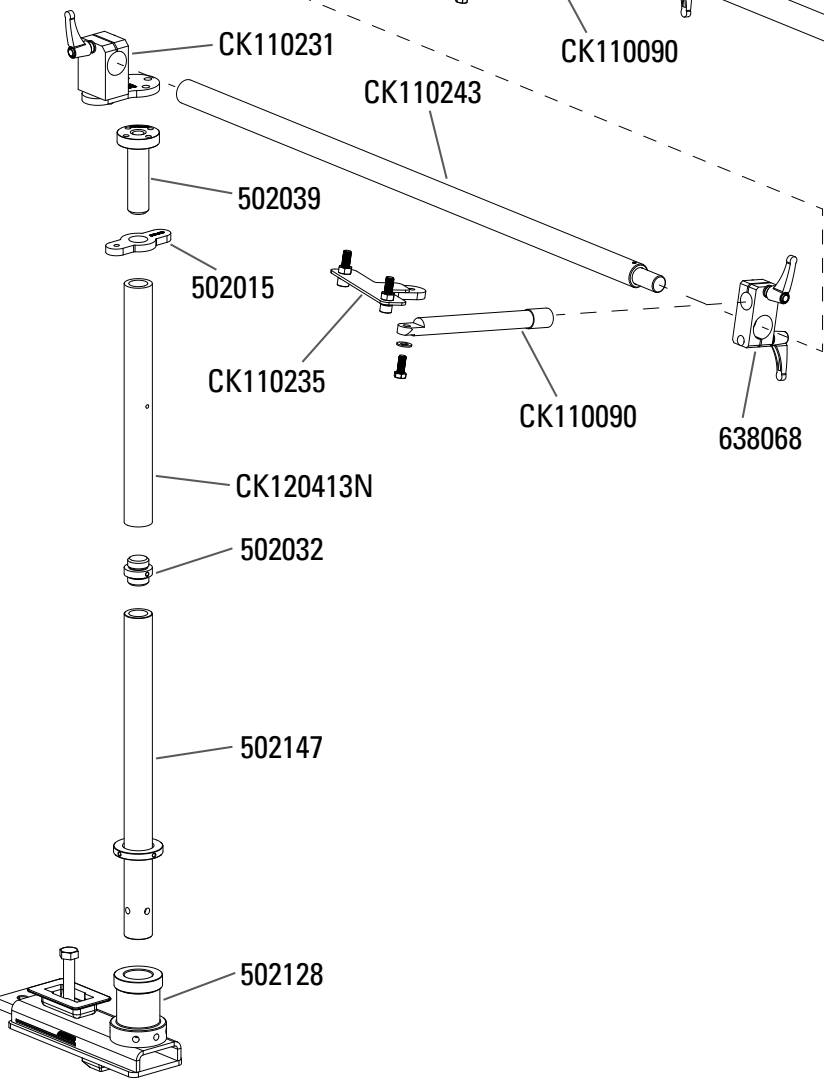
C8 Roof Header Panel



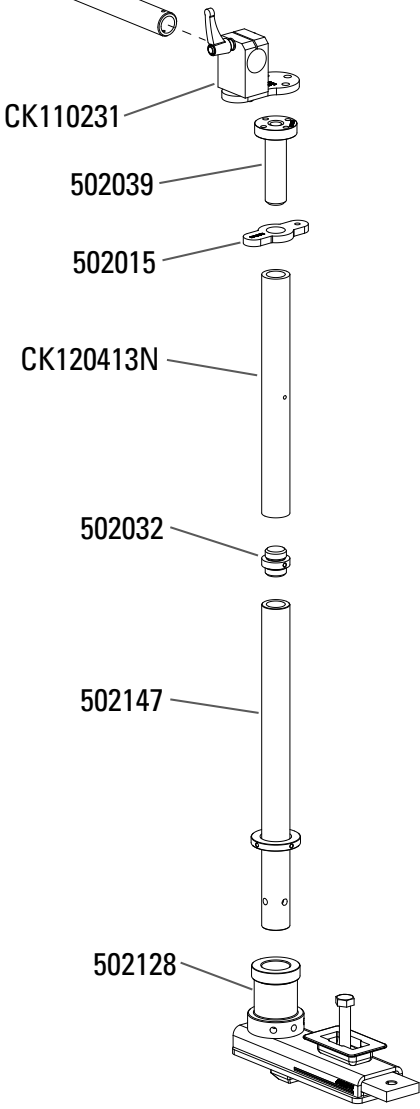
Fixture # 69, 70, 73, 74



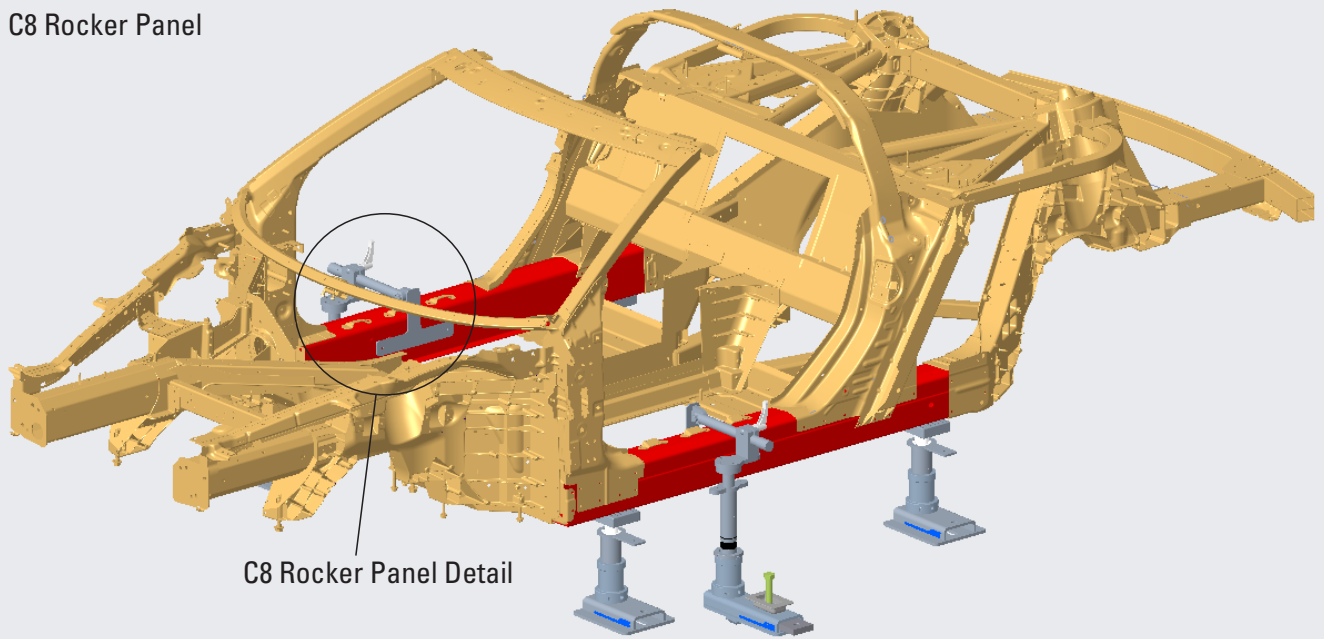
Fixture # 72



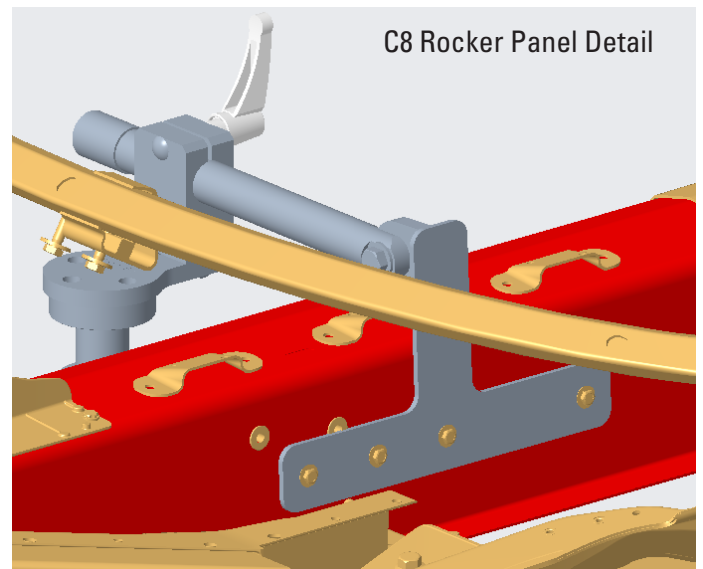
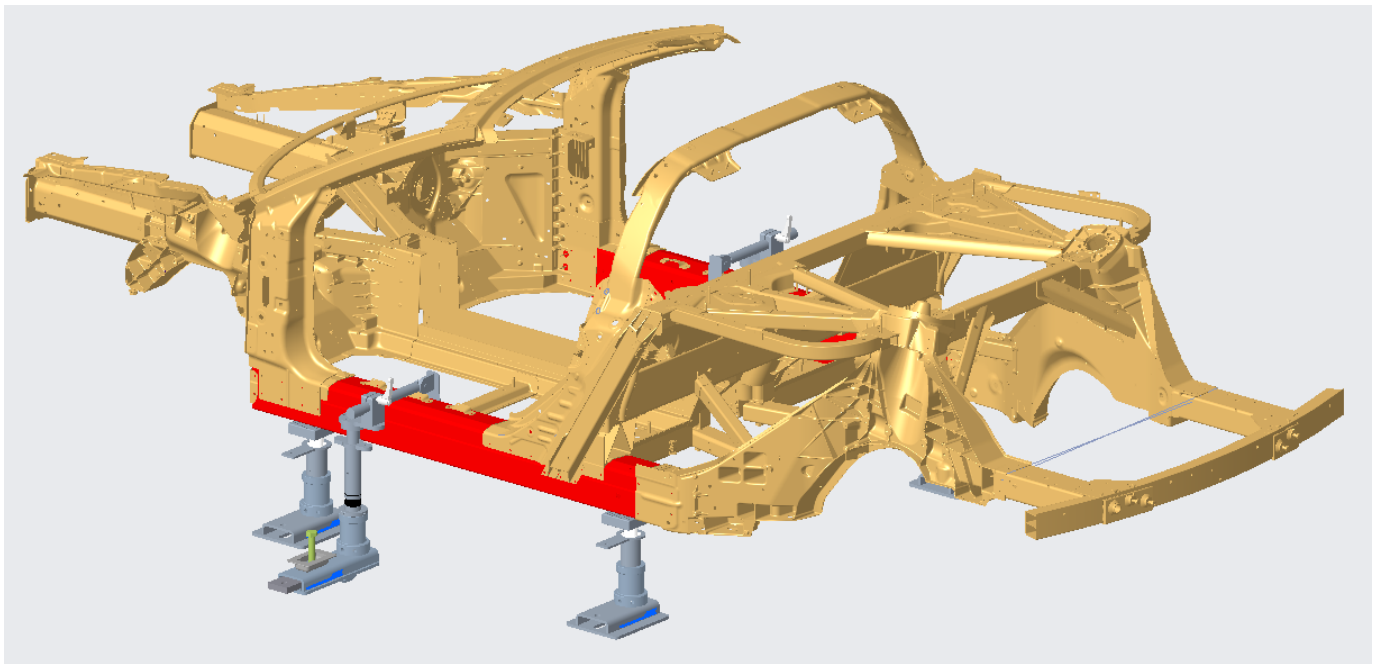
Fixture # 71



C8 Rocker Panel

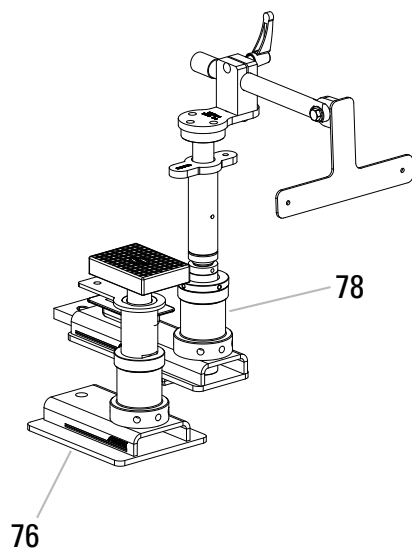


C8 Rocker Panel Detail

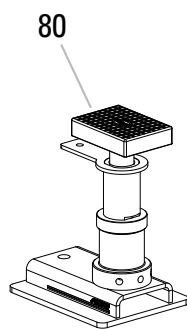


C8 Rocker Panel Detail

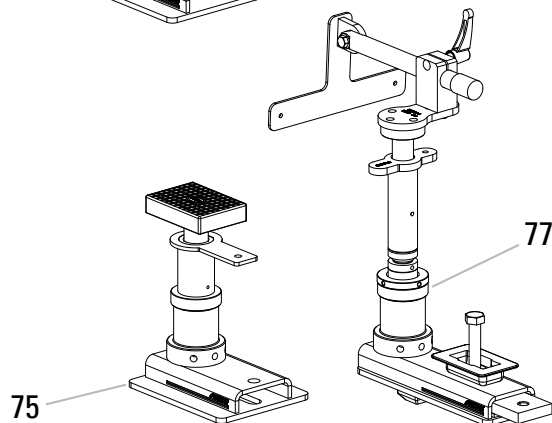
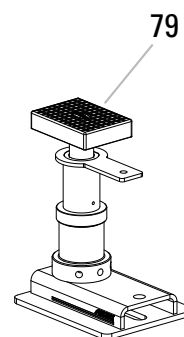
C8 Rocker Panel



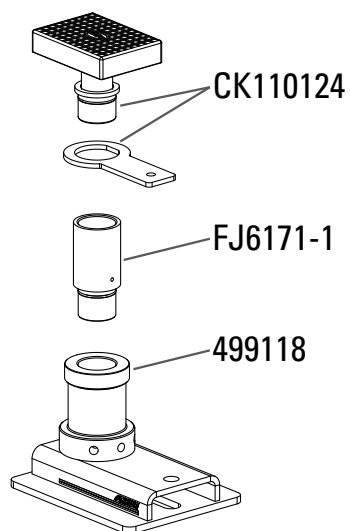
Front



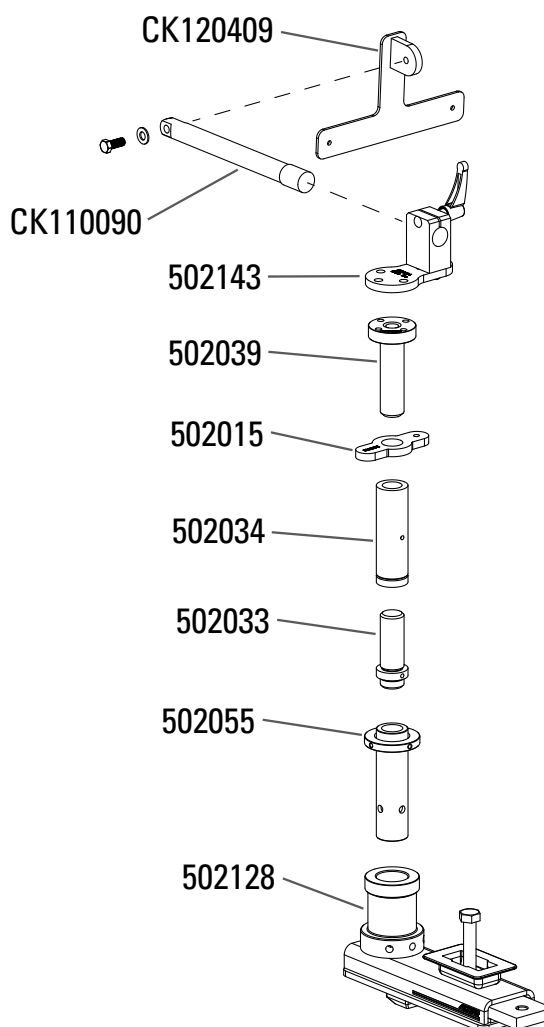
Rear



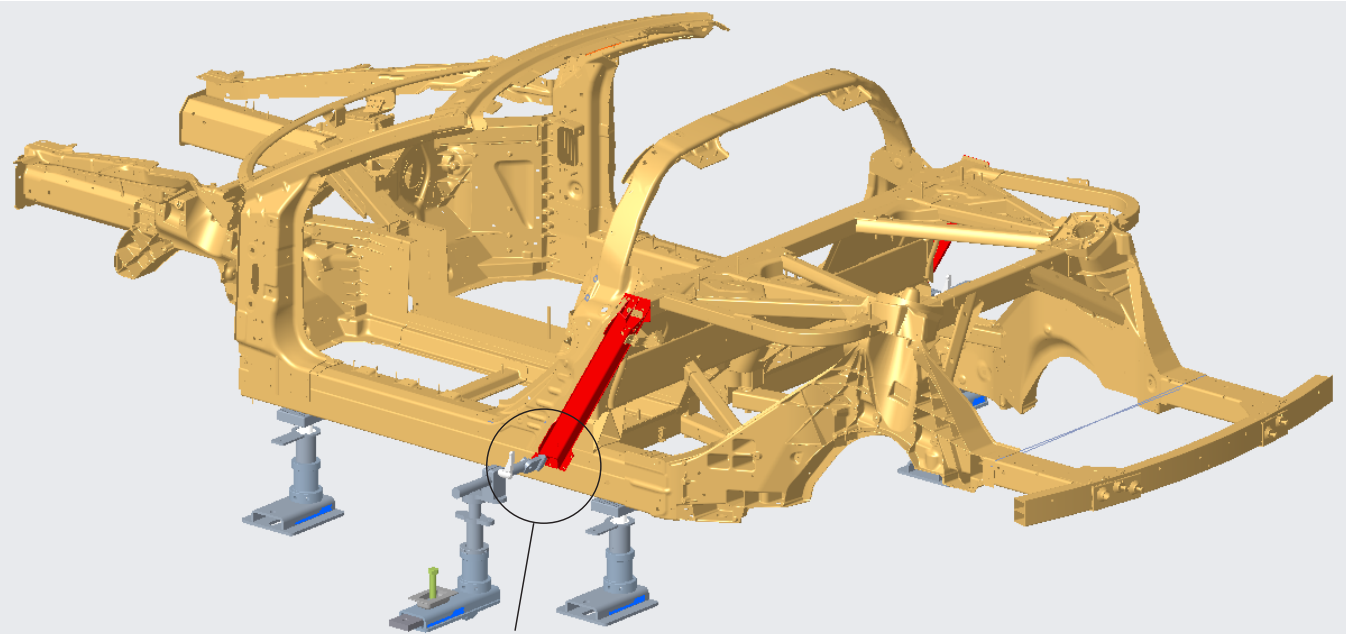
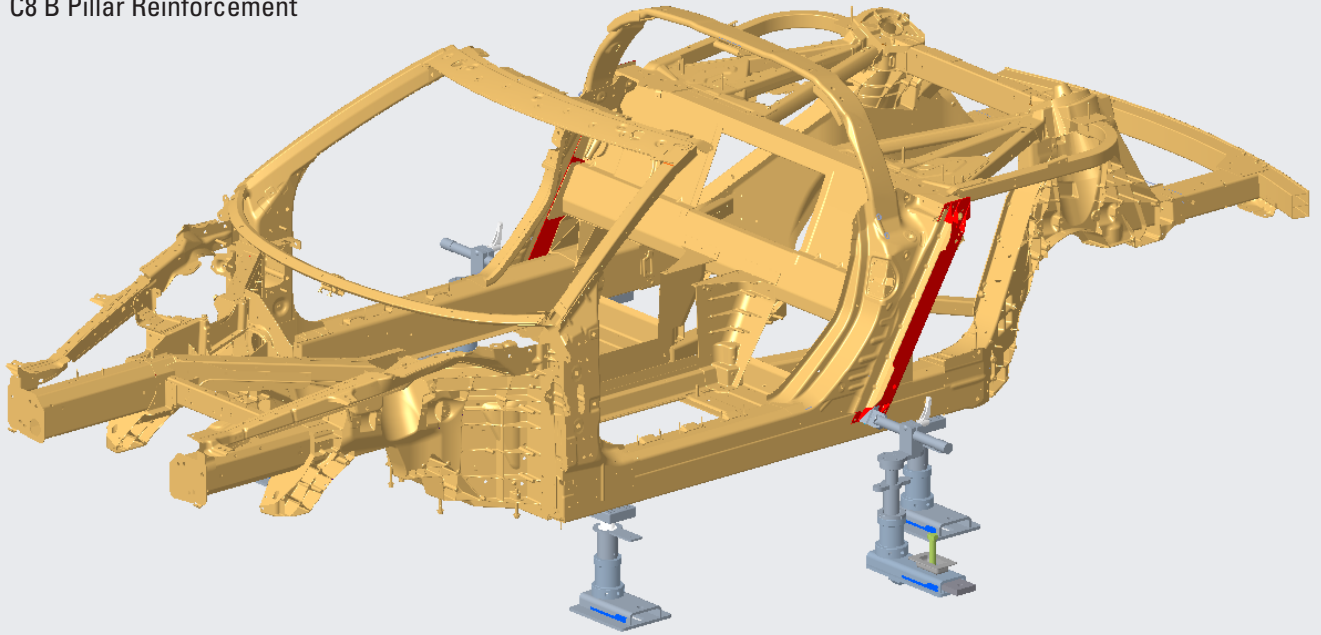
Fixture # 75, 76, 79, 80



