

XTS Maintenance and Service concept



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Abbreviations

- A** = Screwing the guide rail on the motor module
- B** = Guide rail
- C** = Dowel pin for aligning the guide rails with each other
- D** = Screwing between the guide rails
- E** = Dowel pin for aligning the guide rail on the motor module
- F** = Dowel pin for alignment of the motor modules
- G** = Module connector
- H** = Dowel pin for aligning the motor modules with each other
- I** = Motor module with supply AT2001-0250
- K** = Motor module AT2000-0250
- L** = Screwing between the motor modules and the machine bed
- M** = Machine bed

1. Basic idea

Generation of interchangeable motor module branches (MS) between infeed modules (K). This is achieved by the unnecessary module connector (G) at the cable based face side of the infeed module (K). A prerequisite is a corresponding segmentation of the machine bed (M) and / or the guide rails (B).

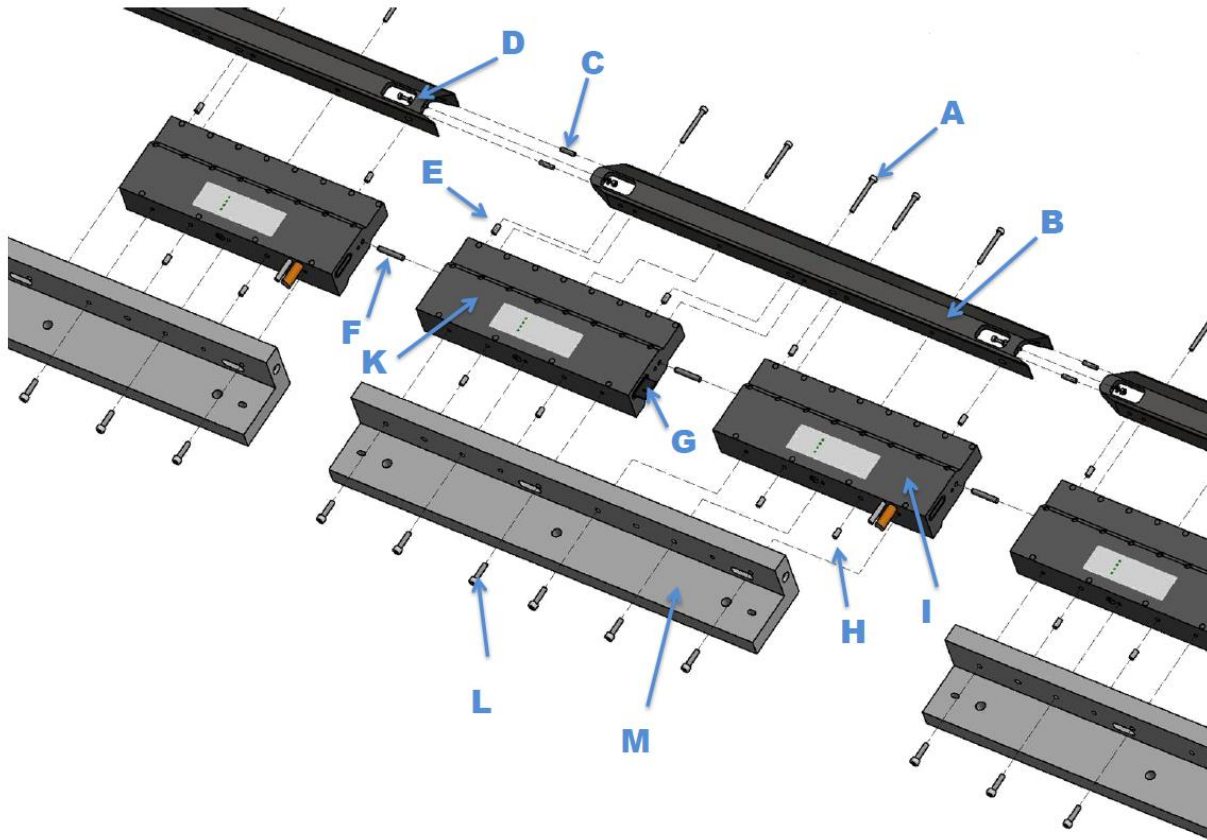


Figure 1: Standard design of machine bed, modules and rail system

2. Option 1

By dispensing the dowel pins Pos (C) and Pos (F) and releasing the screw connection (D) at the boundaries of the infeed branches (MS) a complete infeed branch (MS) including machine bed (M) and the guide rail (B) can be taken out.

Advantage: - very fast change of an infeed branch is possible in case of a defect.

Disadvantage: - Possible inaccuracies between the guide rails due to the missing dowel pins.

