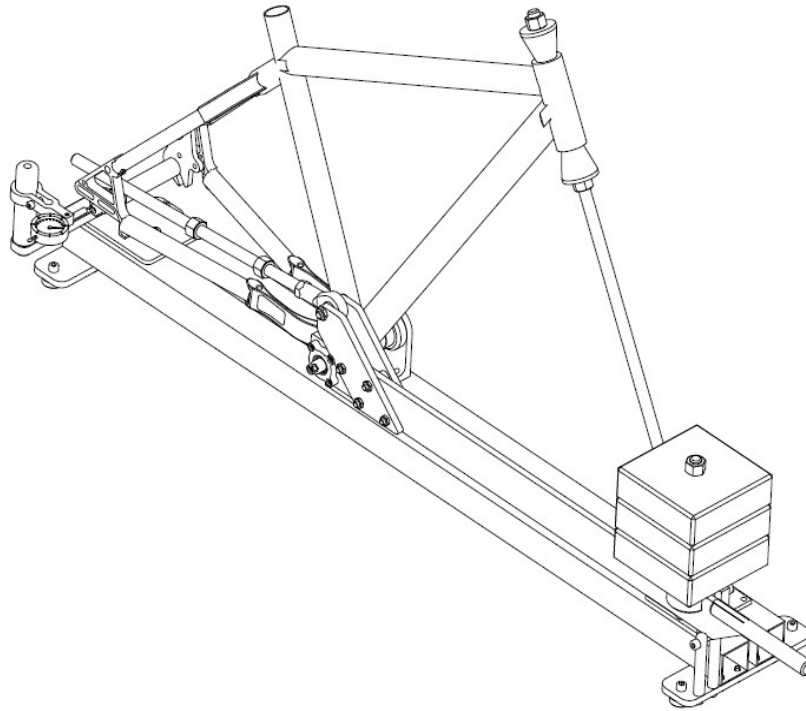




## **Frame Stiffness Test Fixture Assembly Instructions**

*The frame stiffness test is applicable when Rohloff® Internal Gear Hubs (IGH) are used in conjunction with Gates Carbon Drive™ systems.*





Please verify that all parts are accounted for and read this manual carefully and completely before starting assembling and measuring. This test is required before an OEM can purchase Rohloff® IGH parts for use with the Gates Carbon Drive™ belt drive system. If you have any questions, please contact one of our regional testing facilities or email inquiries to [info@carbondrive.net](mailto:info@carbondrive.net)

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## REQUIRED TOOLS

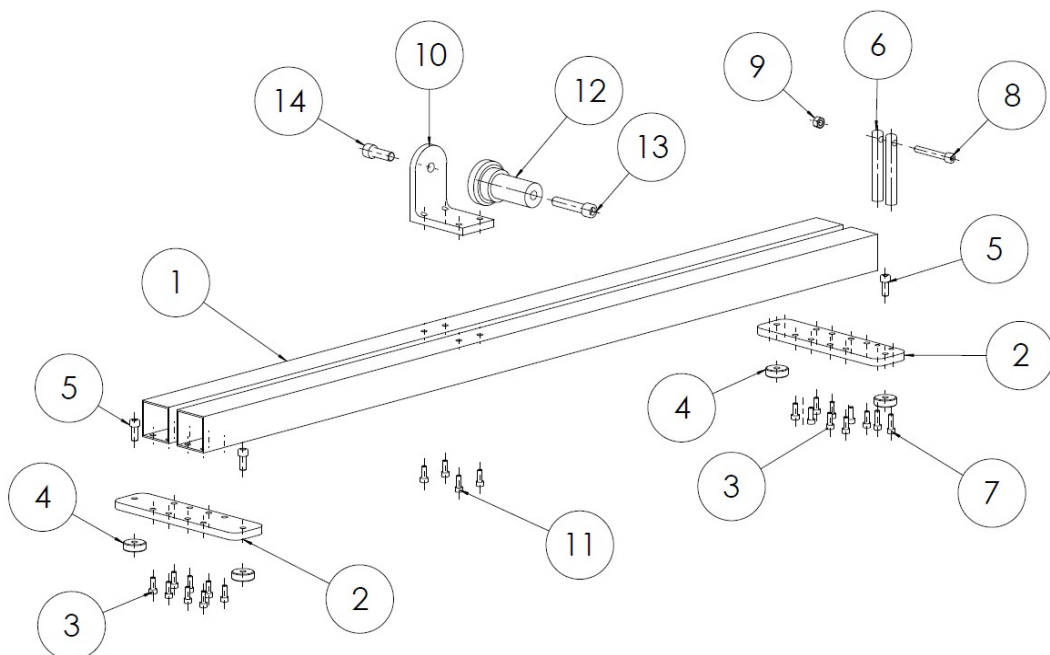
The following tools are required to assemble the frame stiffness test and to proceed with the measurements. The tools are not included in delivery.