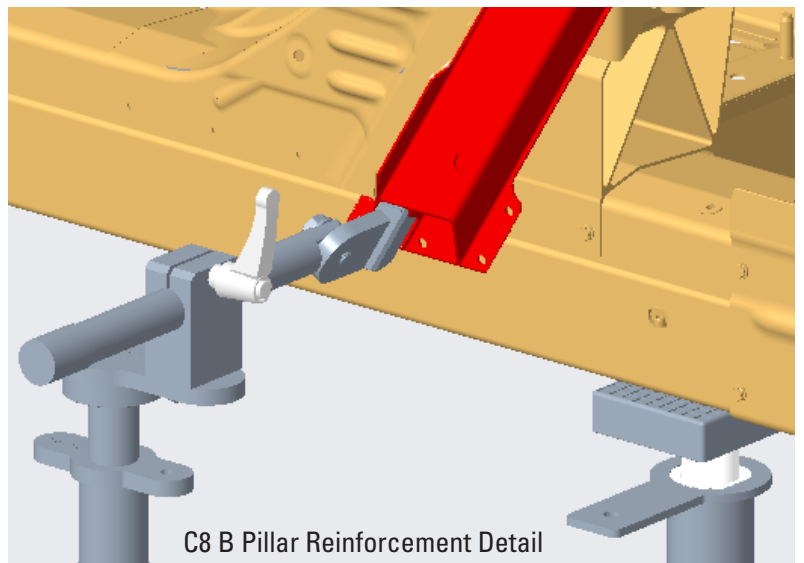
Fixture # 77, 78



C8 B Pillar Reinforcement

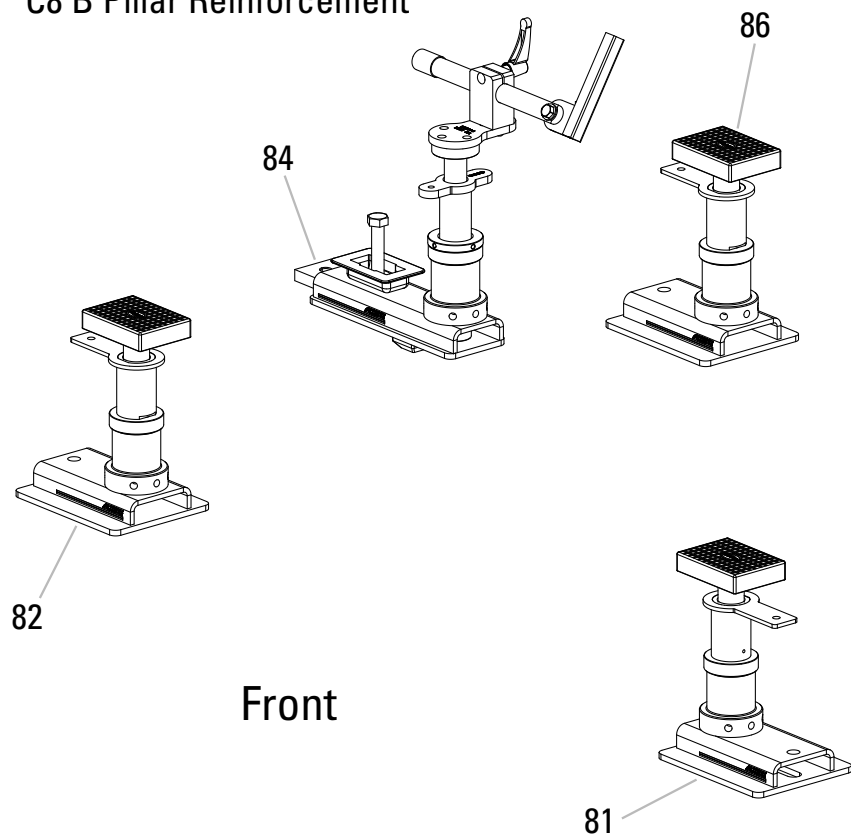


C8 B Pillar Reinforcement Detail

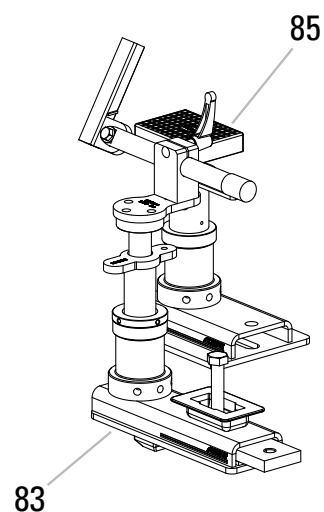


C8 B Pillar Reinforcement Detail

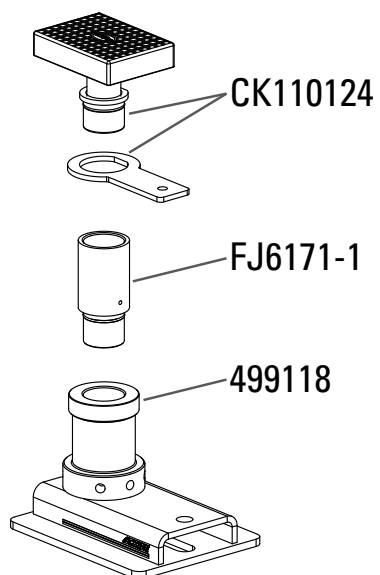
C8 B Pillar Reinforcement



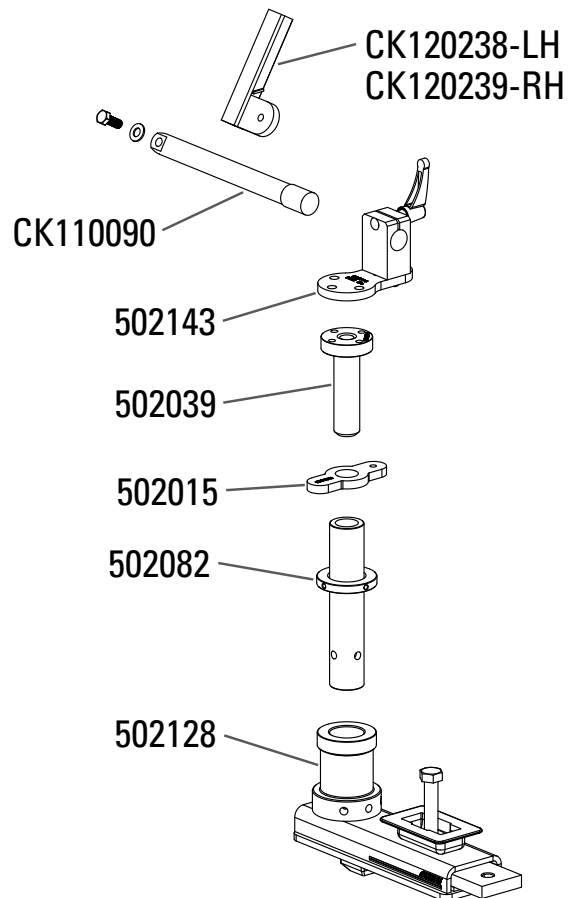
Rear



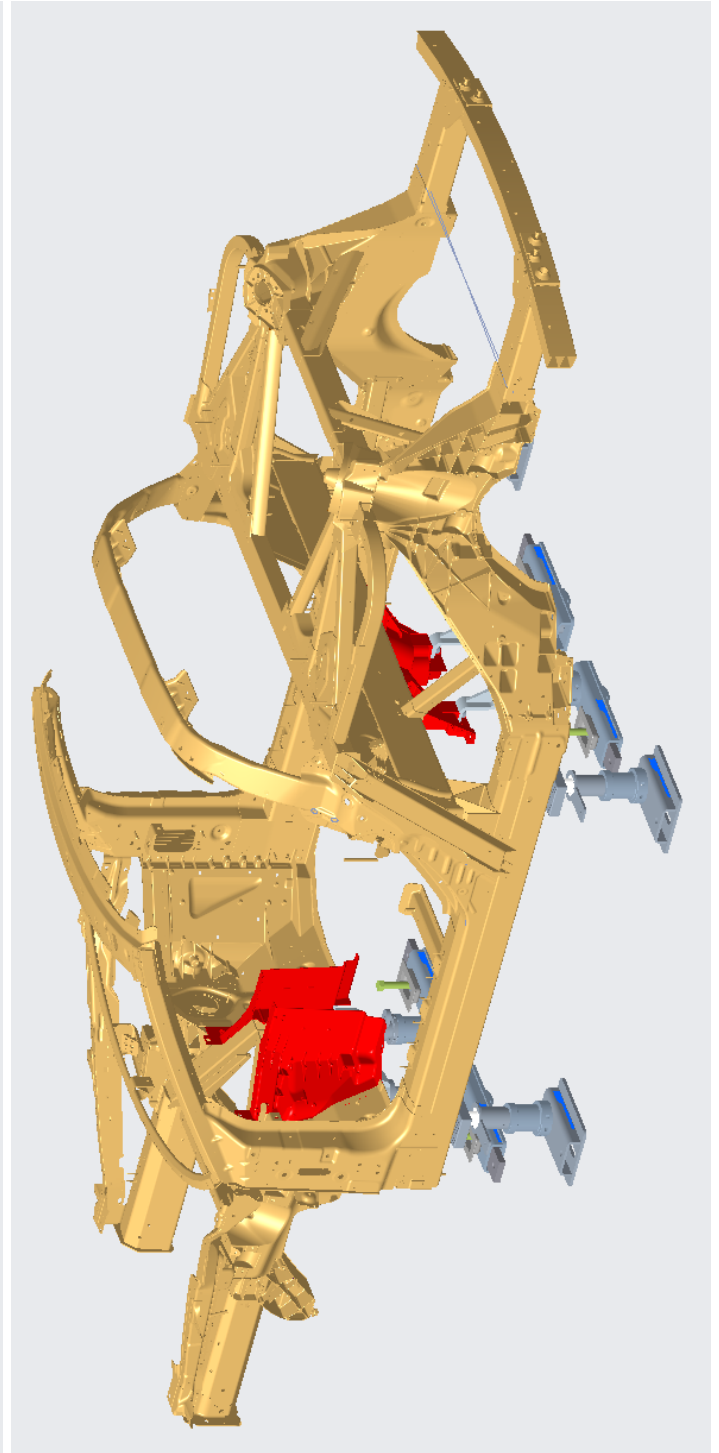
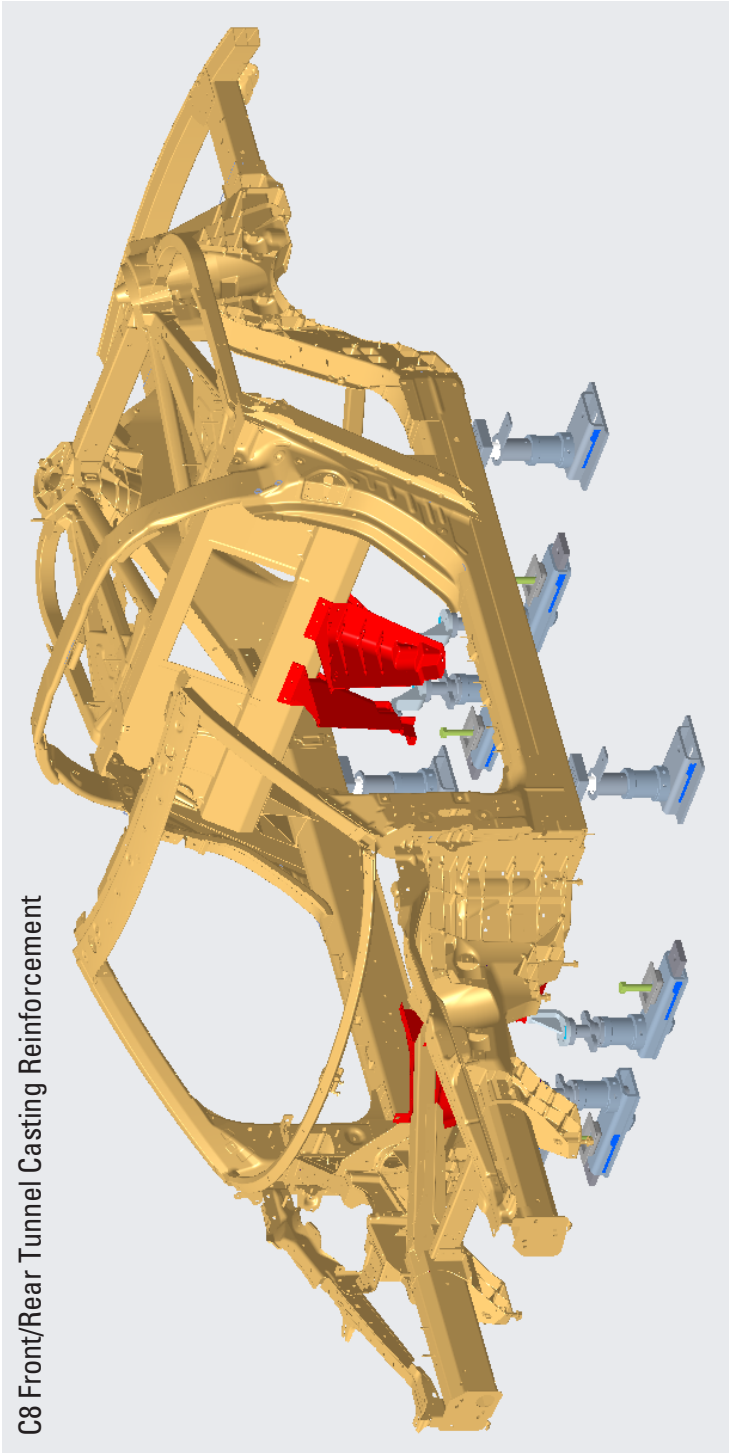
Fixture # 81, 82, 85, 86



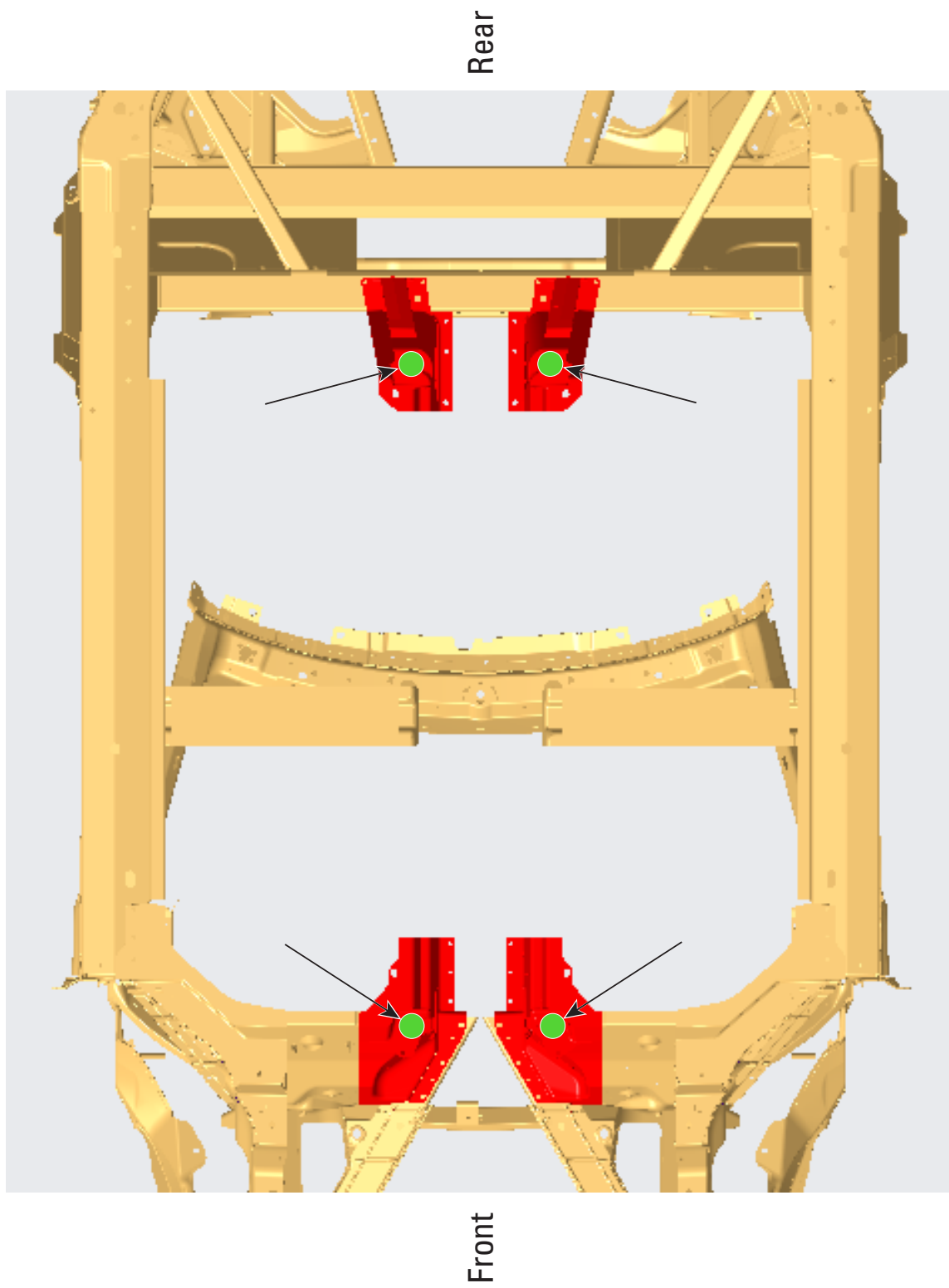
Fixture # 83, 84



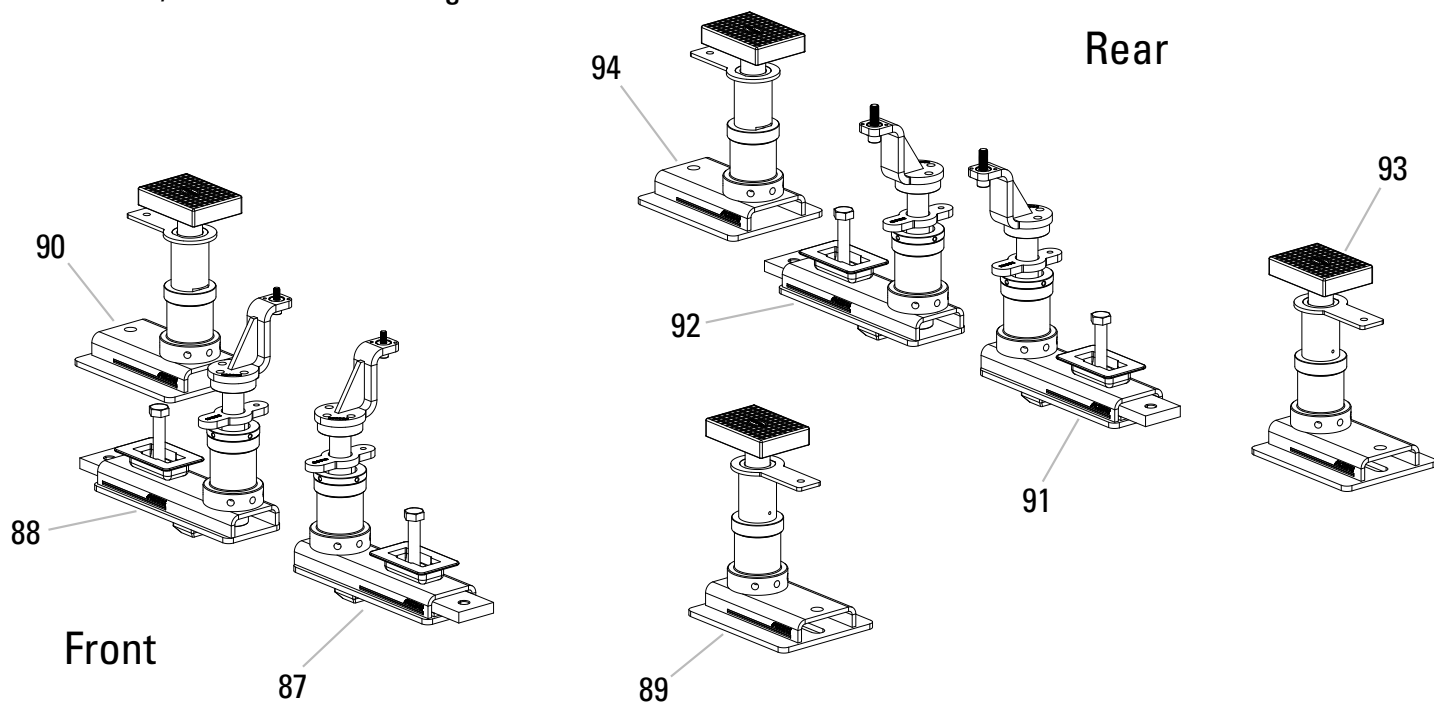
C8 Front/Rear Tunnel Casting Reinforcement



