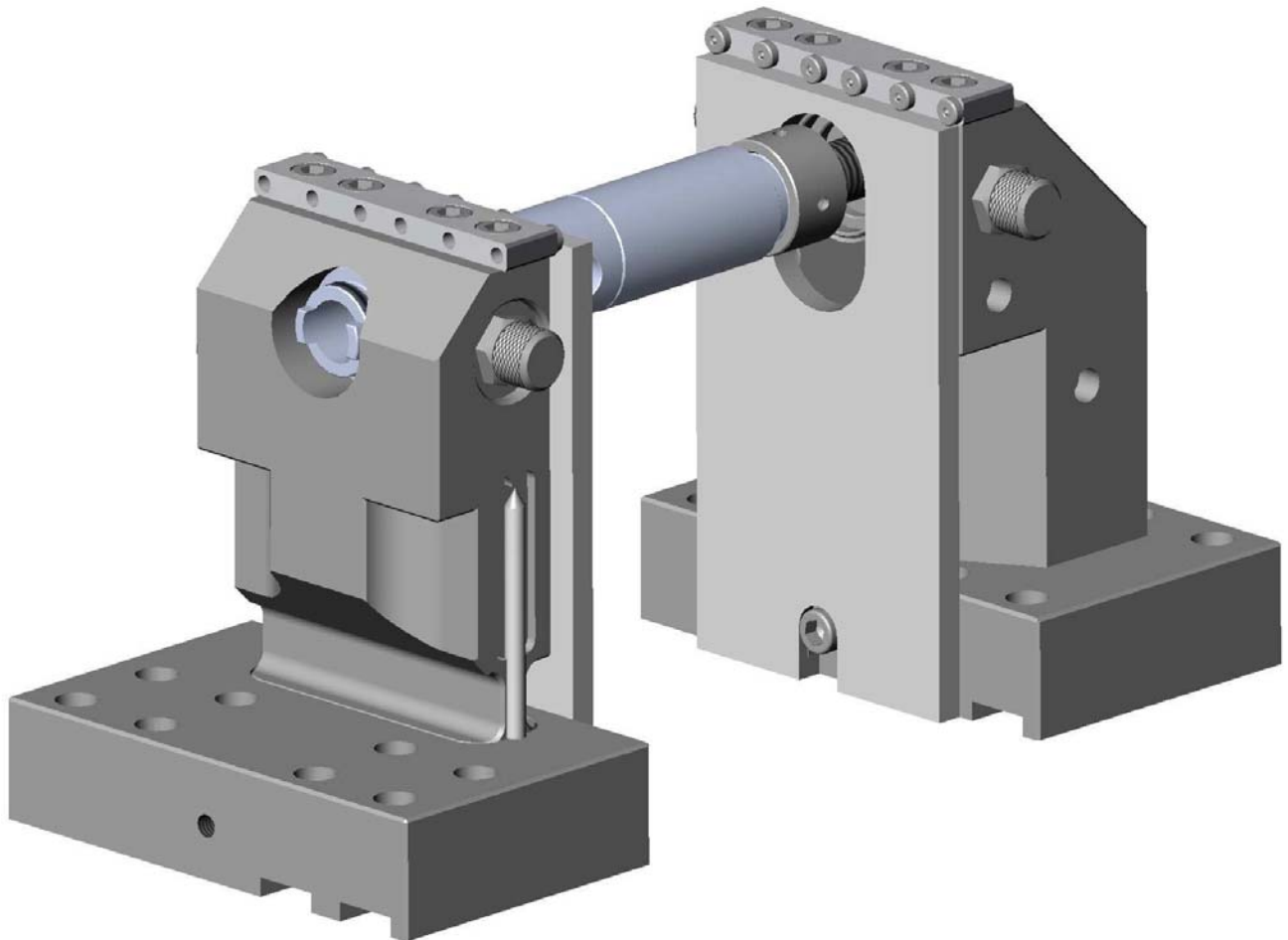




## Operating Instructions

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# **vb 5AX100**

*SCHENKE 5.1 CLAMPING SYSTEM*



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## 1. Introduction

Before using the 5-axis machining vise, please read these instructions carefully.

**We waive all liability for damages incurred through improper use.**

Vischer & Bolli AG, and Kurt Manufacturing, cannot be held liable under any circumstances for any kind of damage, however it may have occurred.

### Description

The 5-axis vise has been designed for flexible use and a very long service life. It is made of high grade steel.