**Allen key 2.5, 4, 5, 6, 8, 10, 12**

**Flat wrench 8, 24**

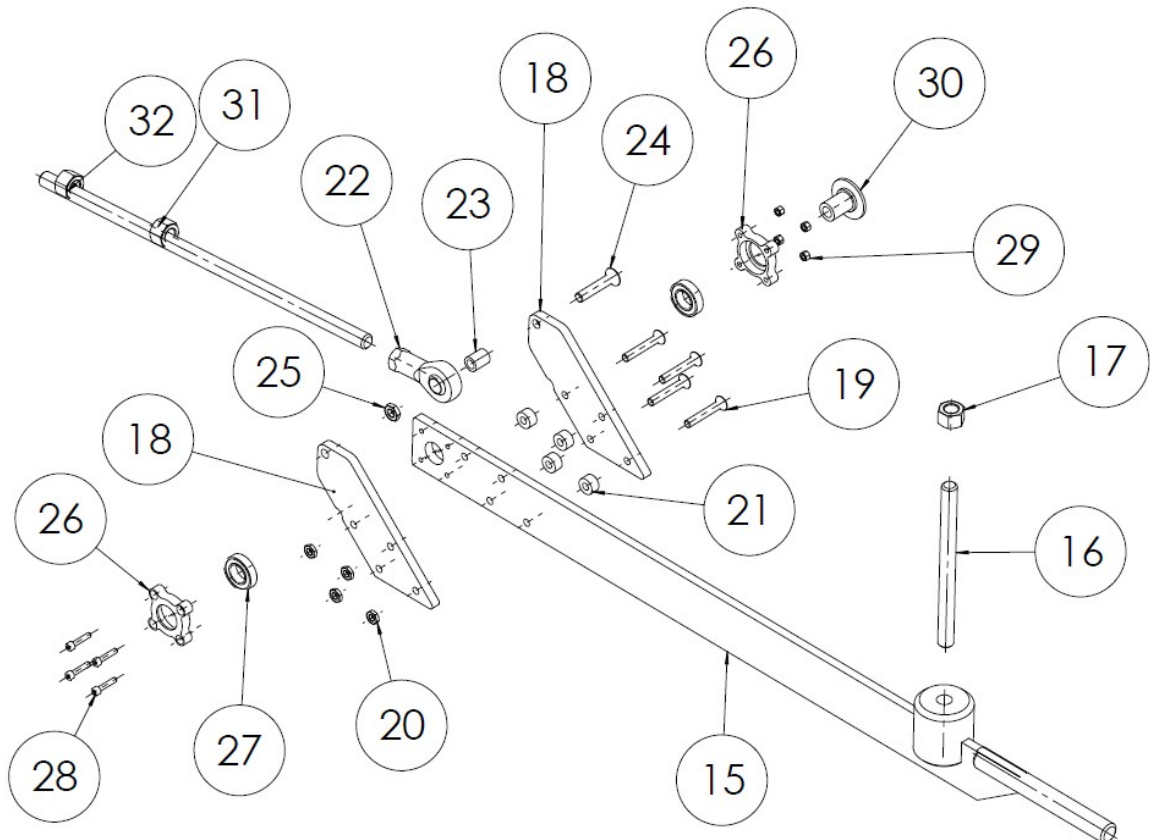
## PARTS LIST: MAINFRAME (1 - 14)