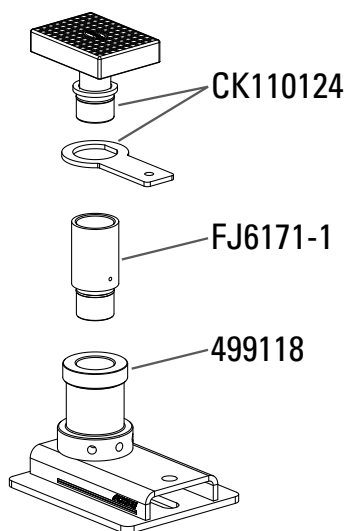
C8 Front/Rear Tunnel Casting Reinforcement
Underbody Detail



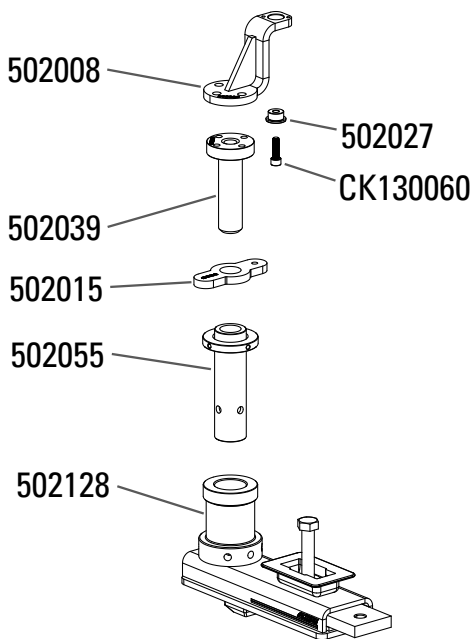
C8 Front/Rear Tunnel Casting Reinforcement



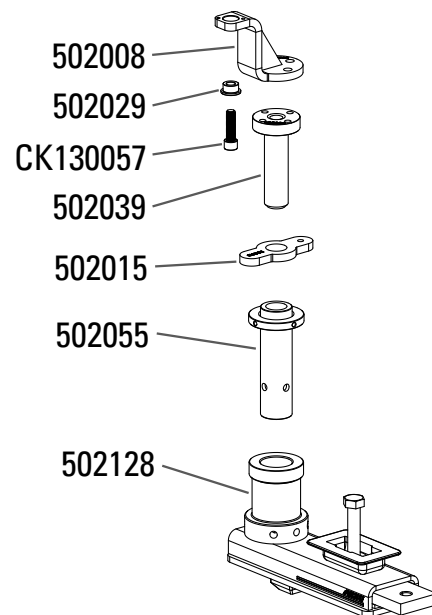
Fixture # 89, 90, 93, 94



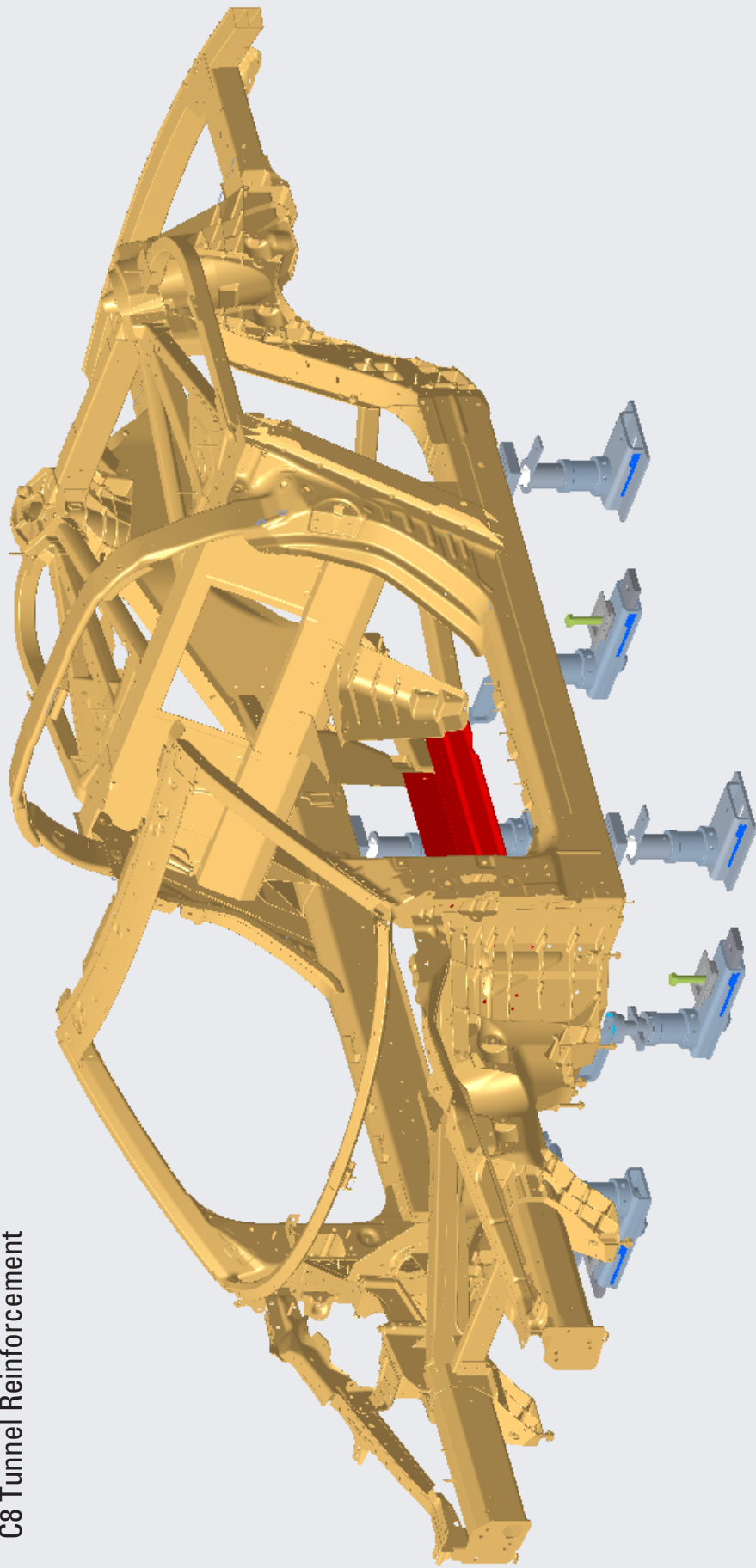
Fixture # 87, 88



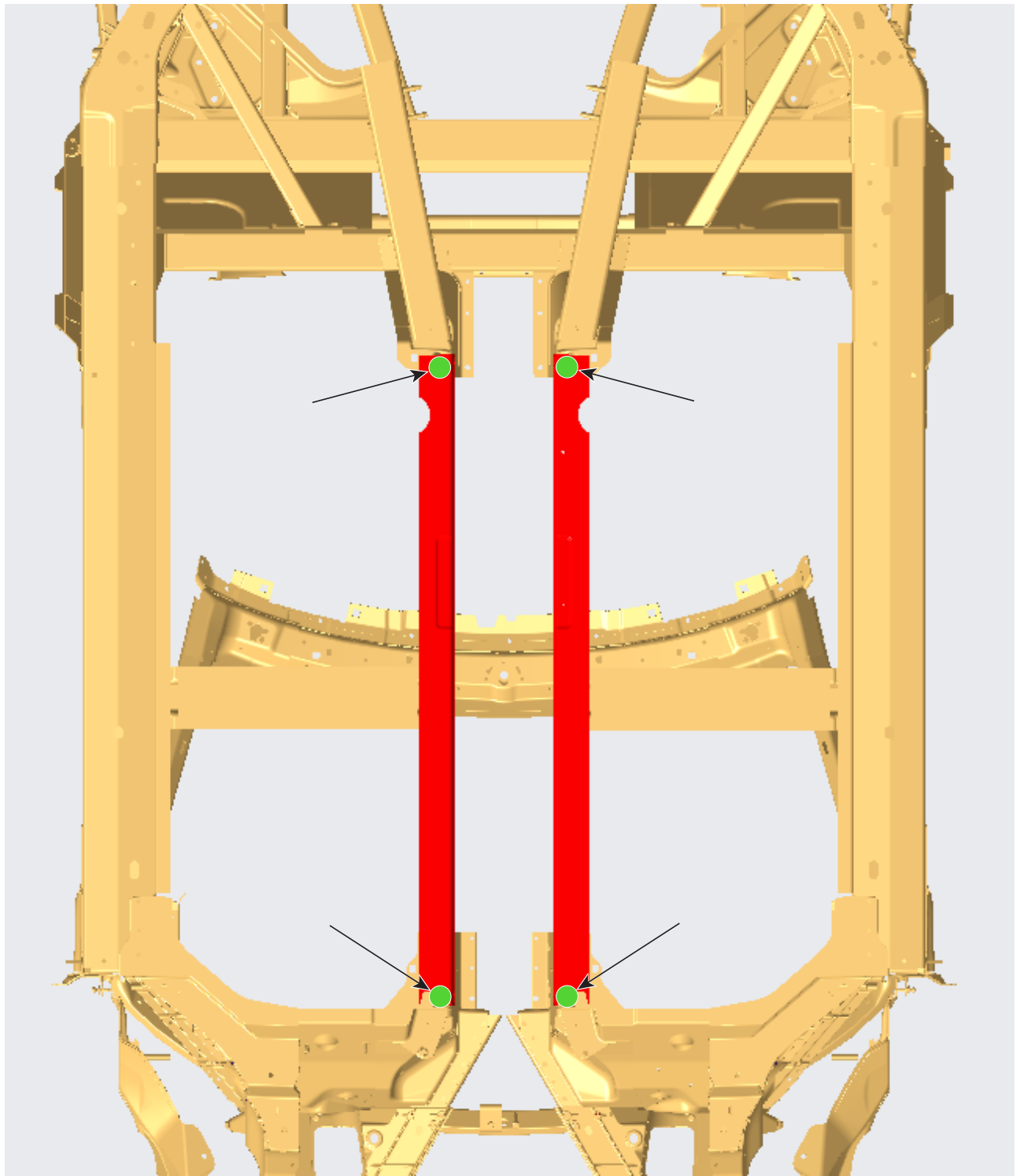
Fixture # 91, 92



C8 Tunnel Reinforcement



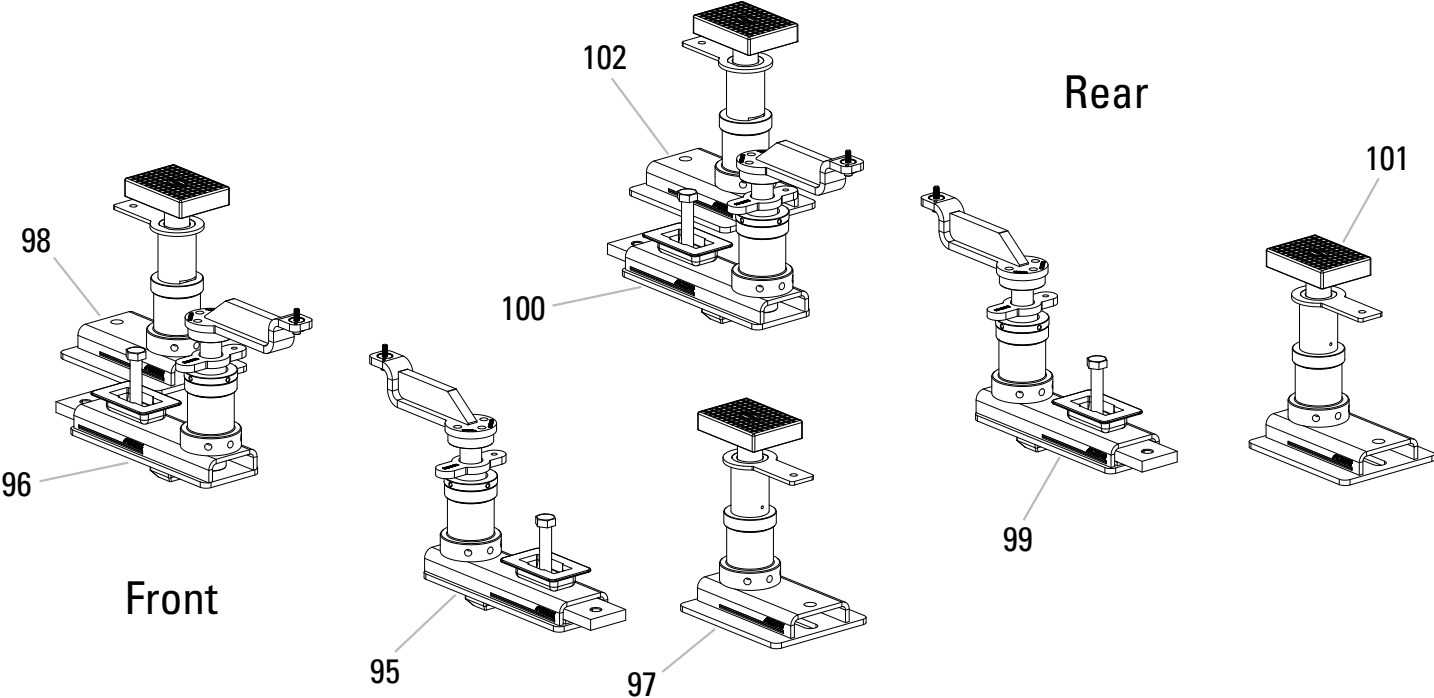
C8 Tunnel Reinforcement
Underbody Detail