With the 5-axis machining vise, you can machine your series-produced work pieces optimally from 5 sides with a maximum clamping width of 236 mm (9.291") (basic equipment) which can be extended as required.

You are recommended to use the 5-axis vise only with original accessories.

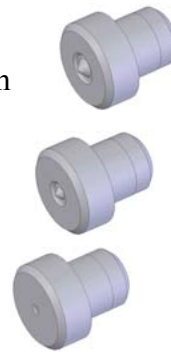
## 2. SAFETY AND WARNING NOTES



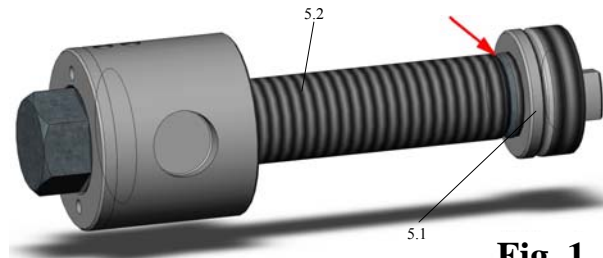
### Important

- Do not exceed the permitted clamping force of 40 kN (115 Nm, 8992 lbs)
- Make sure that everything is correctly mounted
- Always clamp the workpiece centrally.
- Make sure that all the screw connections have been fully tightened
- The parallelism error of the clamped workpiece across the entire width of the vice must not exceed 0.5 mm

- **Pin 0.5 (4/32)** do not use with material having a tensile strength in excess of 700 N/mm (101,500 PSI)
- **Pin 0.25 (4/32)** use with material having a tensile strength of up to 1000 N/mm. (145,000 PSI)
- **Pin 0.0 (4/32)** use with material having a tensile strength in excess of 1000 N/mm. (145,000 PSI)



- The spindle (5.1) nut must not project beyond the marking on the shaft. (Fig. 1)

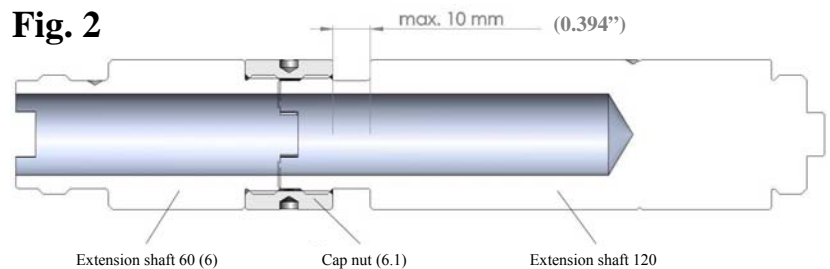


**Fig. 1**

- Before assembly, the face of the cap nut (6.1) must rest against the extension shaft (6)

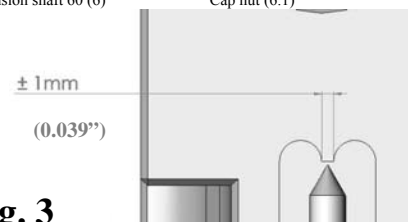
**Fig. 2**

- In the assembled state the distance from the cap nut (6.1) to the extension shaft (6) is not to exceed 10mm. (Fig. 2)