Assembly	Position	Description	Detail	Specification	Pcs.
Mainframe	1	frame		rectangular tube	2
	2	footplate			2
	3	screw	M6 x 14 mm	DIN 912	16
	4	pad		machined alloy	4
	5	screw	M8 x 18 mm	DIN 912	4
	6	safety direction		machined alloy	2
	7	screw	M6 x 20 mm	DIN 912	2
	8	Safety bolt	M8 x 60 mm	DIN 912	1
	9	nut	M8	DIN 934	1
	10	angle plate			1
	11	screw	M8 x 12 mm	DIN 912	4
	12	bottom bracket seat		machined steel	1
	13	screw	M12 x 60 mm	DIN 912	1
	14	screw	M12 x 35 mm	DIN 912	1



# PARTS LIST: LEVER SYSTEM (15 - 32)

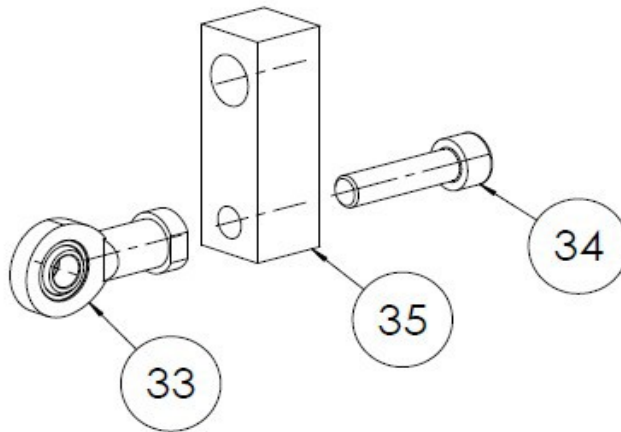
Assembly	Position	Description	Detail	Specification	Pcs.
Lever System	15	lever			1
	16	thread rod	M16 x 200mm		1
	17	nut	M 16	DIN 934	1
	18	joint bearing plate			2
	19	screw	M8 x 50 mm	ISO 10642	4
	20	nut	M8	DIN 439	4
	21	bush		machined alloy	4
	22	joint bearing	M 16		1
	23	joint bearing bush		machined alloy	1
	24	screw	M10 x 50 mm	ISO 10642	1
	25	nut	M10	DIN 439	1
	26	bearing carrier		milled part alloy	2
	27	bearing		61904 – 2RS	2
	28	screw	M5 x 25 mm	DIN 6912	4
	29	nut	M5	DIN 985	4
	30	bearing pin		machined steel	1
	31	thread rod	M16 x 450mm		1
	32	nut	M16	DIN 934	2



## PARTS LIST: JOINT BEARING SYSTEM (33 - 35)

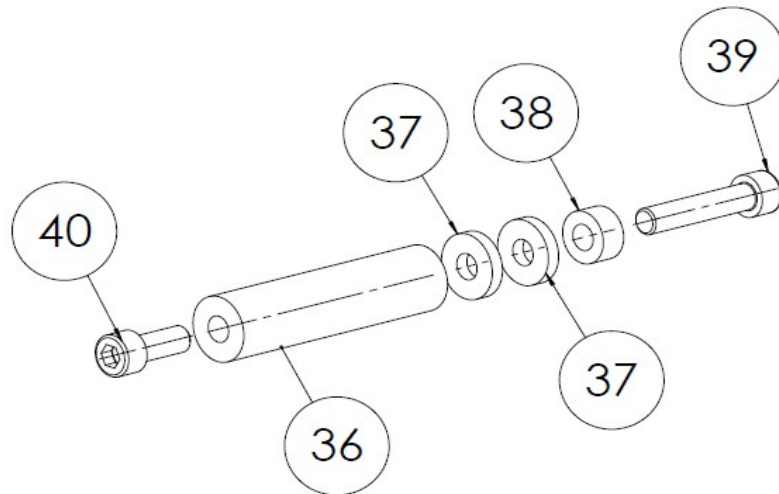
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Assembly	Position	Description	Detail	Specification	Pcs.
Joint Bearing System	33	joint bearing	M10		1
	34	screw	M10 x 40 mm	DIN 912	1
	35	linkage			1