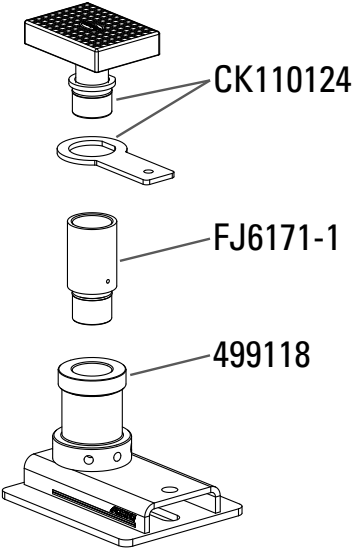
Rear

Front

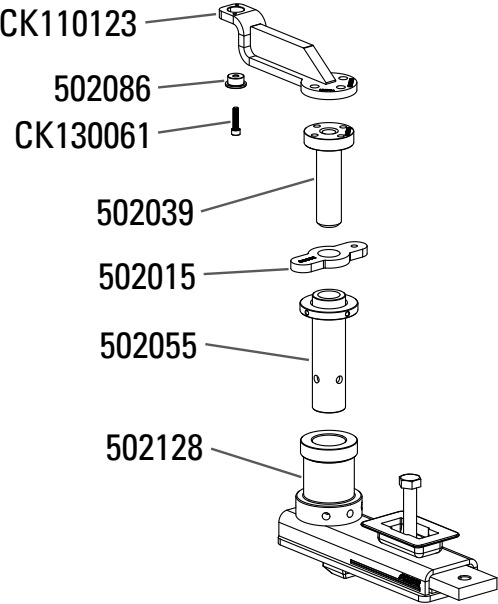
C8 Tunnel Reinforcement



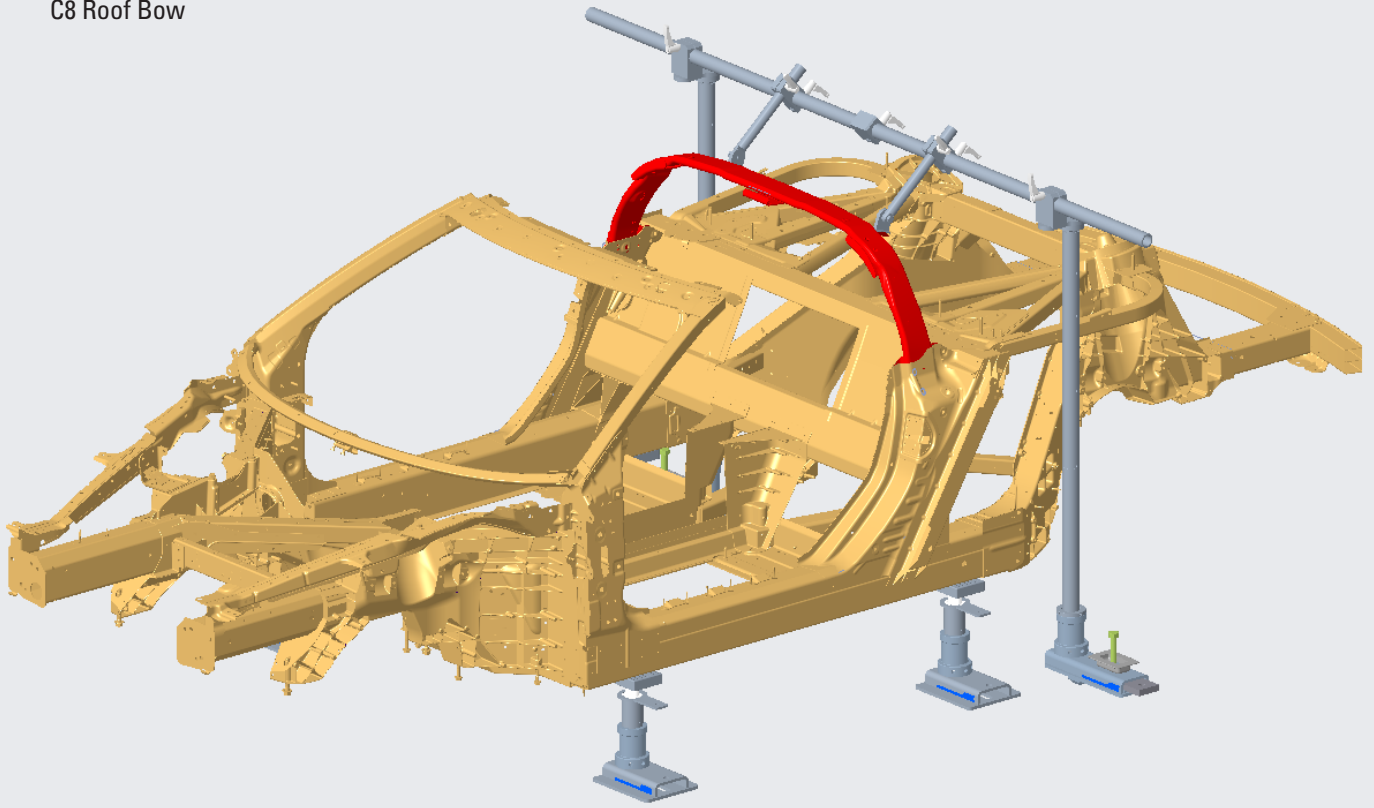
Fixture # 97, 98, 101, 102



Fixture # 95, 96, 99, 100

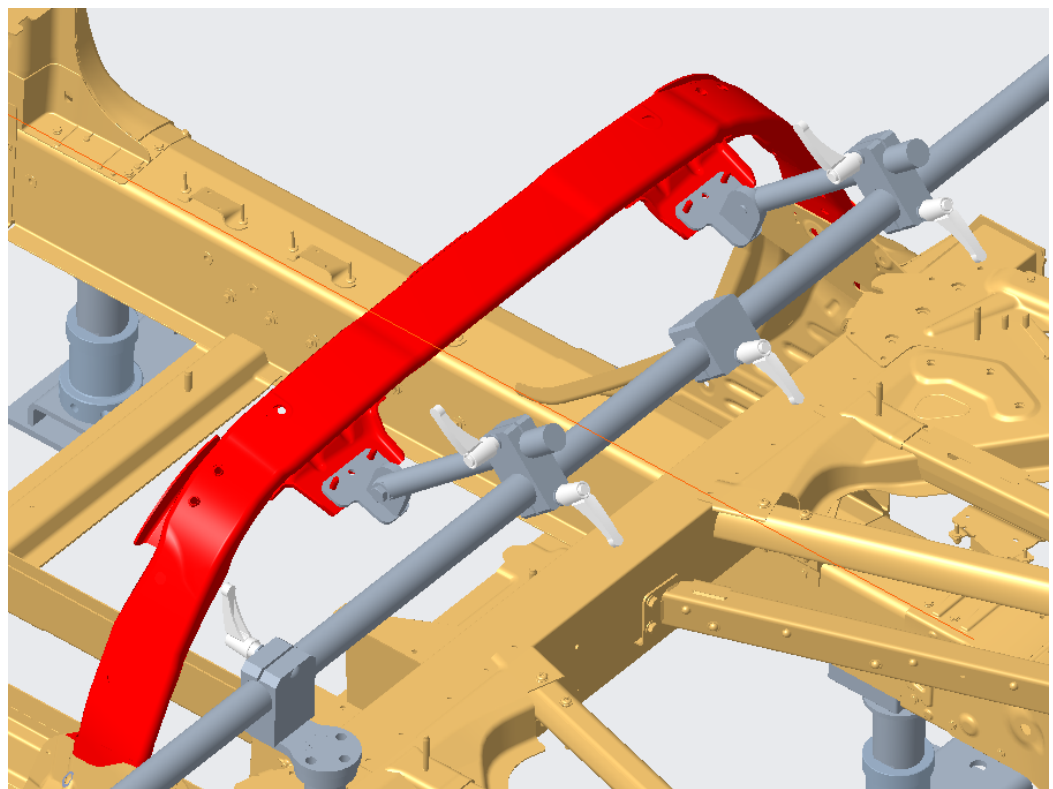


C8 Roof Bow



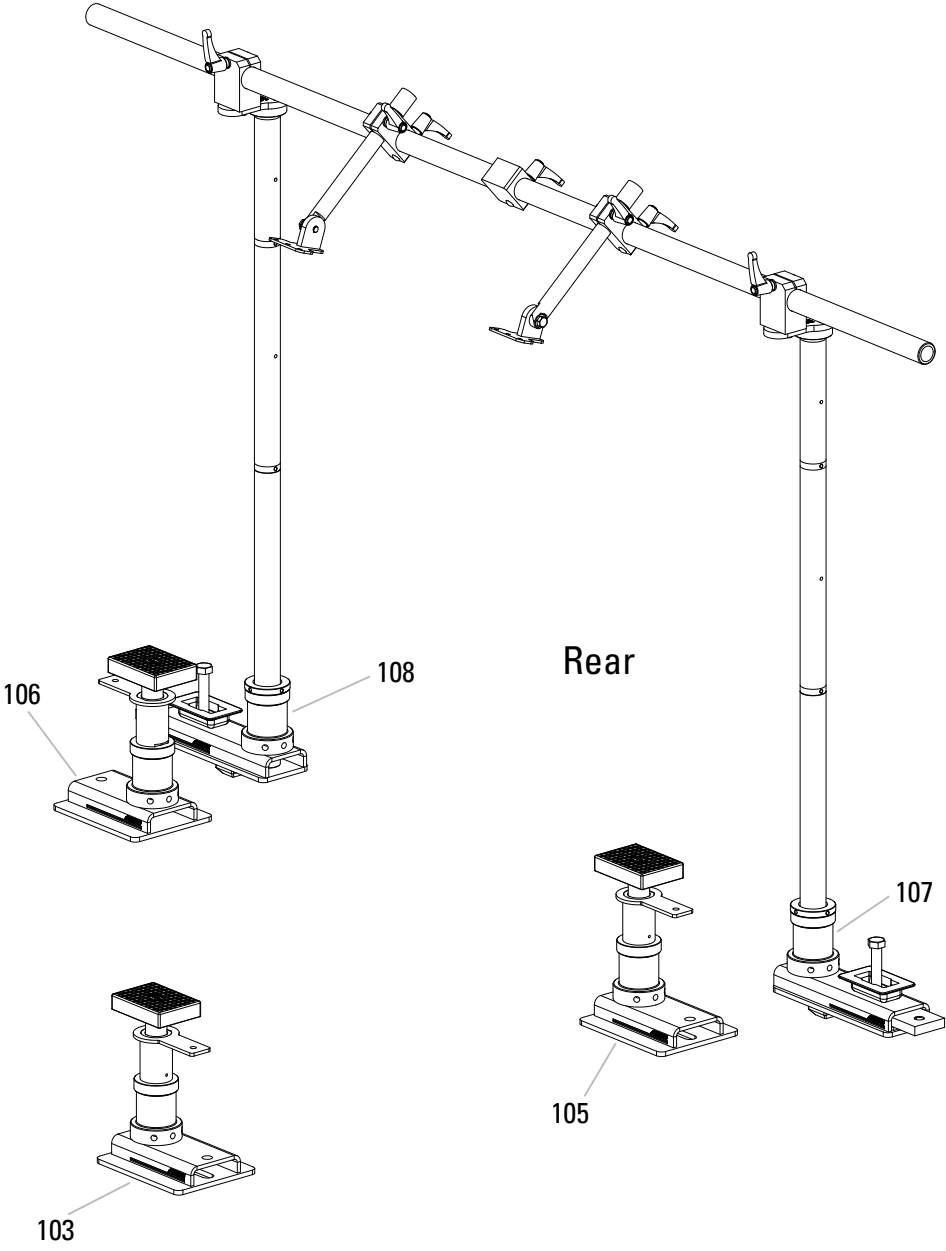
C8 Roof Bow
Detail - Top

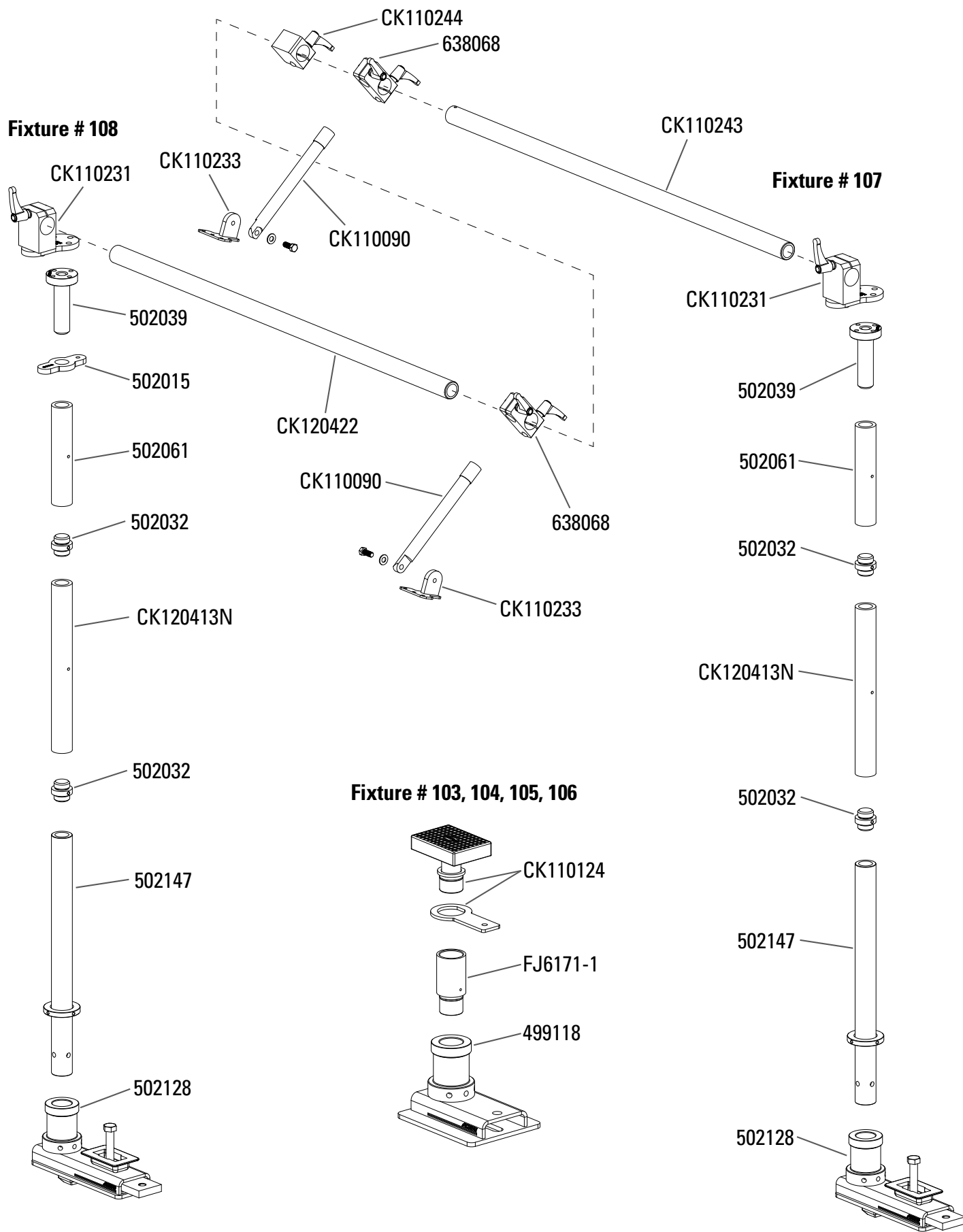
Front



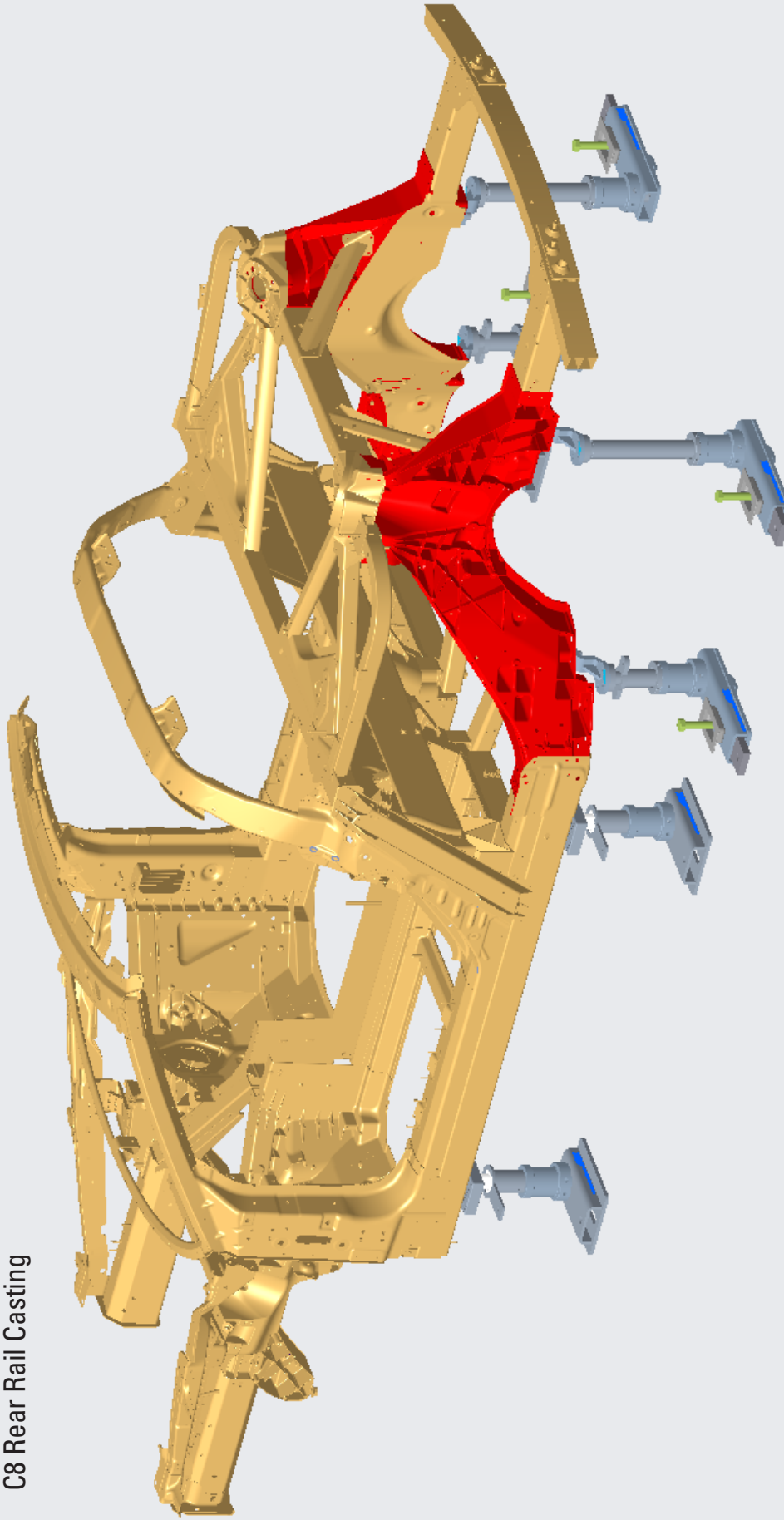
Rear

C8 Roof Bow

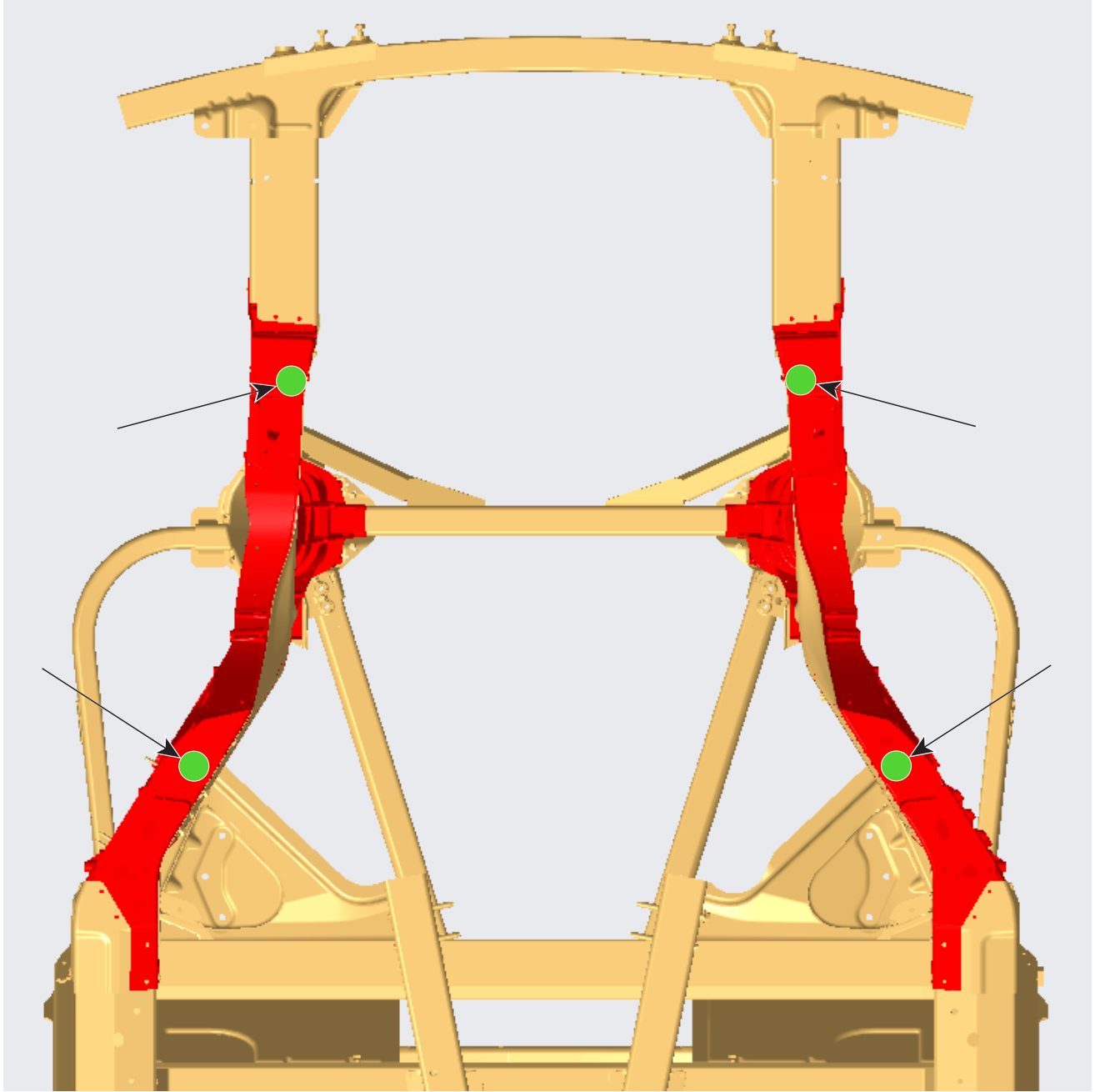




C8 Rear Rail Casting



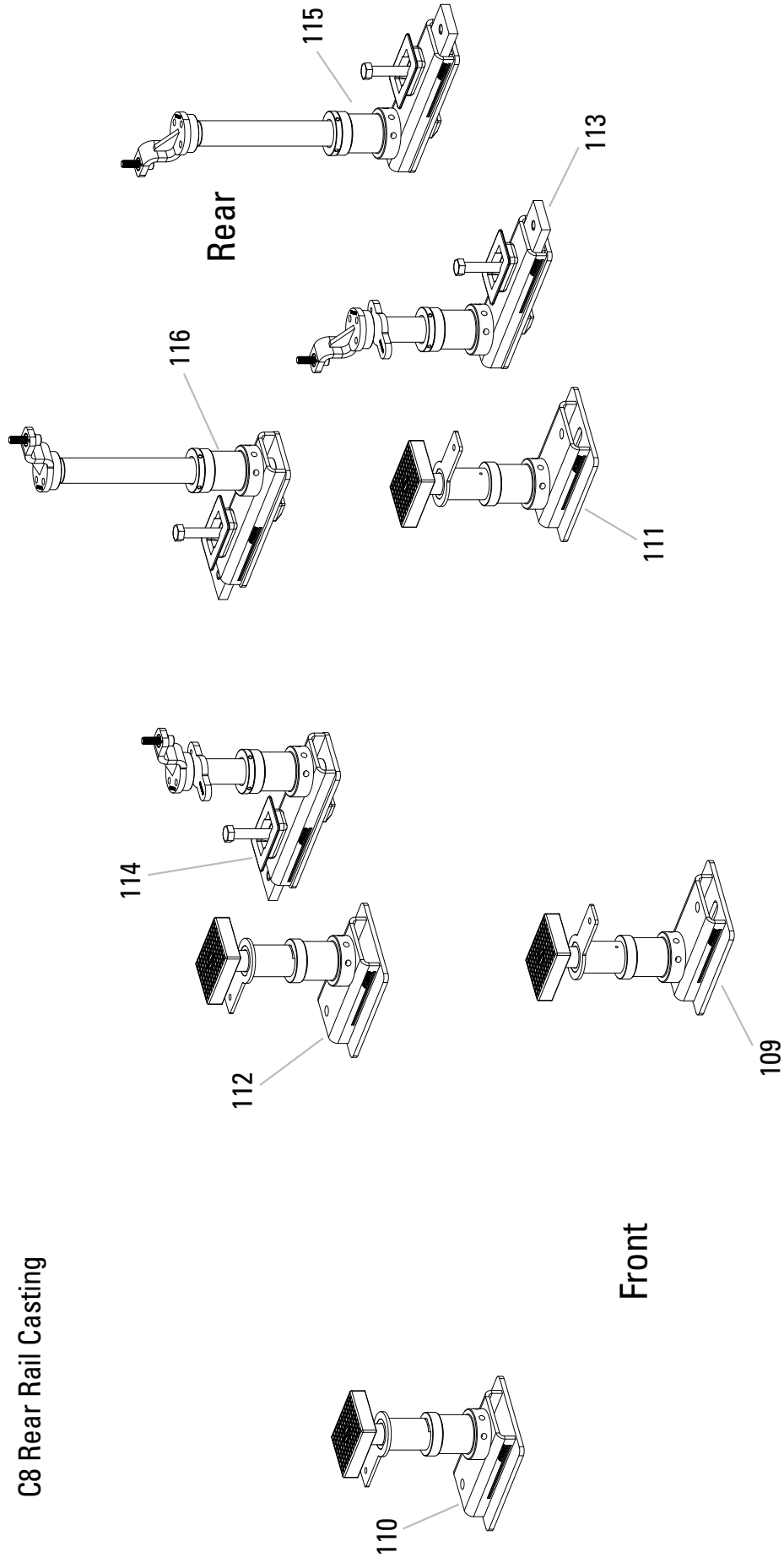
C8 Rear Rail Casting
Detail - Underbody