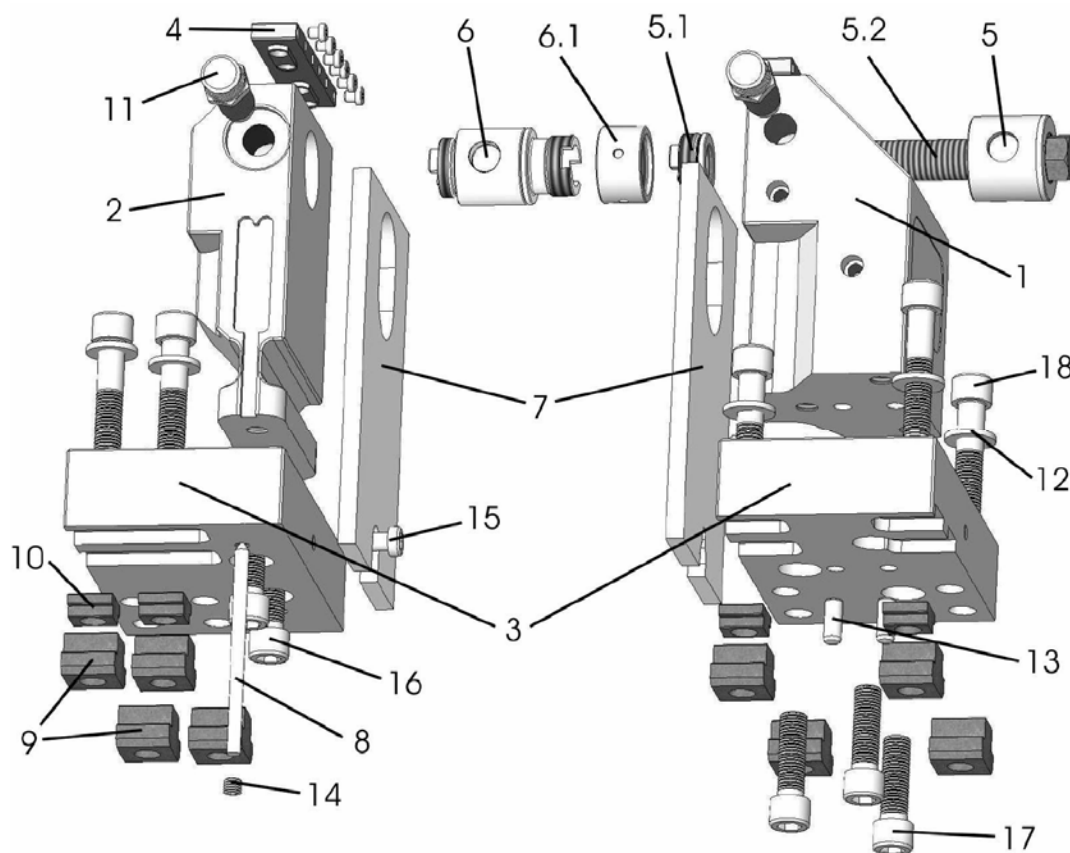


- Adjust the movable jaw (2) only within the marking. (Fig. 1)

**Fig. 3**



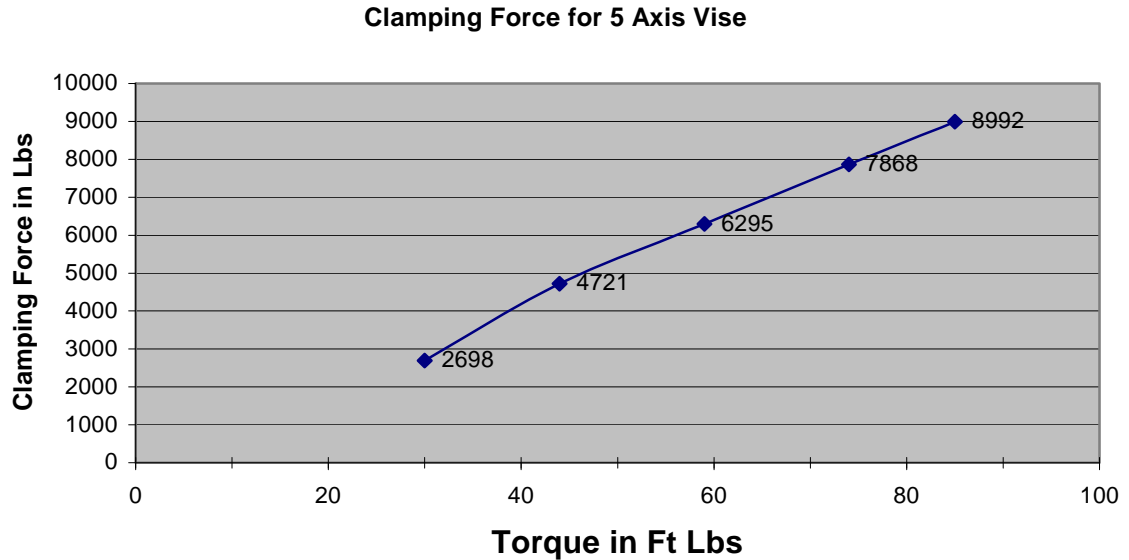
### 3.1 DESCRIPTION OF THE VISE



1	Fixed jaw
2	Moveable jaw
3	Mounting block for slot distances 63 (see illustration) 80/100 and without hole (also for location grid plates 40 x 40 and 50 x 50)
4	Standard clamping jaw with 6 pins
5	Threaded spindle (5.2) with draw housing (5) and spindle nut (5.1)
6	Extension shaft 60 (extension shaft 60 and 120 with cap nut in a set)
7	Workpiece support plate
8	Indicator
9	Slide block
10	Fitting slide block
11	Knurled assembly bolt
12	Washer
13	Cylindrical pin DIN 7979
14	Threaded pin DIN 913
15	Fixing screw DIN 6912 M8x16
16	Fixing screw DIN 912 M12x20
17	Fixing screw DIN 912 M12x40
18	Fixing screw DIN 912 M12x60