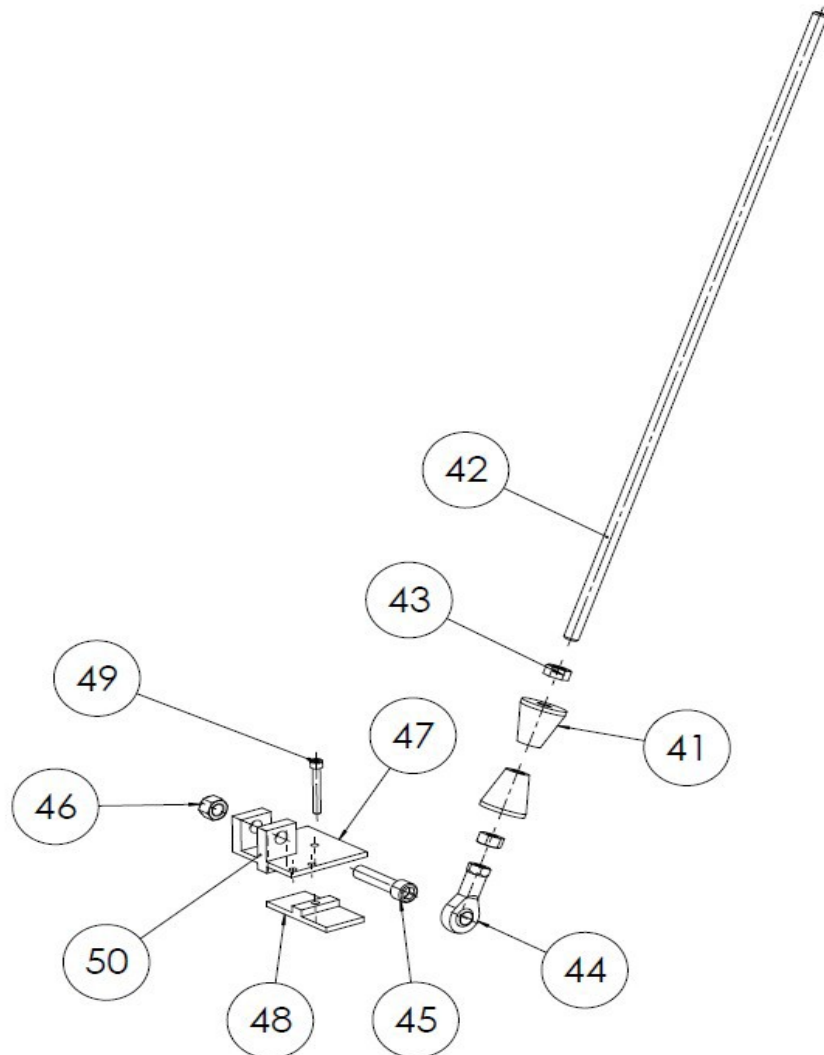
## PARTS LIST: PIVOT SYSTEM (36 - 40)

Assembly	Position	Description	Detail	Specification	Pcs.
Pivot System	36	pivot	100 x 25 mm	machined steel	1
	37	spacer 5 mm	5 x 25 mm	machined steel	2
	38	spacer 10 mm	10 x 20 mm	machined steel	1
	39	screw	M10 x 25 mm	DIN 912	1
	40	screw	M10 x 50 mm	DIN 912	1