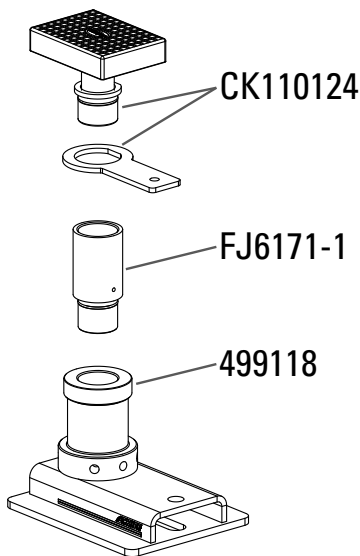
Rear

Front

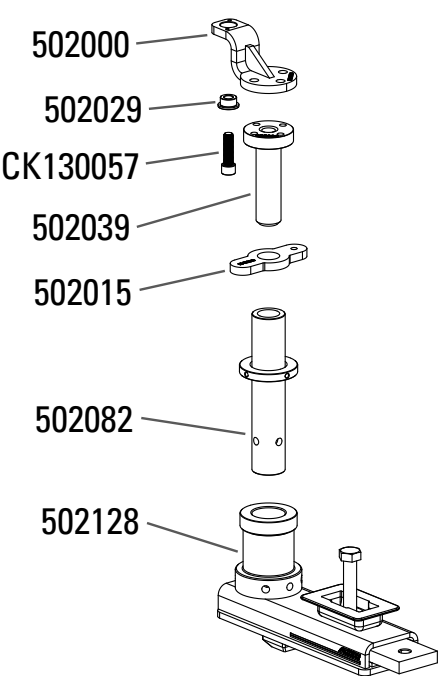
C8 Rear Rail Casting



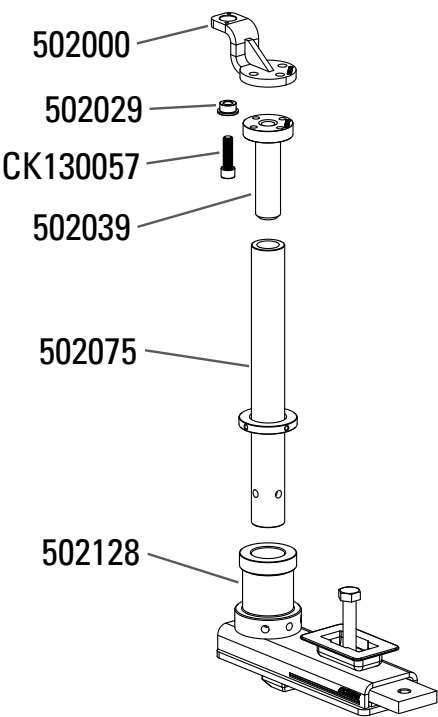
Fixture # 109, 110, 111, 112



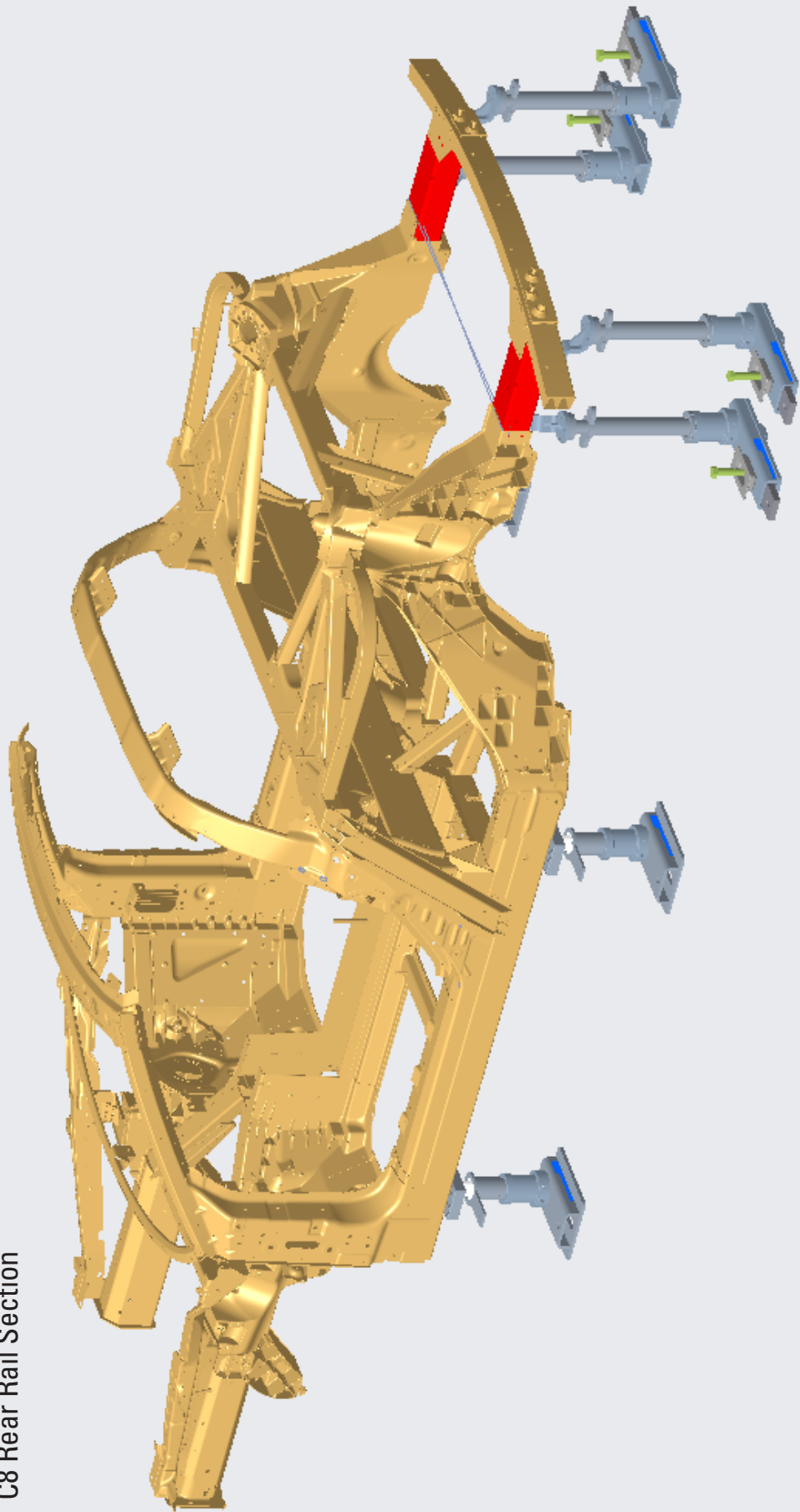
Fixture # 113, 114



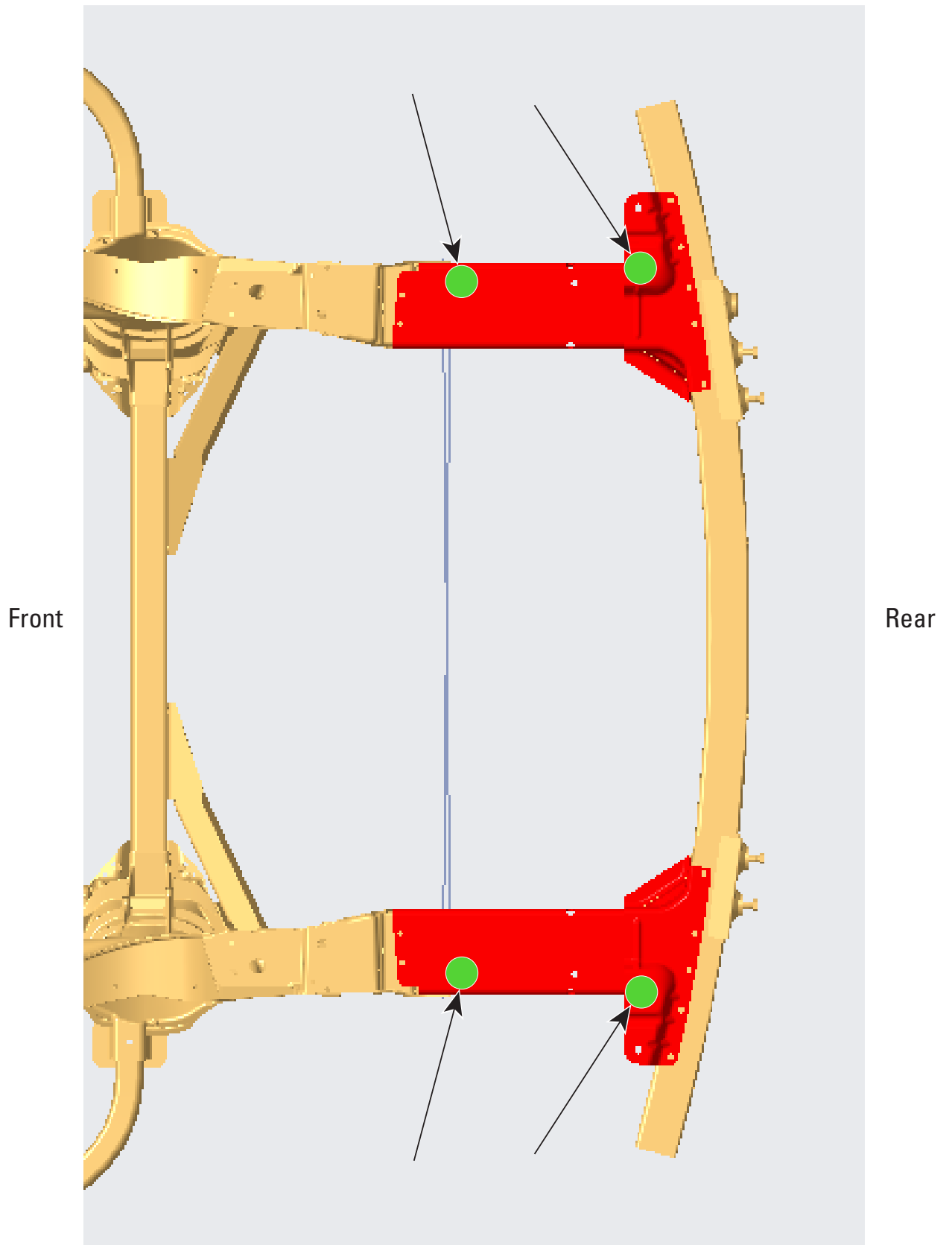
Fixture # 115, 116



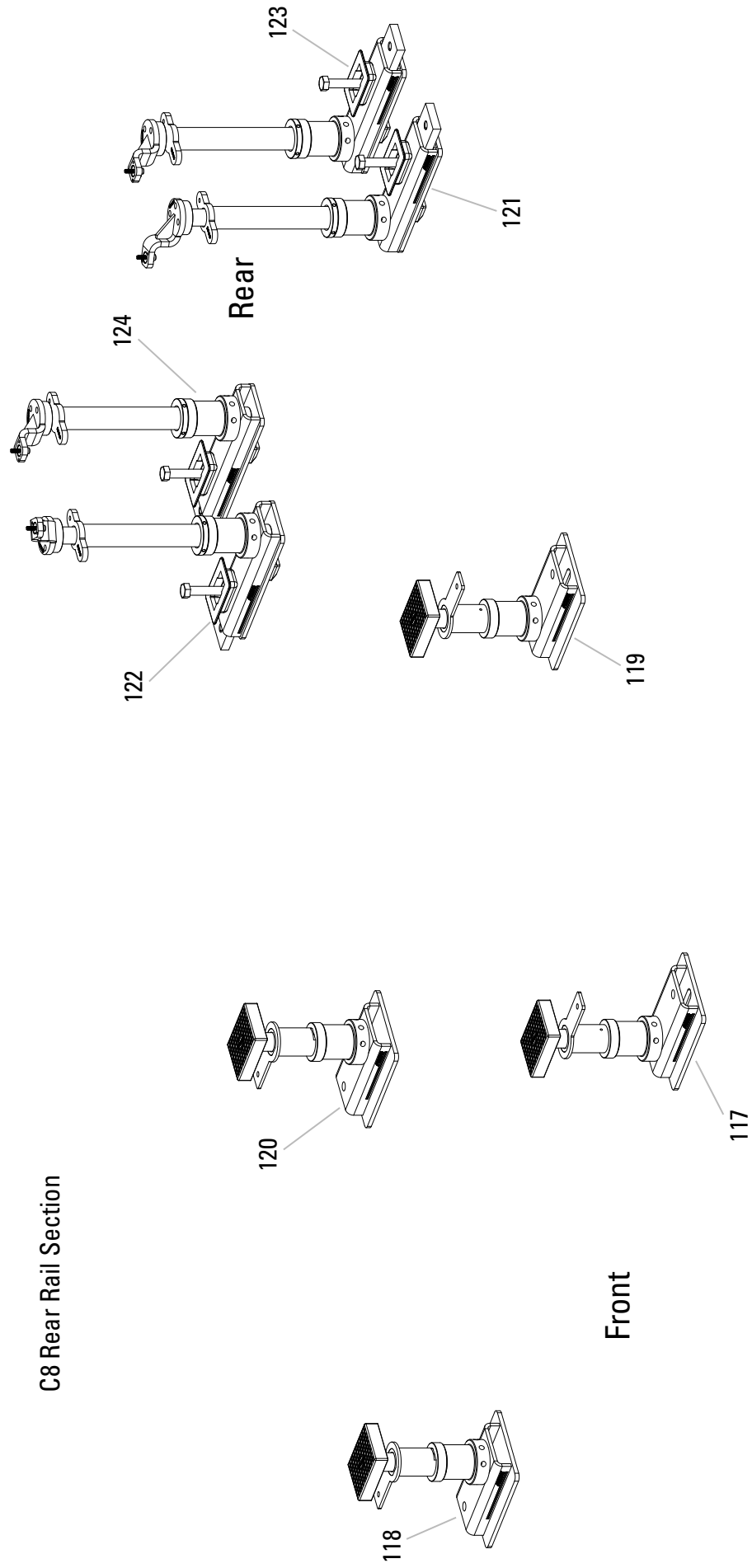
C8 Rear Rail Section



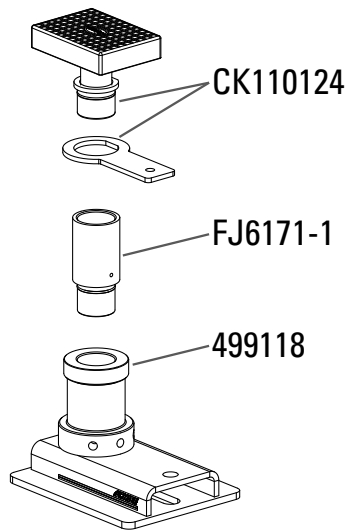
C8 Rear Rail Section
Detail - Underbody



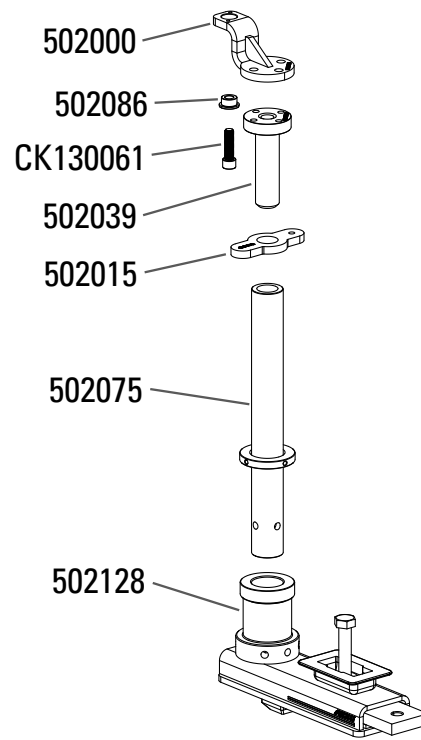
C8 Rear Rail Section



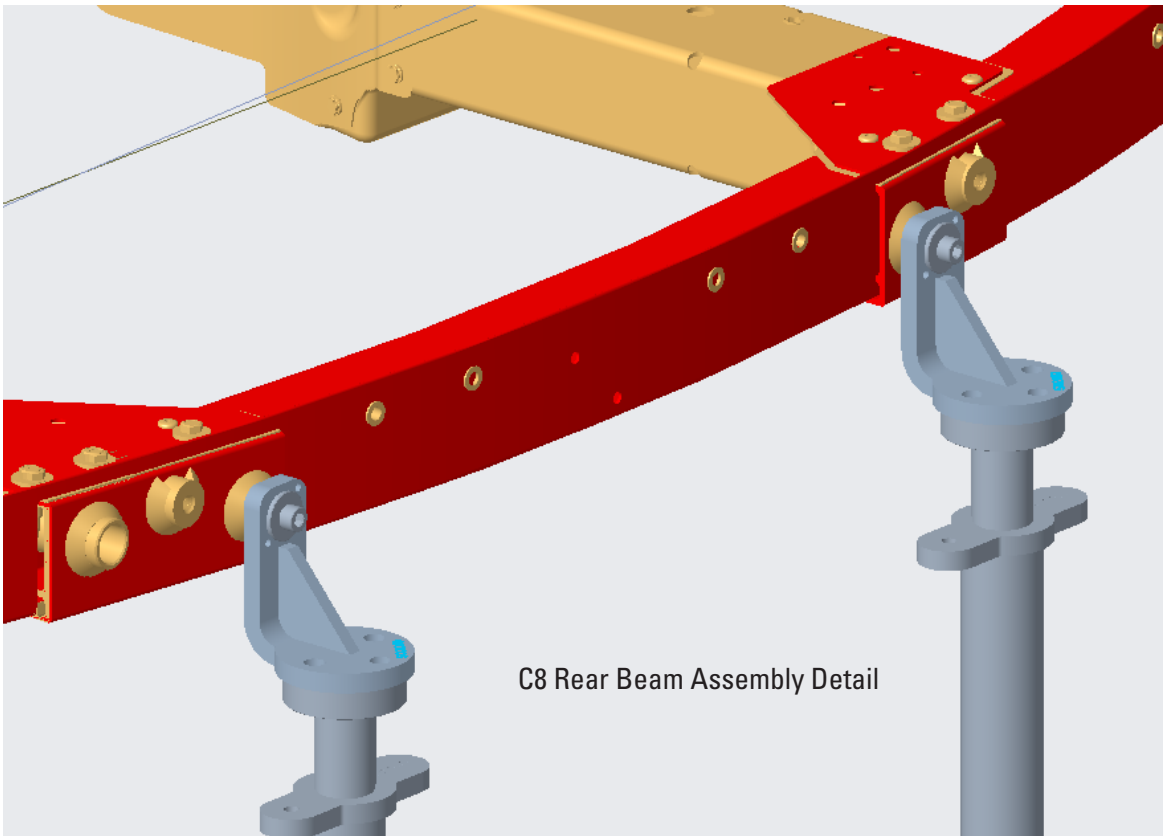
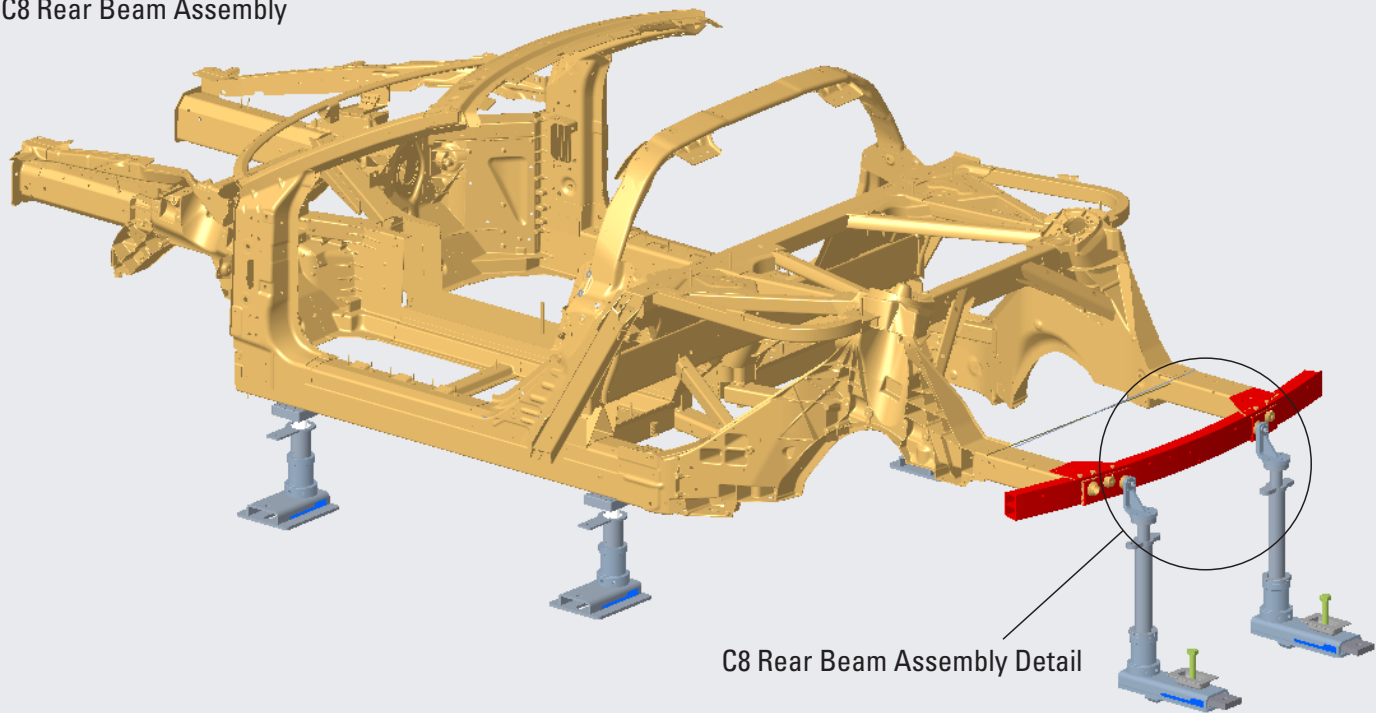
Fixture # 117, 118, 119, 120