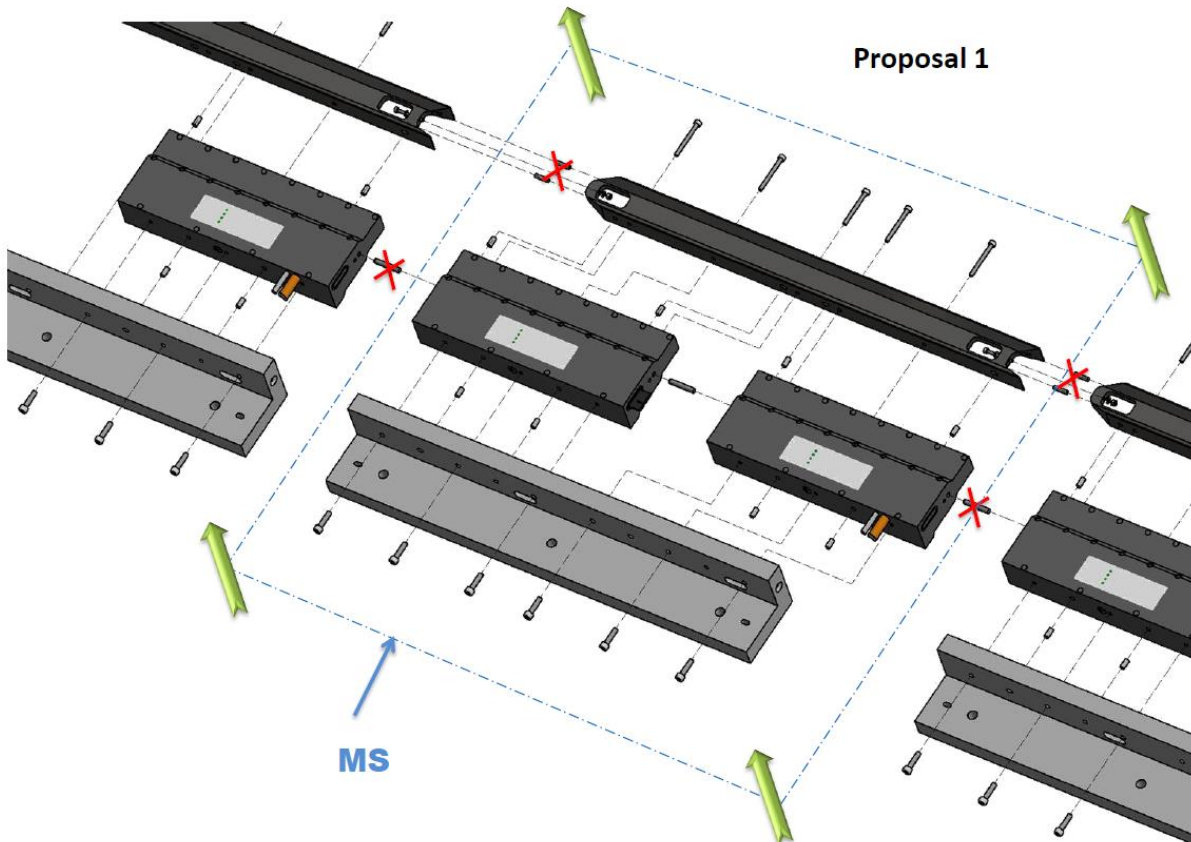


Figure 2: Proposal 1 for an improved maintenance of machine bed, modules and rail system

3. Option 2

By dispensing the dowel pins Pos (F) at the ends of an infeed branch (MS) and loosen all screw connections (A) it is possible to take out the infeed branch (MS) including the machine bed (M).

Advantage: Perfect centration of guide rails compared to proposal 1- Rail length is independent of the length of the infeed branch.

Disadvantage: - Higher working effort by loosen the rail system compared to Poposal 1.