### 3.2 TECHNICAL DATA



**Do not exceed the permitted clamping torque of 115 Nm (85 Ft Lbs)**

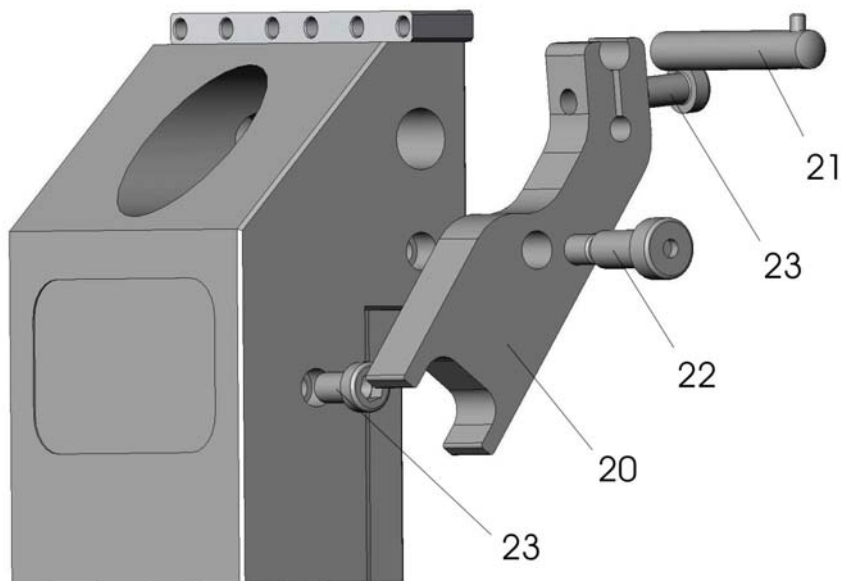
<b>Technical data</b>		
Clamping height at machine table	175 mm	6.890"
Width between jaws	100 mm	3.937"
Workpiece clamping force	0 – 40 kN	0-8992 Lbs
Clamping width (set)	20 – 236 mm	.787-9.291"

### 3.3 ASSEMBLY OF THE VISE

- 1.1 Place the **moveable jaw** (2) on the mounting block (3)
- 1.2 The pointer (8) is inserted from below, on the side facing the operator, in the hole provided and secured against falling out with threaded pin DIN 913 (14). The distance from the pointer to the mark must be ca. 0.5mm (0.020”).
- 1.3 Tighten the two fixing screws DIN 912 (16) with a torque of 140 Nm (103 ft lbs)
- 1.4 Screw the workpiece support plate flush with the mounting block clamping surface using the fixing screw DIN 6912 (15) and/or DIN 912 with a torque of 20 Nm (14 ft lbs)
  
- 2.1 Insert the fitting pins DIN 7979 in the holes provided for them in the **fixed jaw** (1)
- 2.2 Tighten the two fixing screws DIN 912 (17) with a torque of 140 Nm (103 ft lbs)
- 2.3 Tighten the workpiece support plate flush with the mounting block clamping surface using the fixing screw DIN 6912 (15) and/or DIN 912 with a torque of 20 Nm (14 ft lbs)