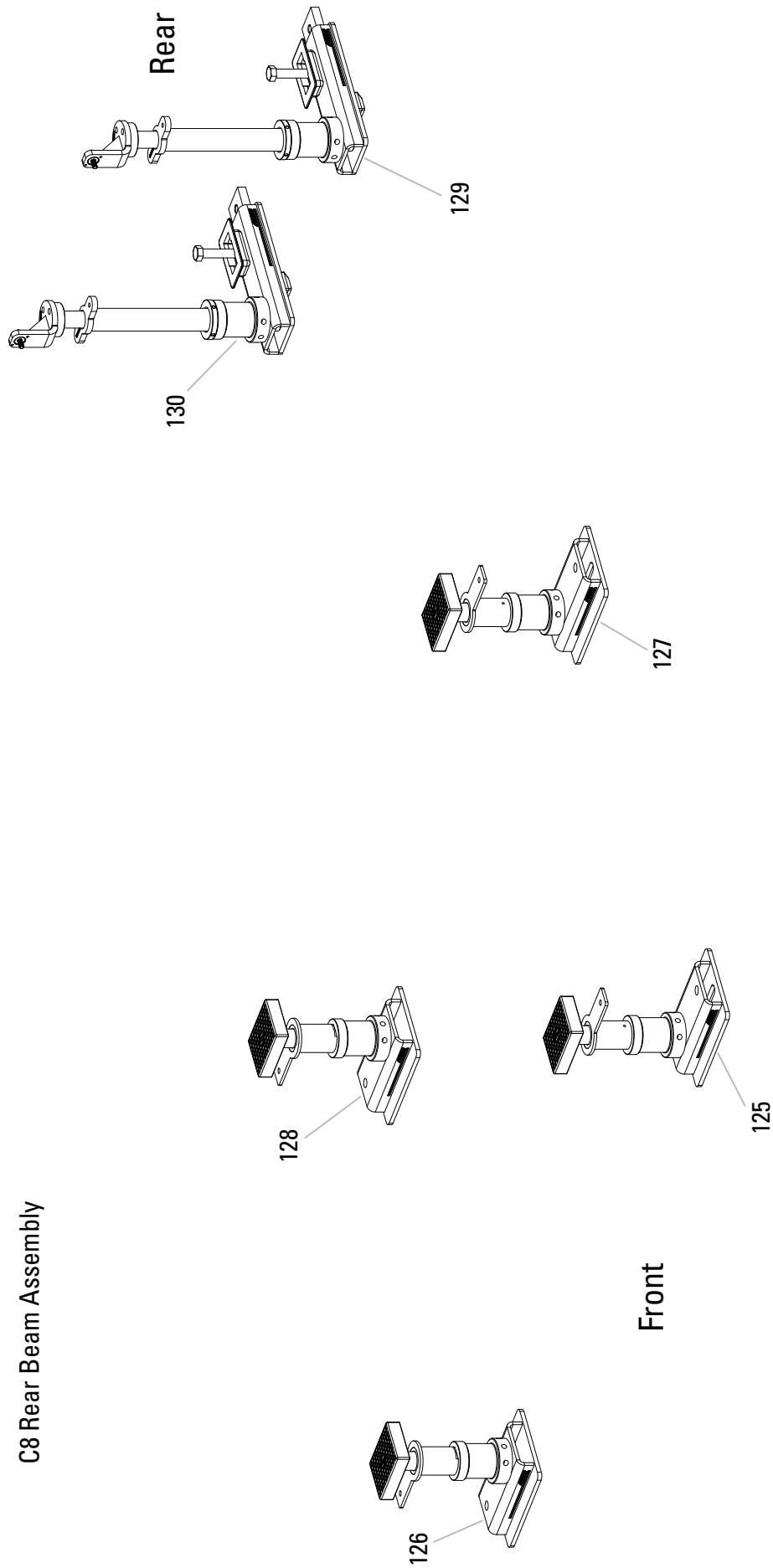
Fixture # 121, 122, 123, 124



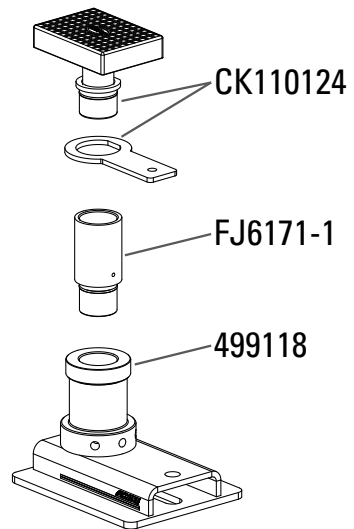
C8 Rear Beam Assembly



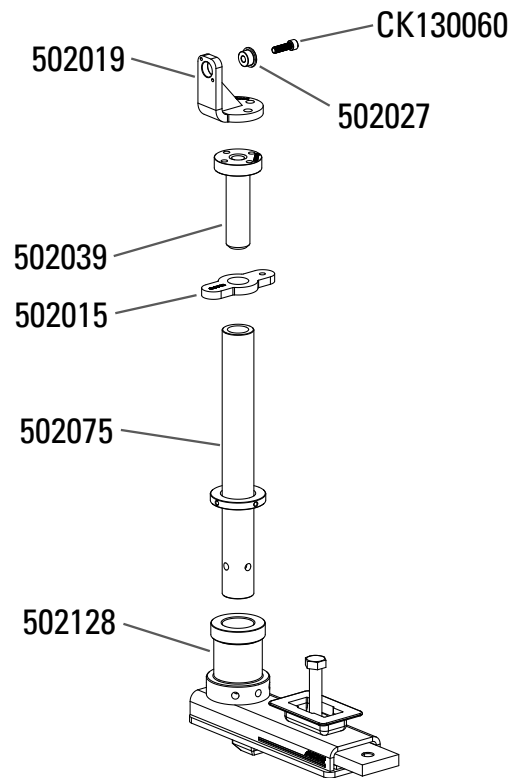
C8 Rear Beam Assembly



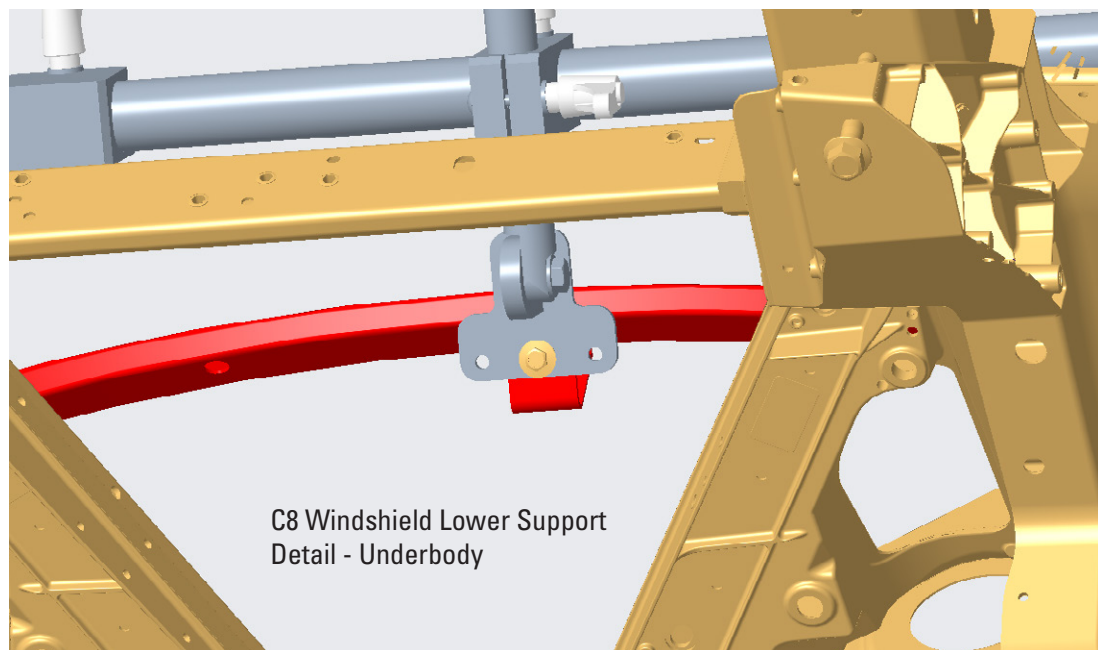
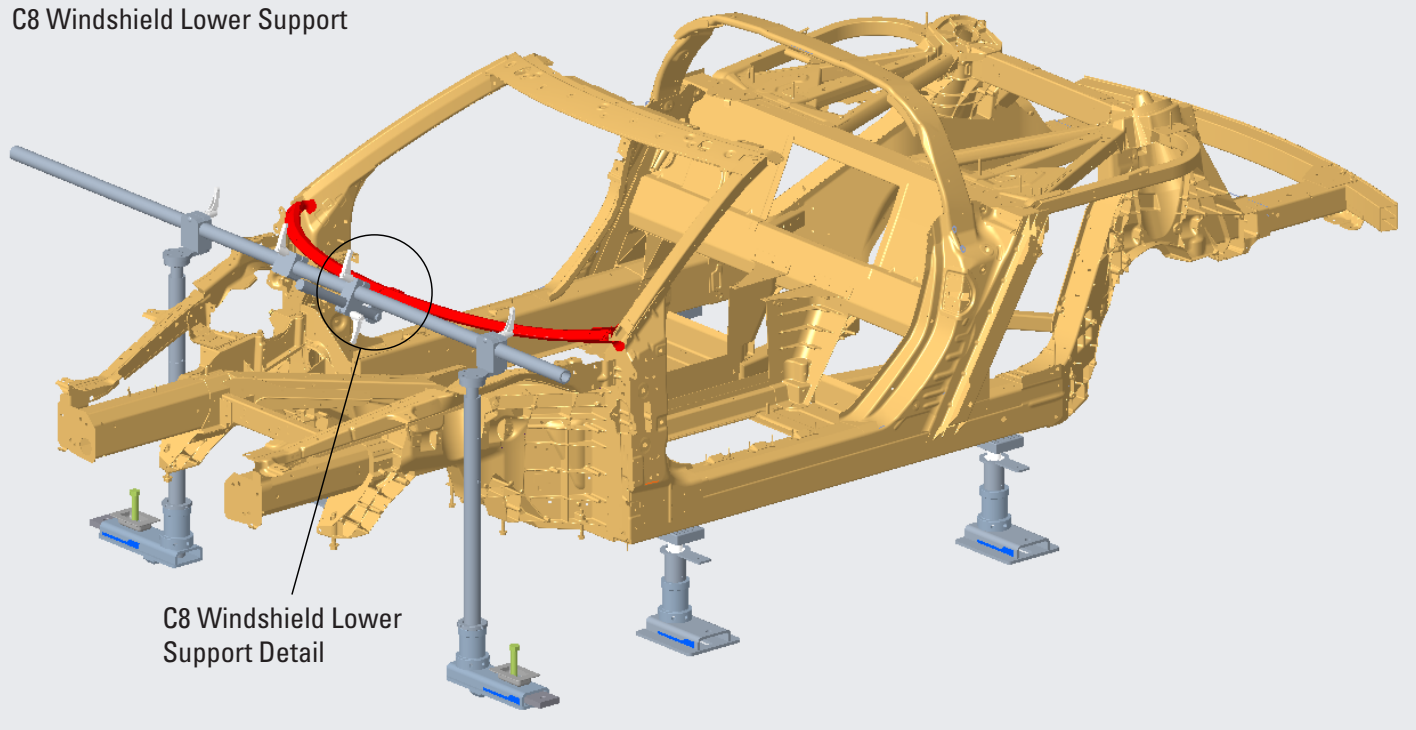
Fixture # 125, 126, 127, 128