## PARTS LIST: HEAD TUBE CARRIER (41 - 51)

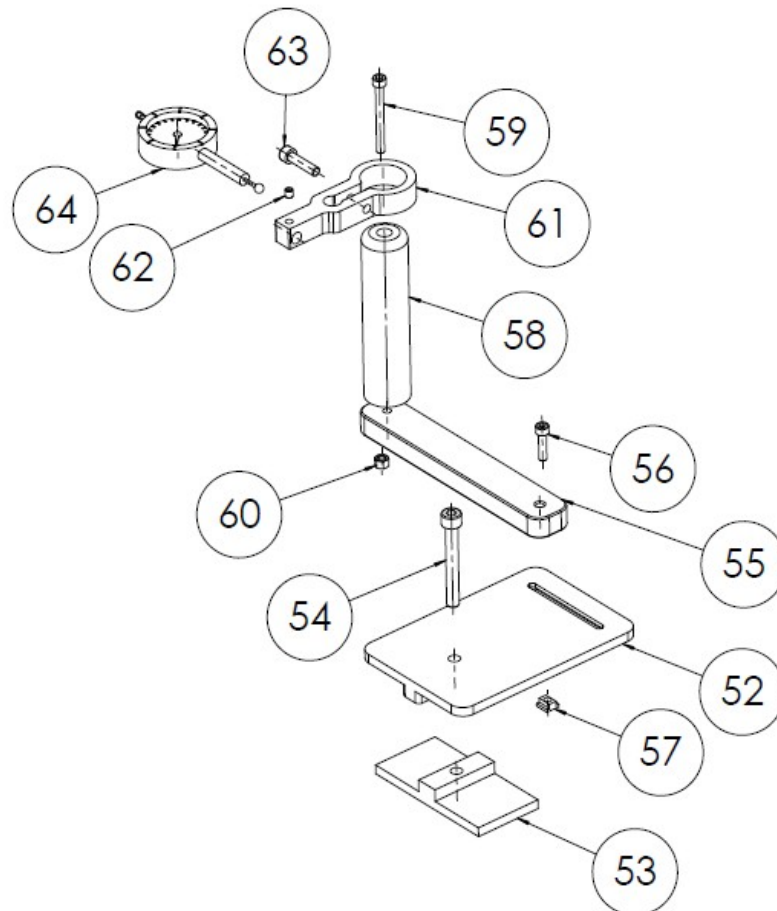
Assembly	Position	Description	Detail	Specification	Pcs.
Head Tube Carrier	41	head tube cone		machined steel	2
	42	thread rod	M16 x 800mm		1
	43	nut	M16	DIN 934	2
	44	joint bearing	M16		1
	45	screw	M16 x 70 mm	DIN 912	1
	46	nut	M16	DIN 934	1
	47	head tube slide		plate alloy 100mm x 100mm	1
	48	clamping		plate alloy 100mm x 50mm	1
	49	screw	M8 x 60 mm	DIN 912	1
	50	joint bearing carrier		milled part alloy	2
	51	screw	M6 x 25 mm	ISO 10642	4





## PARTS LIST: INDICATING CALIPER CARRIER (52 – 64)

Assembly	Position	Description	Detail	Specification	Pcs.
Indicating Caliper Carrier	52	indicating caliper slide		plate alloy 150mm x 100mm	1
	53	clamping		plate alloy 100mm x 50mm	1
	54	screw	M8 x 60 mm	DIN 912	1
	55	turning lever		milled part alloy	1
	56	screw	M5 x 20 mm	DIN 912	1
	57	nut	M5		1
	58	elevation adjustment		machined alloy	1
	59	screw	M5 x 100 mm	DIN 912	1
	60	nut	M5	DIN 985	1
	61	indicating caliper carrier		milled part alloy	1
	62	setscrew	M5 x 5 mm	DIN 913	1
	63	screw	M6 x 25 mm	DIN 912	1
	64	indicating caliper			1



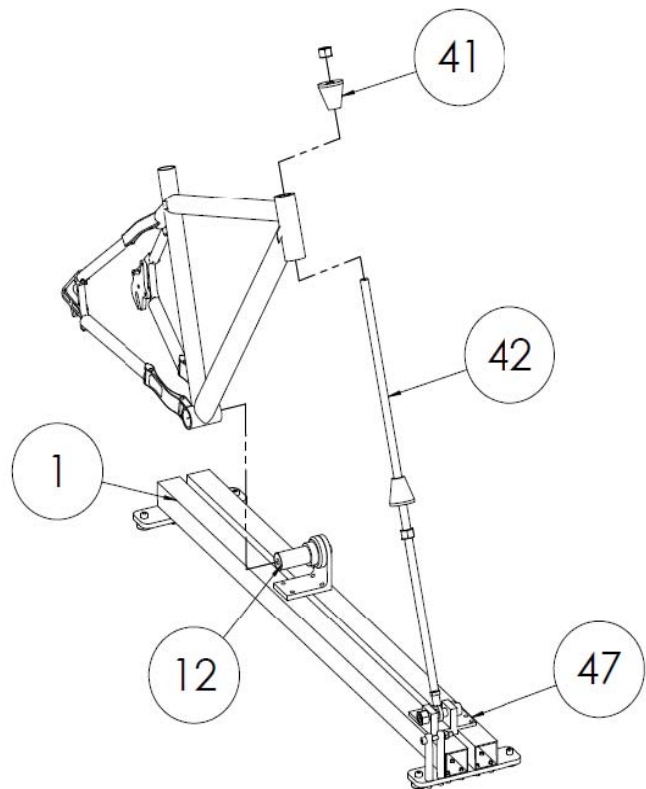
<b>weight</b>	65	<b>weight</b>	150 x 150 x 50 mm	3
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# ASSEMBLY INSTRUCTIONS

Please use the required tools which are listed above for the main assembly.