### 3.4 STOP

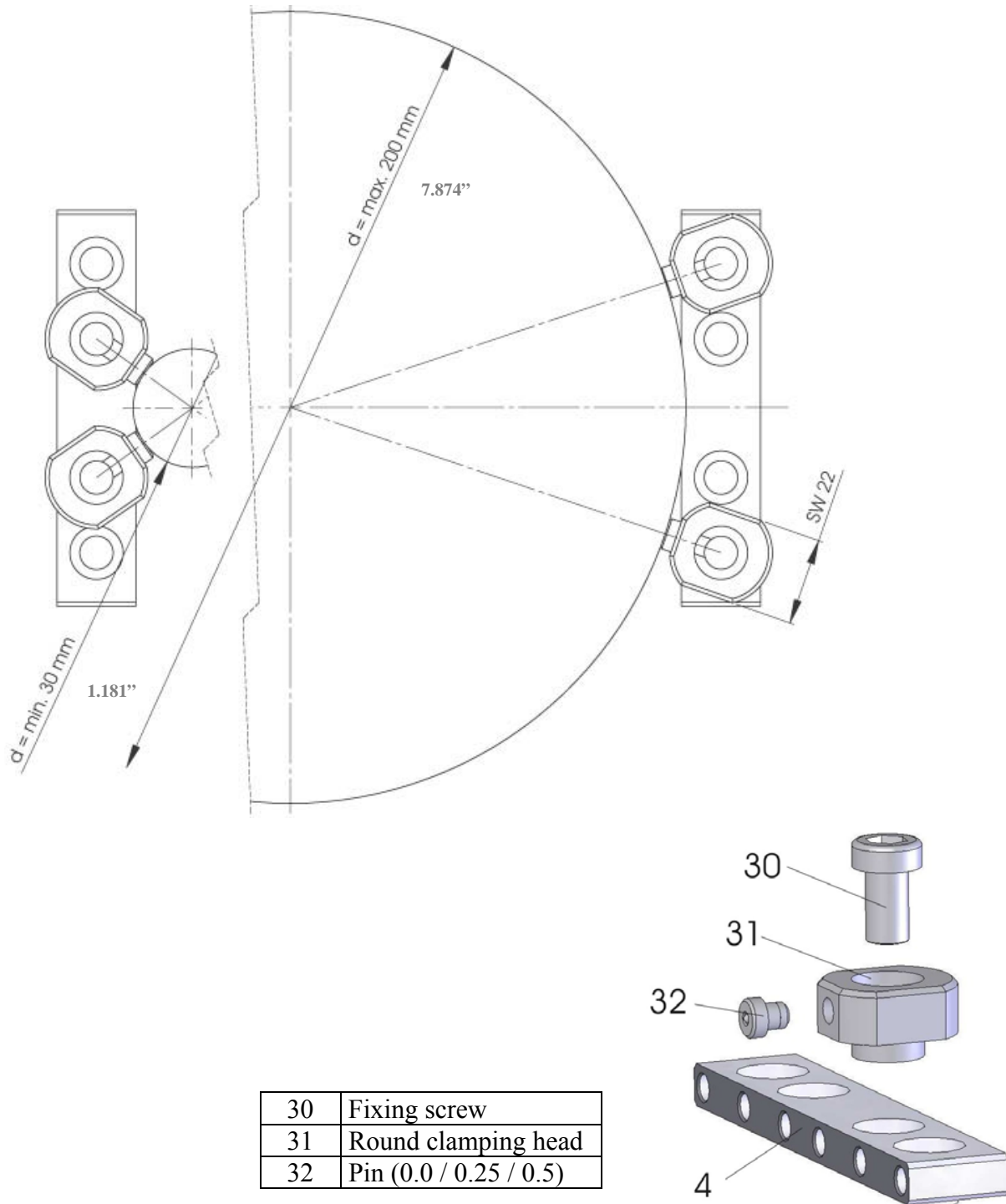
To permit machining of the side of the workpiece bearing against the stop, the stop (20) can be swung aside by slackening the shoulder screw (22).



20	Stop
21	Stop pin
22	Shoulder screw ISO 7379
23	Fixing screw DIN 6912 M8x16

### 3.5 CLAMPING ROUND PARTS

The round clamping heads (31) must be aligned with the workpiece center.



30	Fixing screw
31	Round clamping head
32	Pin (0.0 / 0.25 / 0.5)

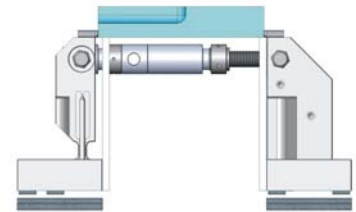


#### 4. MOUNTING THE VISE

##### Mounting on the machine

- Position the fixed jaw (1) on the machine table (or location grid) with the fitting slide block (10) or workholding straps and tighten the fixing screws DIN 912 (18) including the washers with a torque of 90 Nm (66 ft lbs)
- Insert the threaded spindle (5) in the jaw and turn the two knurled assembly bolts (11) **by hand** as far as they will go in the countersink provided on the extension screw (6). Only then may the threaded assembly bolts (11) be tightened if necessary with a spanner.
- Adjust the clamping shaft length by means of the different extension shafts (6) to the workpiece length

Extension shaft 60  
= workpiece length 20 – 86 mm  
(0.787-3.386")



Extension shaft 120  
= workpiece length 80 – 146 mm  
(3.150-5.748")



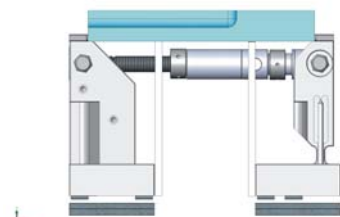
Extension shaft 240  
= extension by 240mm  
(9.448")