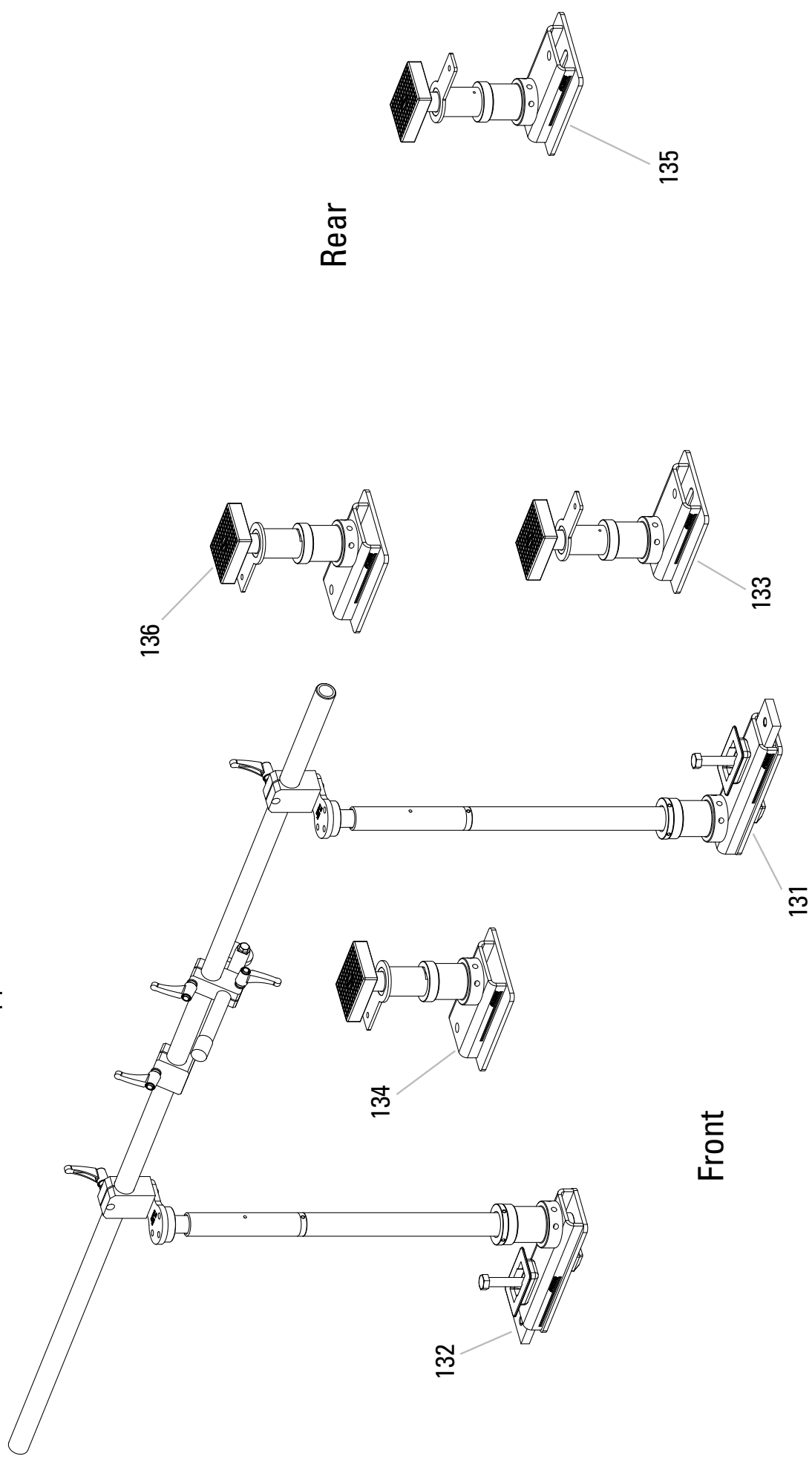
Fixture # 129, 130

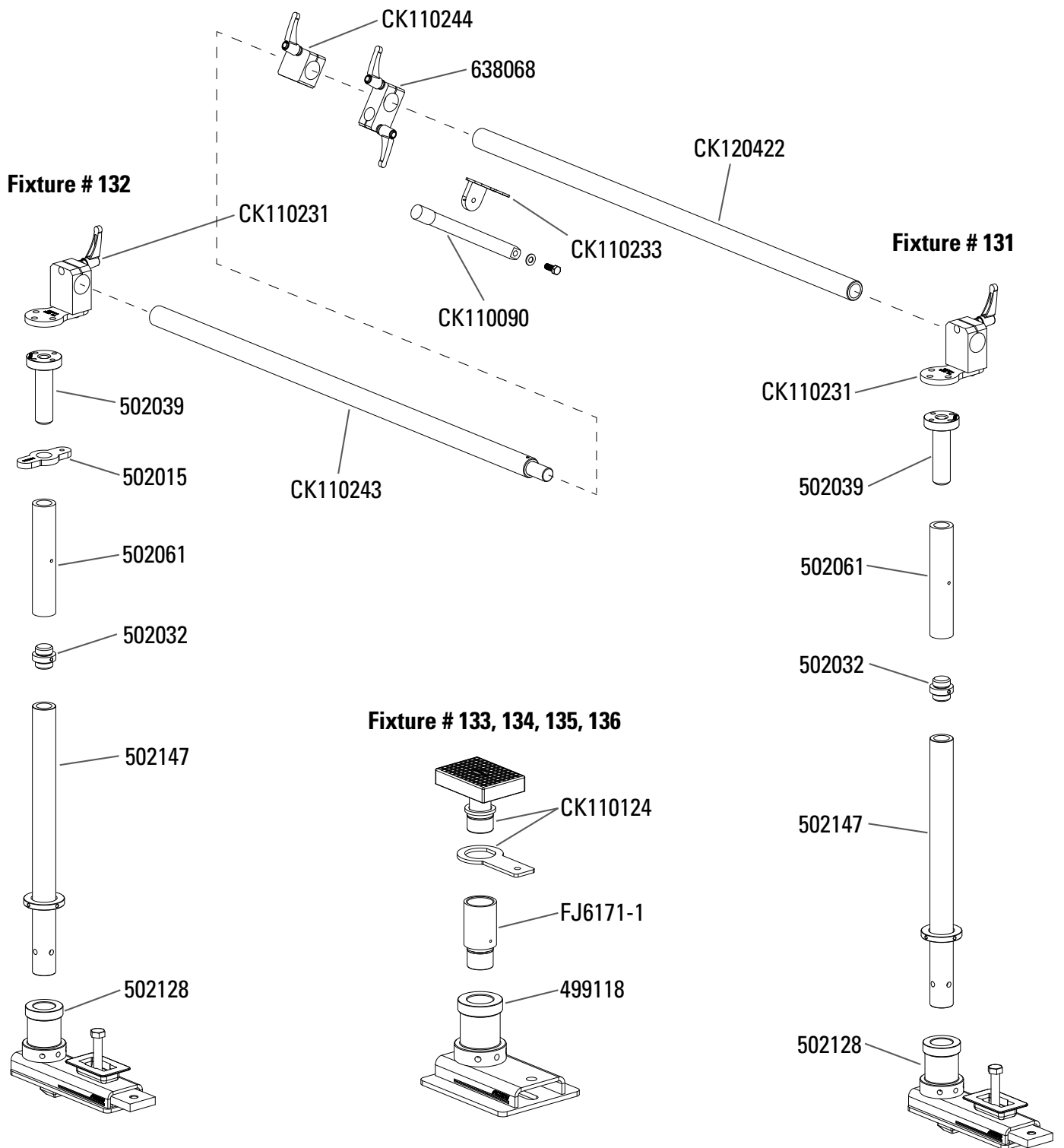


C8 Windshield Lower Support

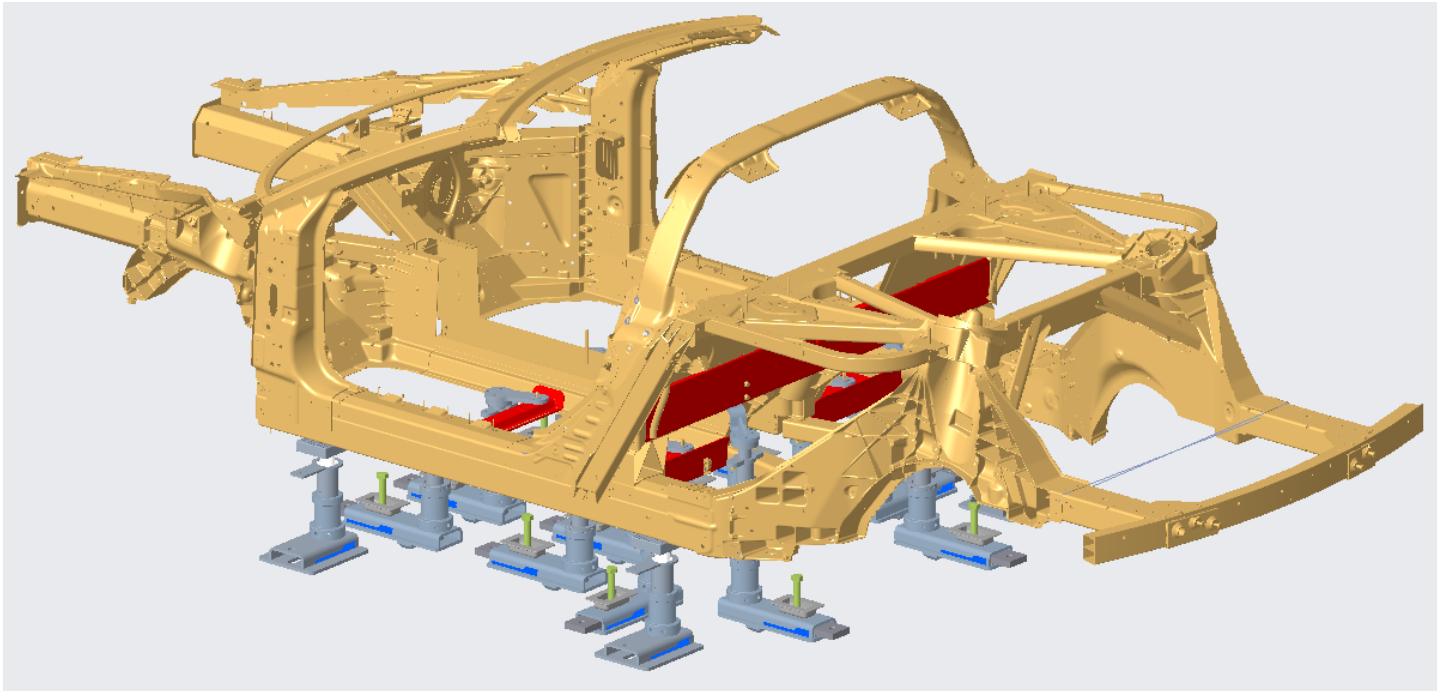
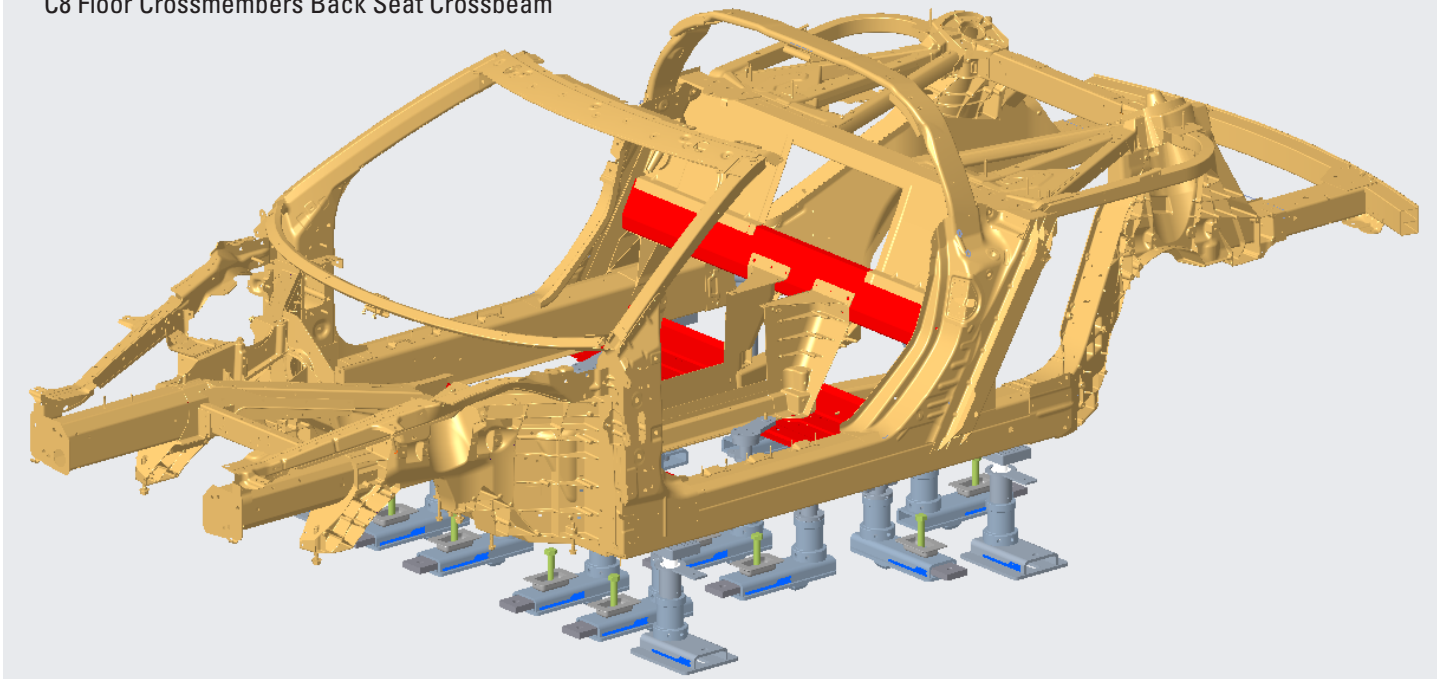


C8 Windshield Lower Support

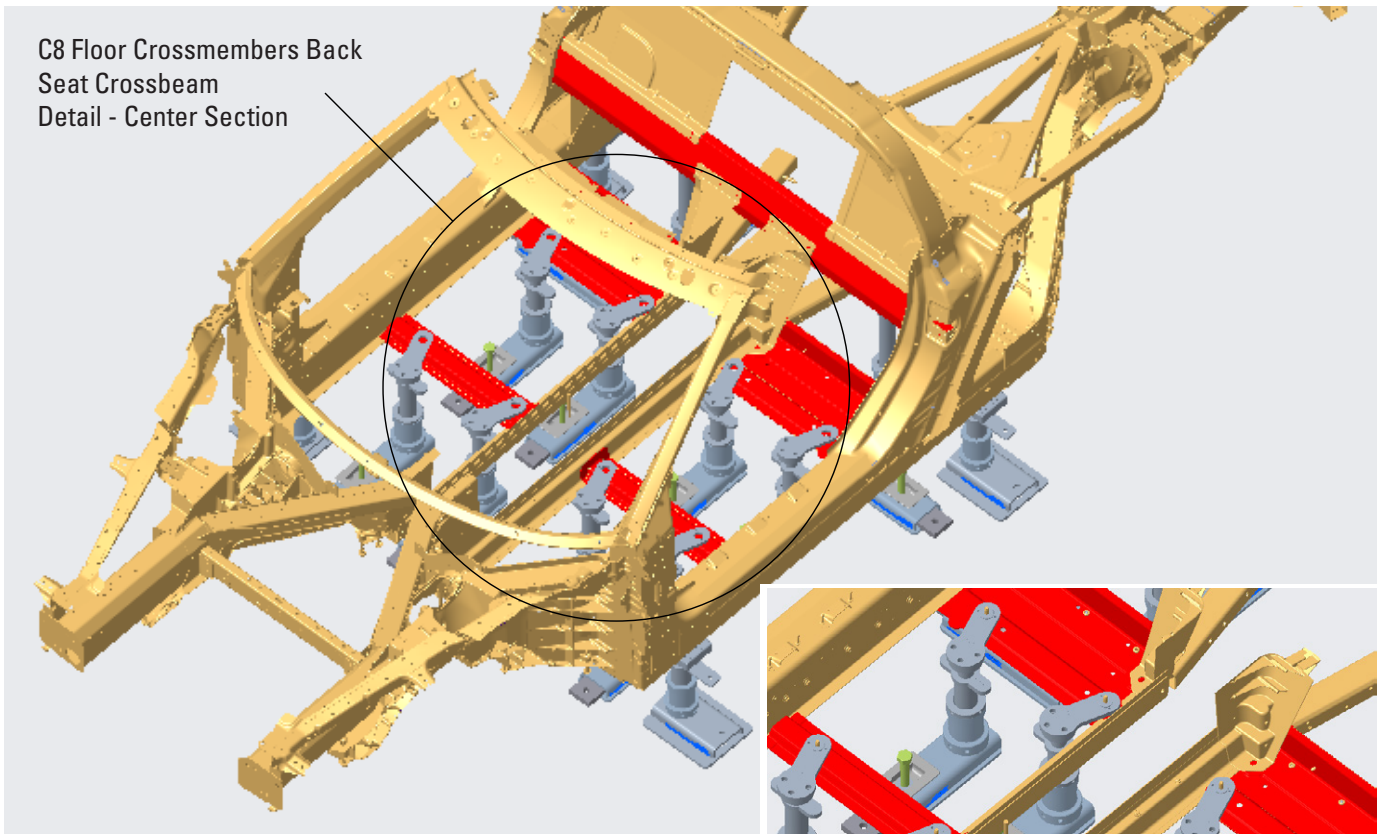




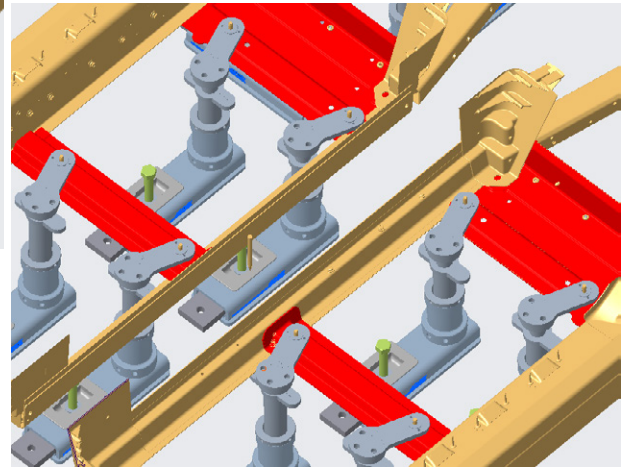
C8 Floor Crossmembers Back Seat Crossbeam



C8 Floor Crossmembers Back
Seat Crossbeam
Detail - Center Section



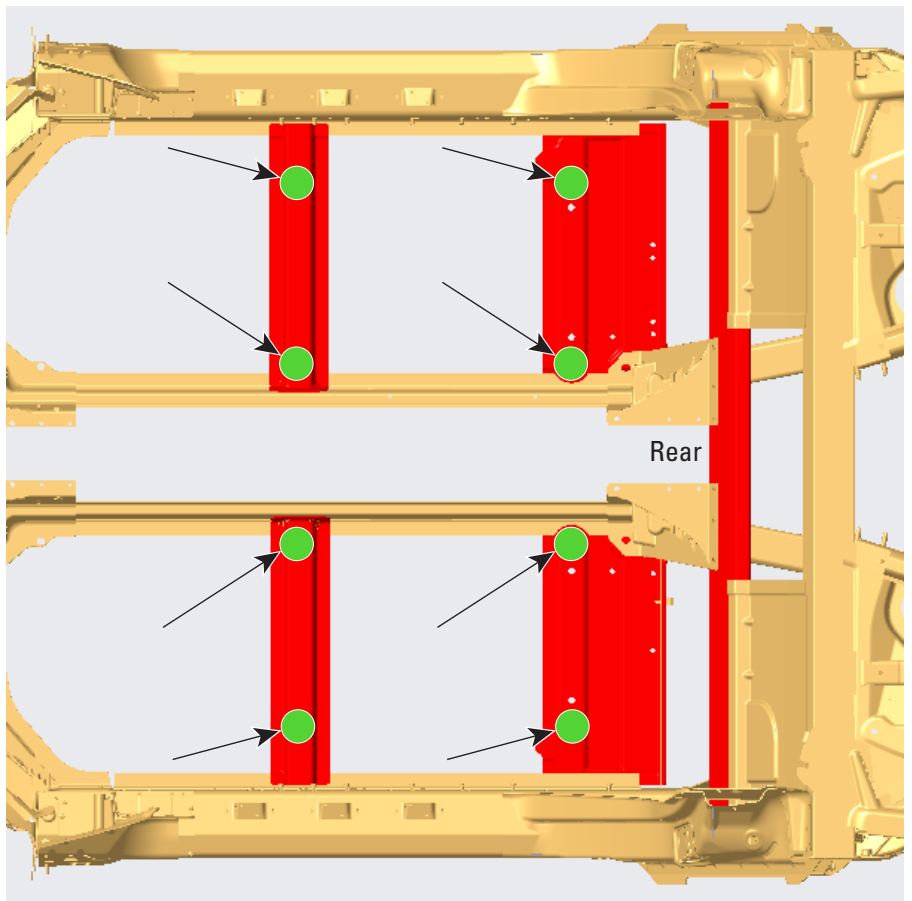
C8 Floor Crossmembers Back
Seat Crossbeam
Detail - Center Section



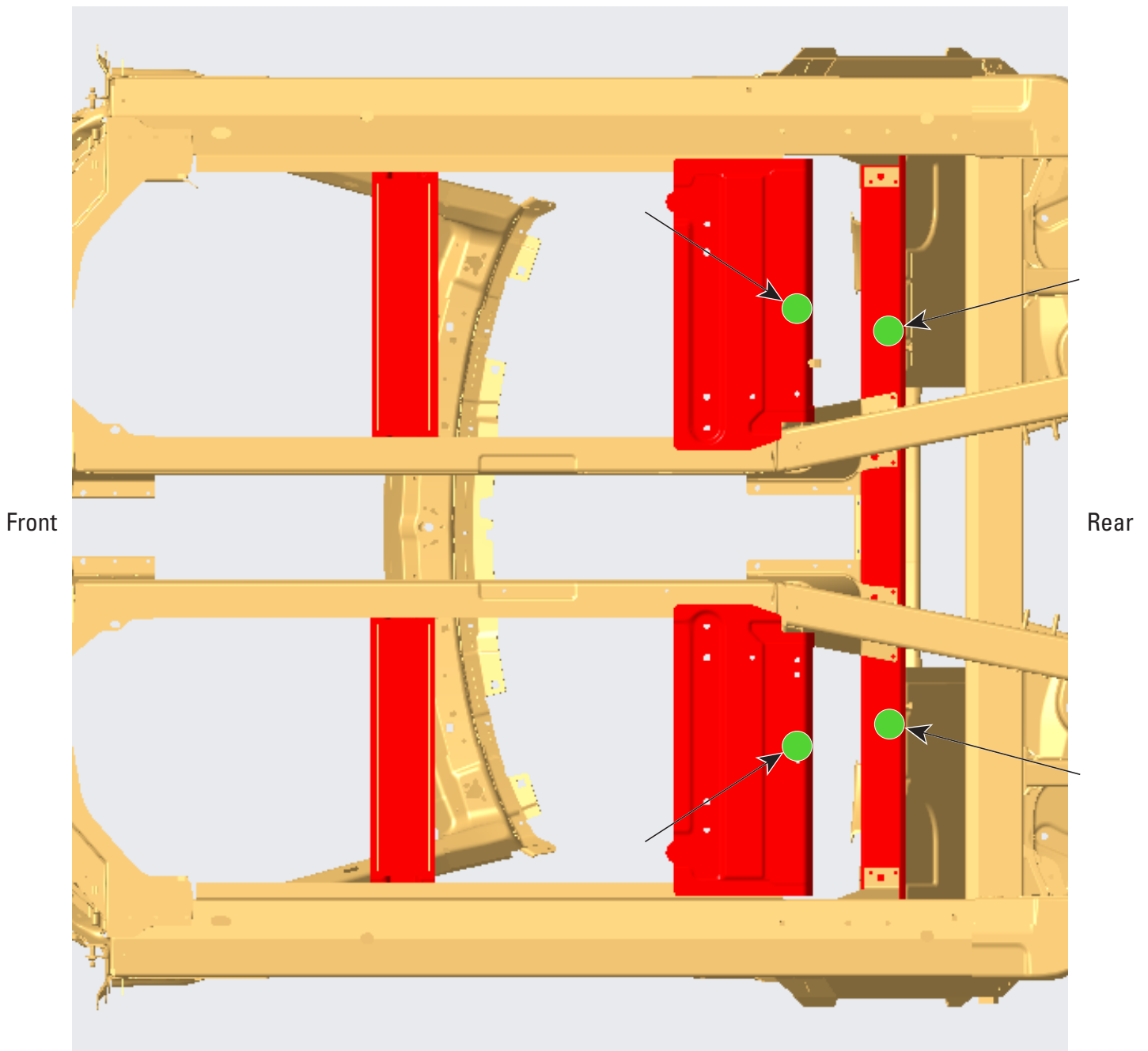
C8 Floor Crossmembers Back
Seat Crossbeam
Detail - Rear Section Top of Body

Front

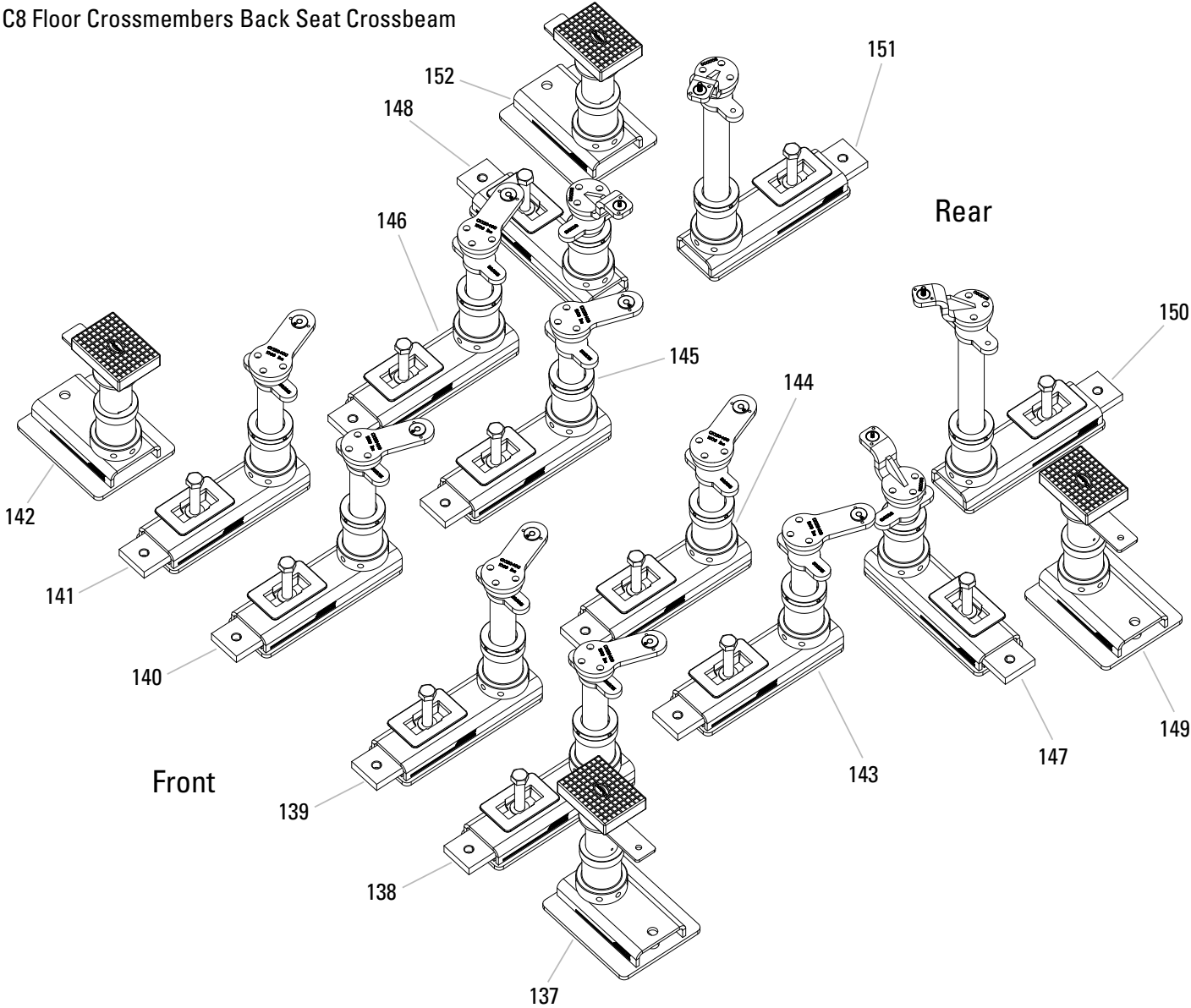
Rear



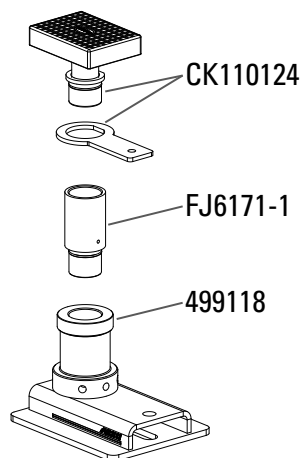
C8 Floor Crossmembers Back
Seat Crossbeam Detail
Rear Section - Underbody