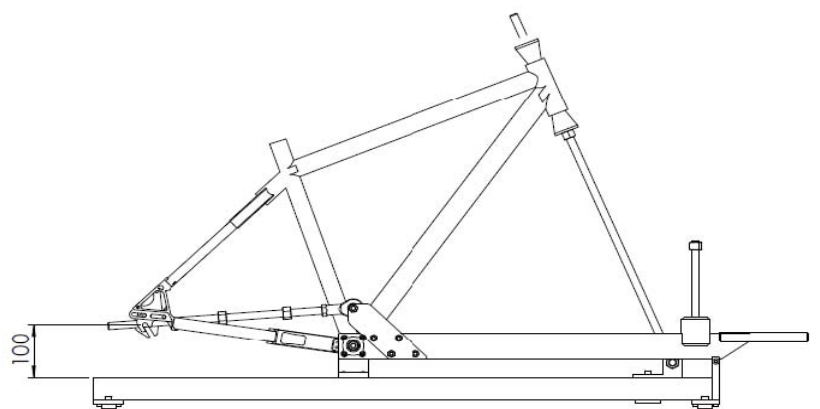
## Step 1 – Mounting the frame

Screw the lower head tube cone (Pos.41) on the thread rod (Pos.42) and put the head tube of the frame through the thread rod. The head tube slide (Pos.47) should not be fixed on the frame (Pos.1) while centering the thread rod (Pos.42) in the head tube. The frame has to be plugged on the bottom bracket seat (Pos.12). Screw on the upper head tube cone (Pos.41) to the thread rod (Pos.42).



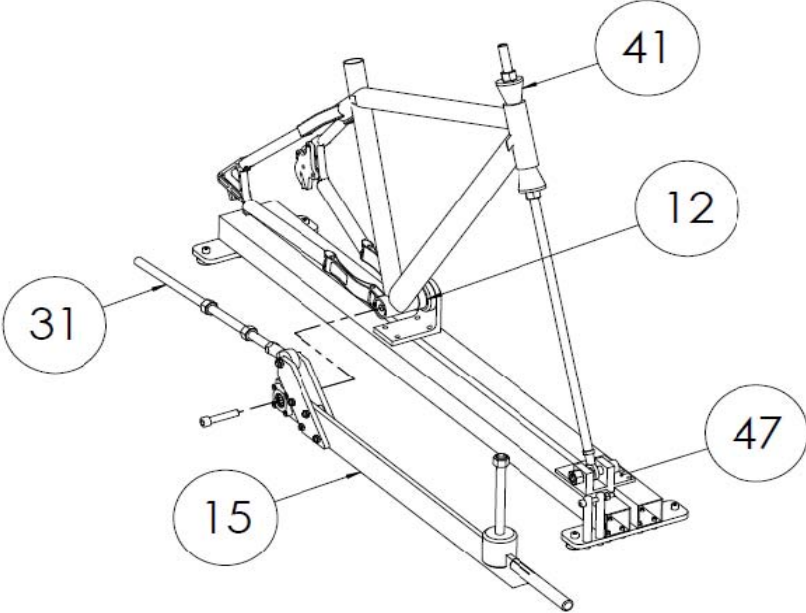
(fig. 1) mounting the frame

Please note that there is a max. distance of 100mm between the dropouts of the bicycle frame and the mainframe (Pos.1) in order to simplify the setting of the indicating caliper (see fig. 2). The positioning can be changed by screwing the head tube cones up and down or by changing the head tube slide's (Pos.47) position.