Extension shaft 60 + 120  
= workpiece length 140 – 206 mm  
(5.512-8.110")



Extension shaft 60 + 120  
= workpiece length 170 – 236 mm  
(with the clamping jaw turned)  
(6.693-9.291")



For longer work pieces, all intermediate extension shafts must be fitted



- Push the moving jaw (2) into position with the pre-mounted workpiece support plate (7)
- **!!!Important!!!** : Clearance of just 1mm (0.039”) or so from the workpiece. The pointer (8) must be in the middle position. In this position screw the moving clamping jaw (2) firmly down onto the table (or location grid).
- Push the extension shaft (6) with the cap nut through the moving jaw (2) and connect with the spindle nut (5). Screw the extension shaft (6) on to the threaded spindle (5) until the two lateral knurled assembly bolts (11) engage in the recesses provided in the extension shaft (6). Note the markings on the extension shaft (6) (notch). The notch on the extension shaft (6) must be flush with the jaw or still just visible at the highest point of the hole in the jaw.

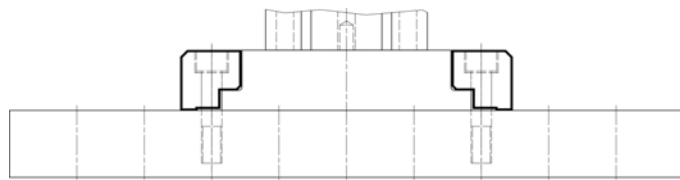
### Mounting on the location grid

Tighten the fixing screw sufficiently firmly

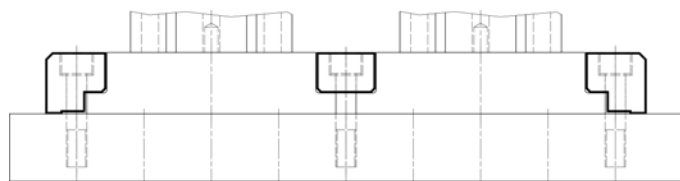
M12 = approx. 80 Nm (59 ft lbs)

M16 = approx 170 Nm (125 ft lbs)

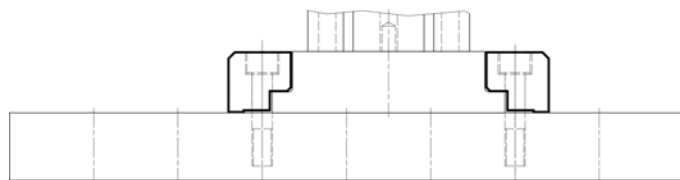
Grid 40 x 40 with M12 thread



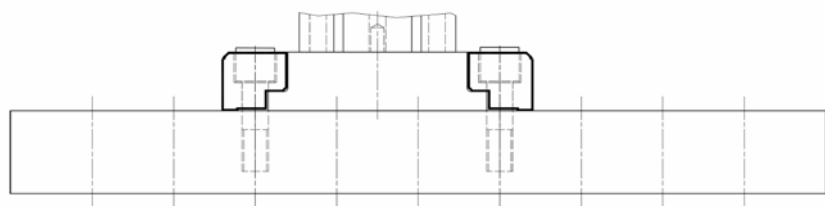
Grid 40 x 40 with M12 thread



Grid 50 x 50 with M12 thread

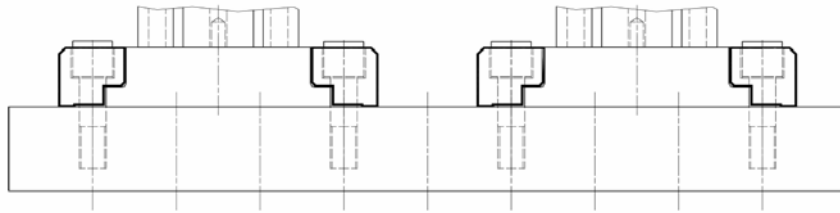


Grid 50 x 50 with M16 thread.





Grid 50 x 50 with M16 thread.



## 5. CARE AND MAINTENANCE

Make sure that the threads are sufficiently clean and undamaged. A light film of oil is required on all the moving parts.

## 6. WARRANTY

Two years and covers workmanship and material defects.

## 7. SERVICE AND DISTRIBUTION

**Kurt Manufacturing**  
**Industrial Products/Chip Solutions Division**  
1325 Quincy Street NE  
Minneapolis, MN 55413  
USA

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