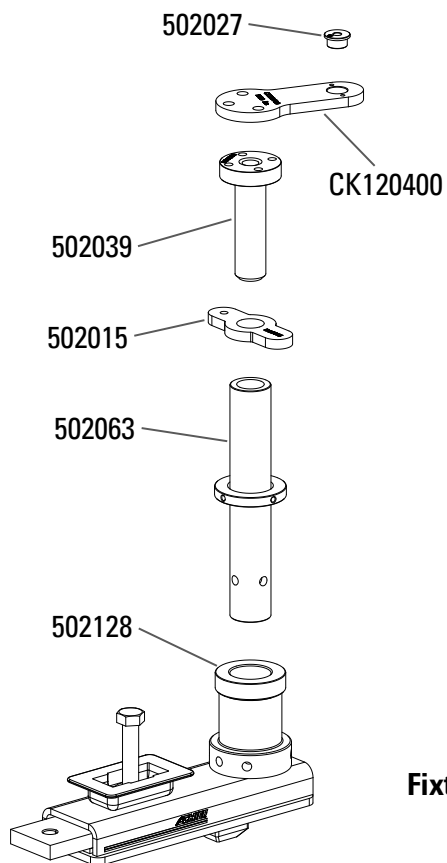
C8 Floor Crossmembers Back Seat Crossbeam



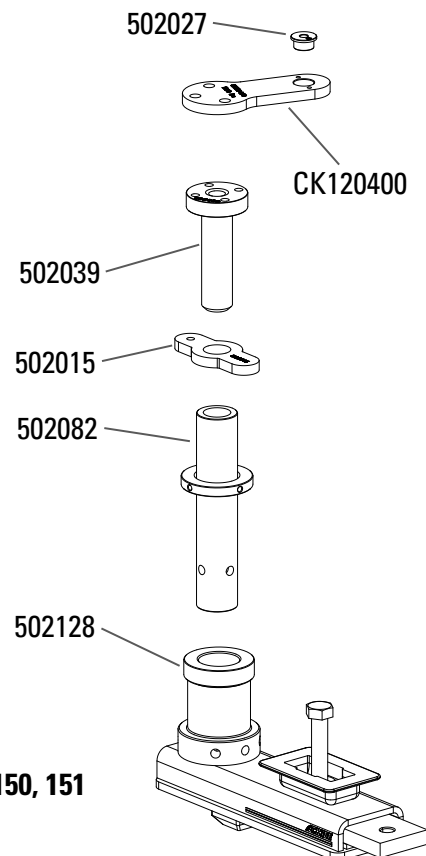
Fixture # 137, 142, 149, 152



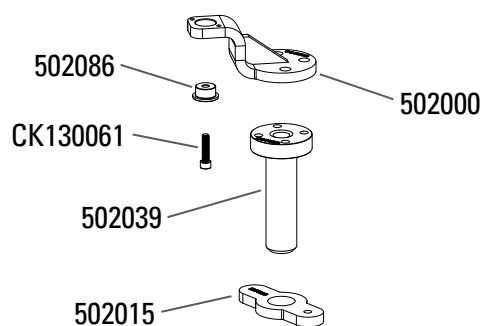
Fixture # 138, 139, 140, 141



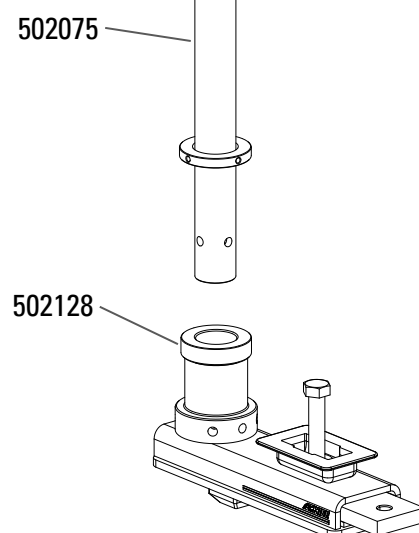
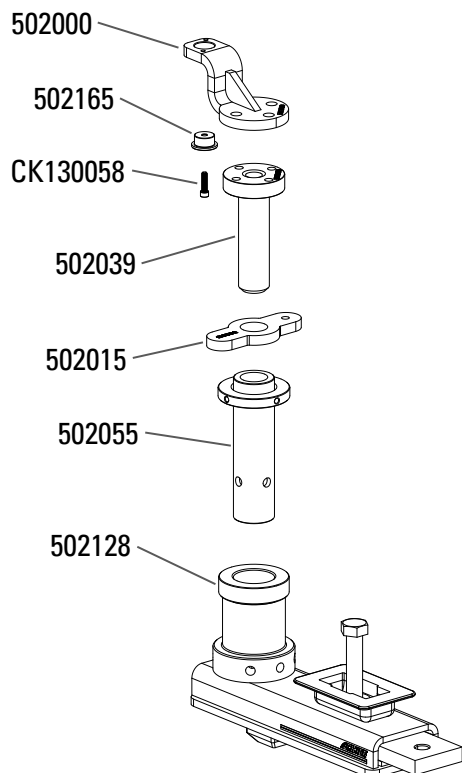
Fixture # 143, 144, 145, 146



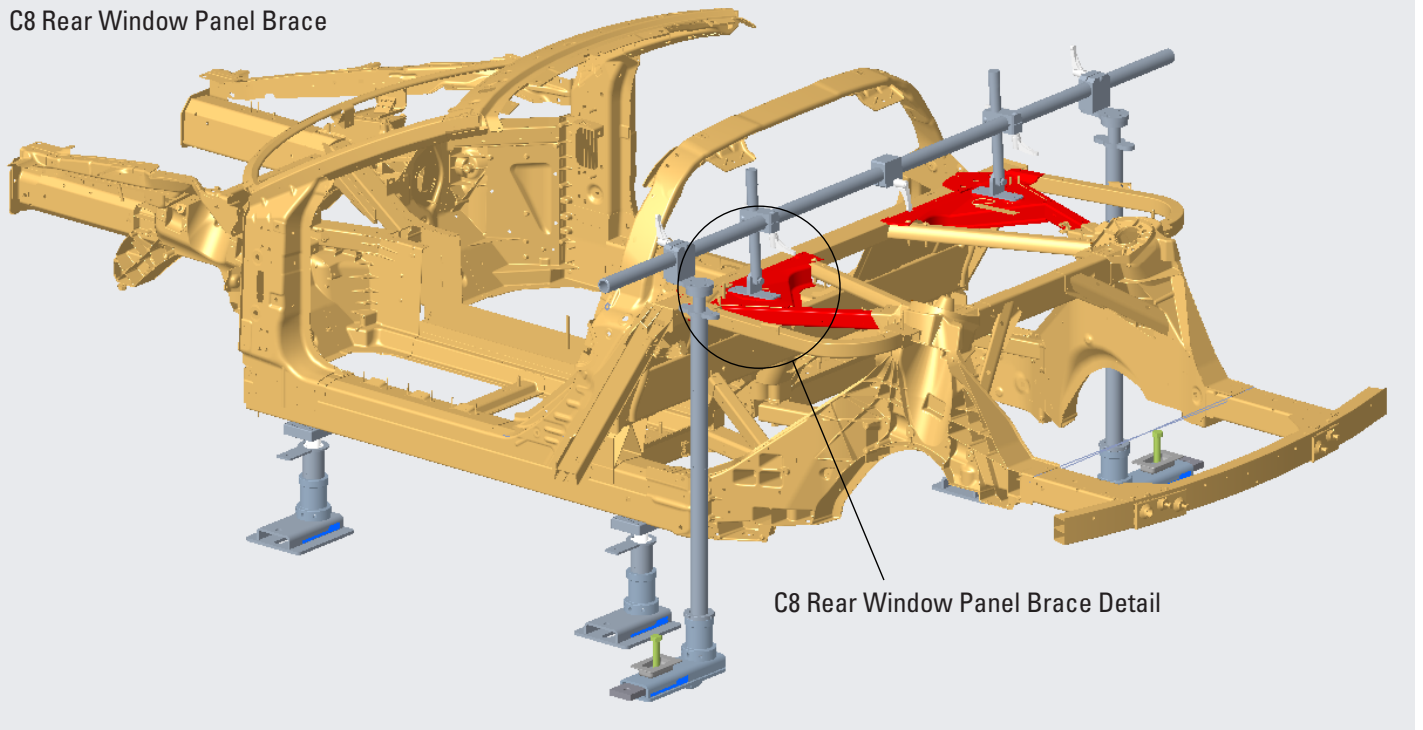
Fixture # 150, 151



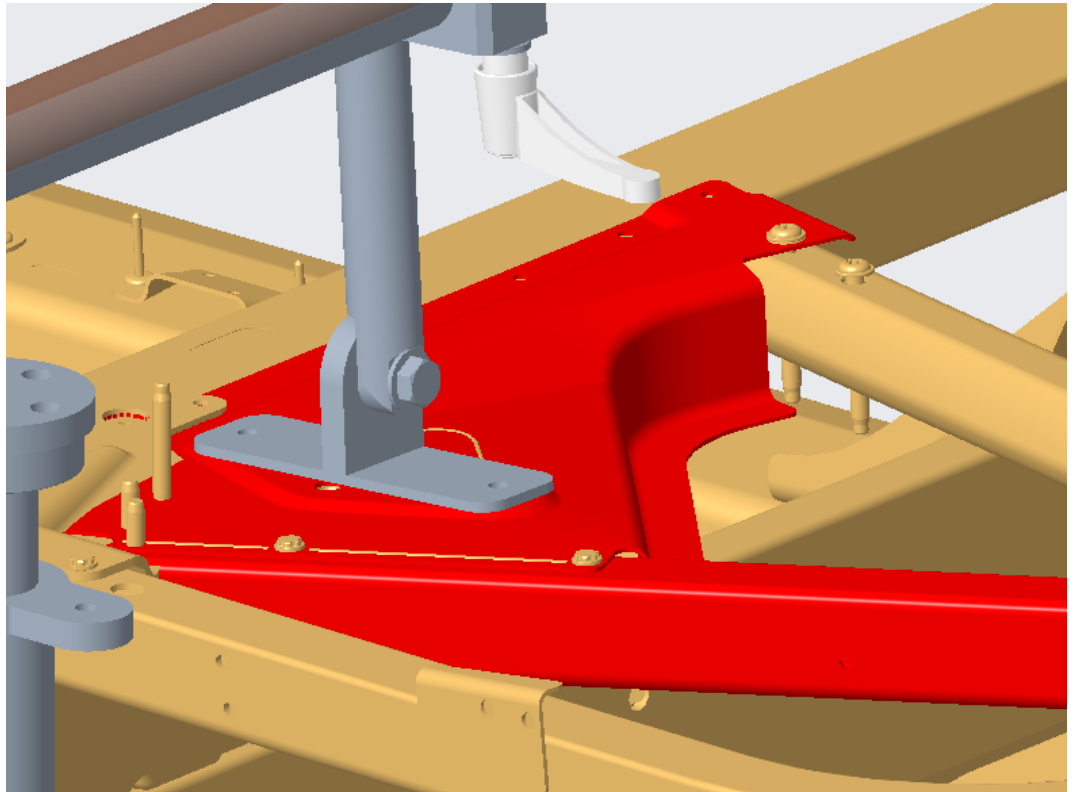
Fixture # 147, 148



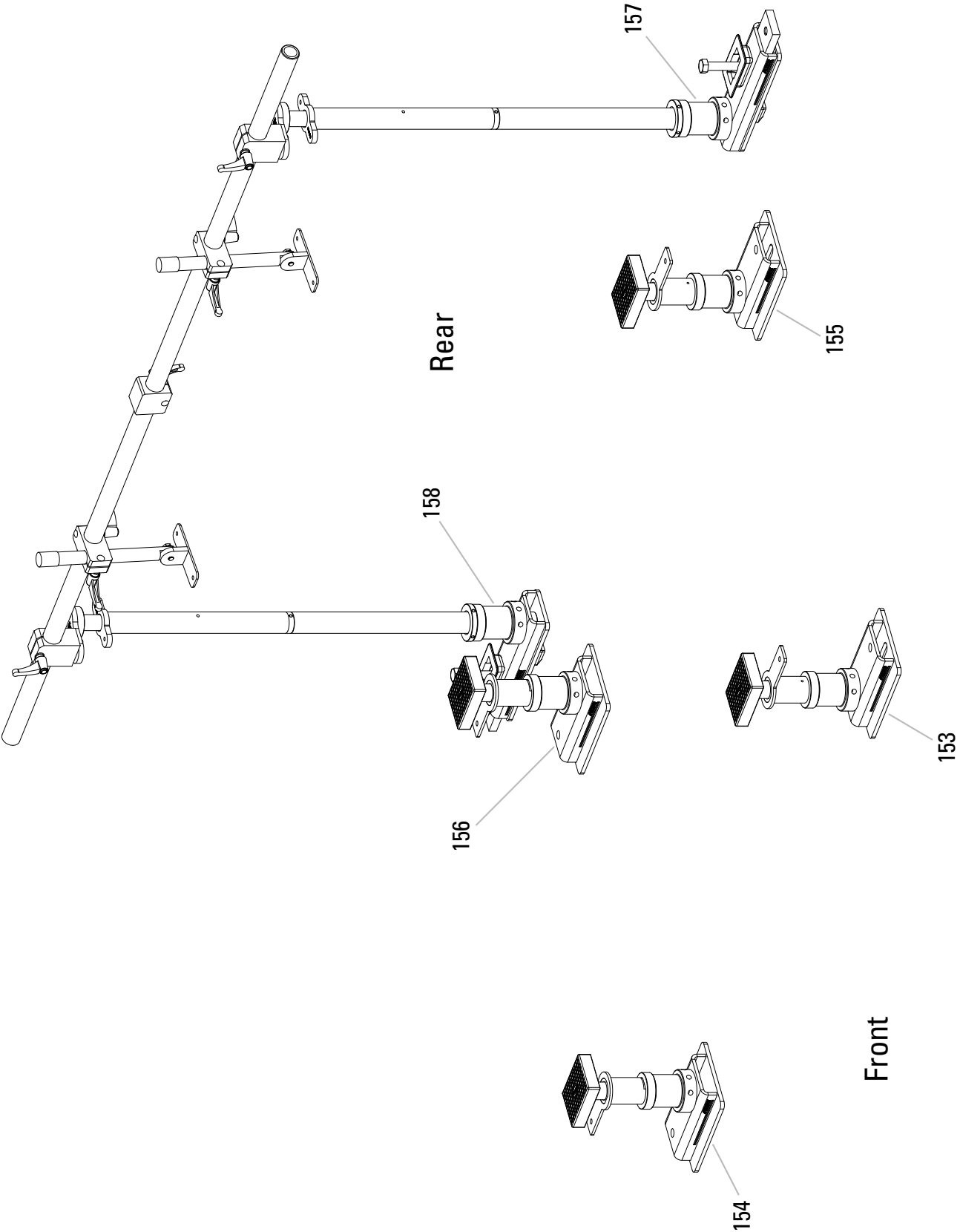
C8 Rear Window Panel Brace

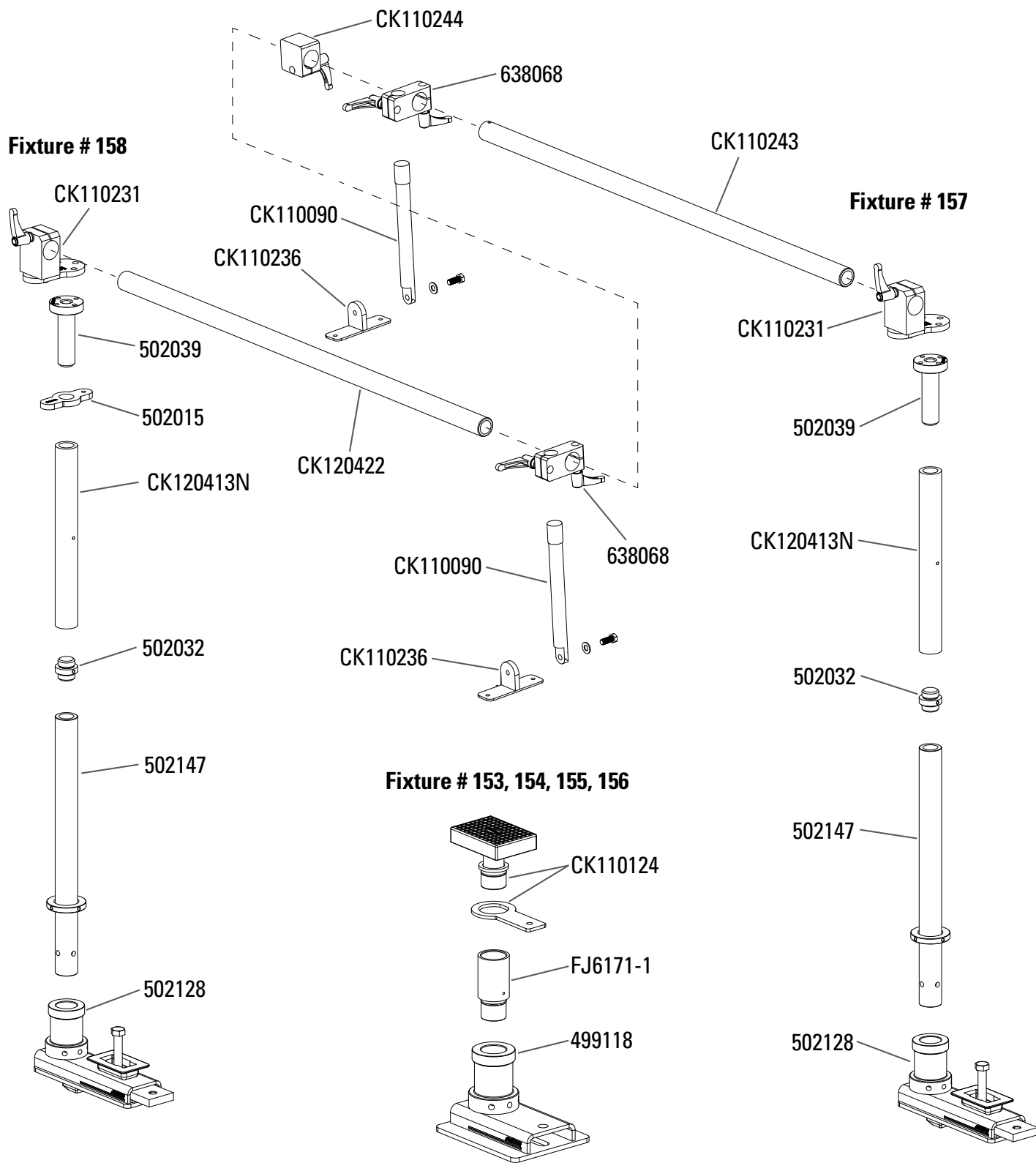


C8 Rear Window Panel
Brace Detail



C8 Rear Window Panel Brace







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