(fig. 2) positioning the frame

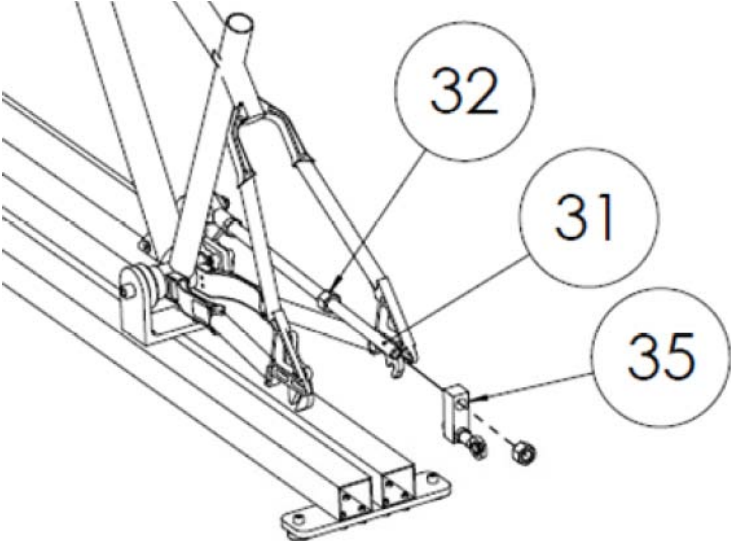
Tighten the head tube slide after positioning the frame. Centre the thread rod (Pos.31) between the dropouts of the bicycle frame before the assembly of the lever system assembly group (Pos.15). The lever system will be fixed with the bottom bracket seat to simplify the i



(fig. 3) mounting the lever system

**Step 2 – Mounting the joint bearing system**

To move the complete joint bearing system easily along the thread rod please note that the first nut (Pos.32) is screwed far enough onto the thread rod (see fig.4). Push the complete joint bearing system on the thread rod (Pos.31) and screw the rear nut (Pos.32) onto the first threads.



(fig.4) mounting the joint bearing system

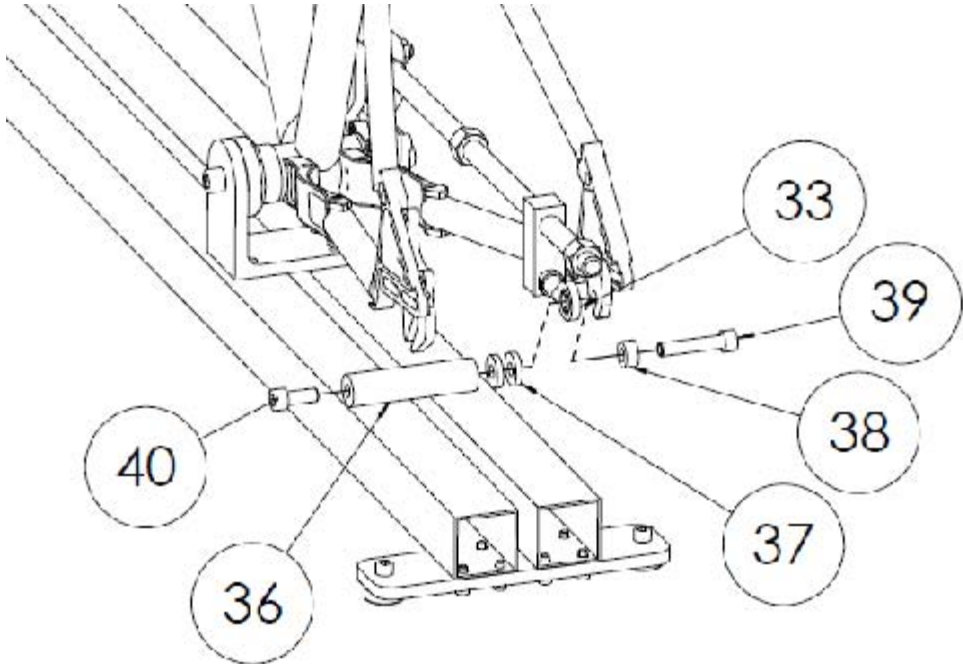


### Step 3 – Assembly and setting up the pivot system

The pivot system consists of the 100 mm pivot (Pos.36), one 10 mm spacer (Pos.37) and two 5 mm spacers (Pos.38). By using the spacers every dropout width can be reached. While choosing the width of the pivot system consider to add the width (15 mm) of the joint bearing (Pos.33). To guarantee enough space between the joint bearing system and the chain stay, put the 5 mm spacer (Pos.38) between the joint bearing (Pos.33) and the dropout of the frame. The following spreadsheet will show, which dropout width are possible.

Width of the pivot system (mm)	120	125	130	135
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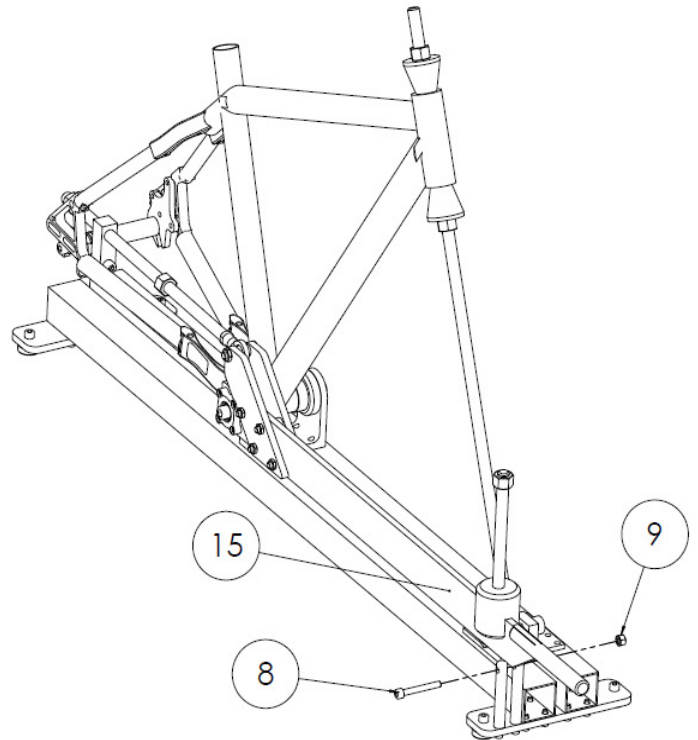
Put the complete pivot system into the dropouts of the frame and tighten the bolts (Pos.39, 40).



(fig.5) assembly the pivot system to the 135mm dropout width

## Step 4 – Tension the system

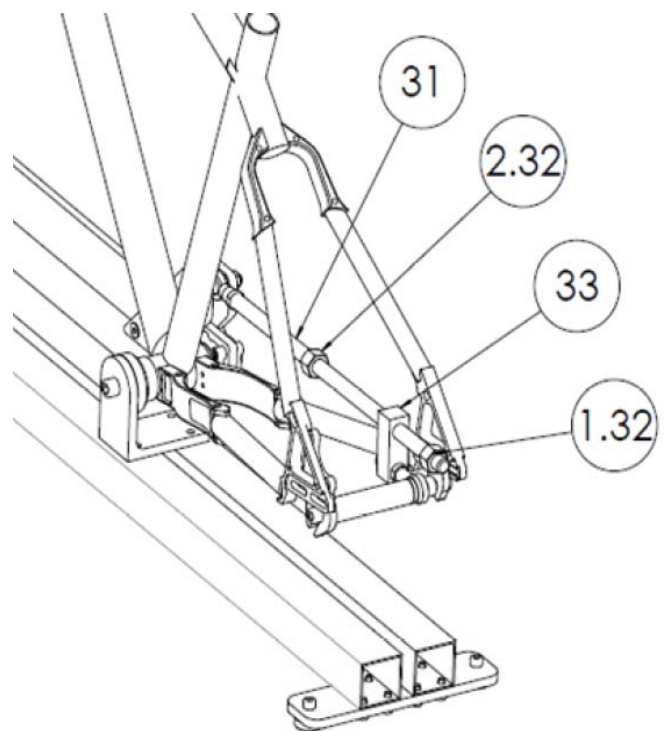
When the Carbon Drive™ system is correctly installed on a bicycle the belt is pre-tensioned in order to achieve its high efficiency and its long term durability. To simulate these pre-tension during the following stiffness measurement please observe the following steps. To install the joint bearing system correct be sure that the lever (Pos.15) bears on the safety bolt (Pos.8).



(fig. 6) safety bolt

The joint bearing system is fixed with the thread rod while tighten the rear nut (Pos.2.32). Please tighten the rear until the clearance is eliminated. Afterwards tighten the second nut (Pos.1.32).

As soon as the safety bolt (Pos.8) is removed, the system gets pretension by the weight of the lever (Pos.15).



(fig. 7) final assembly the joint bearing system