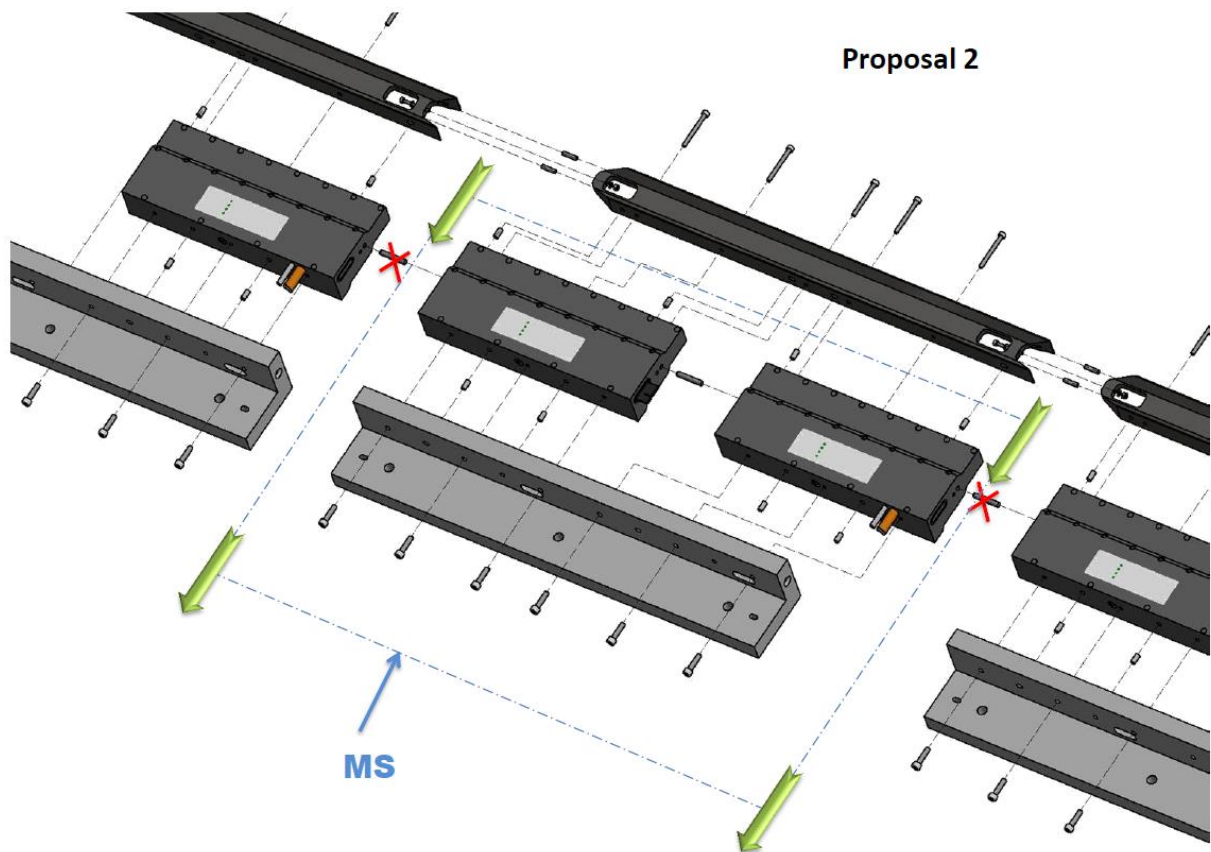


Figure 3: Proposal 2 for an improved maintenance of machine bed, modules and rail system

4. Summary maintenance concept

Each option consisting of advantages and disadvantages. A recommendation cannot be given. That is depending on the requirements of the machine builder

5. Service plan for xts starterkits

The mechanical and electrical equipment must be checked that they are in an operational condition at regular intervals. The intervals are determined in such a way that problems are detected prior to causing permanent damage.

After service or repairs are completed the system must test run under supervision. The following table defines recommended service intervals when the system is operated under normal conditions. The data below is valid for laboratory conditions and a 25c and relative humidity below 50%.

Operating under conditions with restricted air movement, increased ambient temperature, increased humidity, harsh vapors, or similar aggressive will reduce the interval time between servicing. Depending on the mechanical dynamics due to mounted fixtures and motion the service life of consumable components can be greatly reduced.

The intervals specified refer the total operating time of the system and not the operating time of individual components. Maintenance work is to be carried out only when the system is stopped and power removed.

List of Abbreviations:

Lubricant	G = Grease	O = Oil		V = Vaseline DAB10	
Cleaner	I = Isopropanol				
Interval	D = Daily	M = Monthly	3mo = 3 months	6mo = 6 months	A.R. = as required
Expected Travel Life [km], Depends on mover type	AT9011-0050-0550 = 3000km	AT9012-0050-0550 = 6000km		AT9011-0070-0550 = 9000km	

If the distance travelled by the mover would exceed the movers expected travel life prior to the service interval the interval times are not valid and service must be performed when the expected travel life is reached.

System	Description	Service	Lubricant / Cleaner	Interval
Motor Module	Coil Cores	Visual inspection for abrasion of the Coil Cores		6 Months

	Feed Back Sensor System	Visual inspection for abrasion of the sensor surfaces		6 Months
	Machine Bed	Check the mounting of the modules on the machine bed		6 Months
Track	Straight Sections	Check all joints for any separation or wear		6 Months
		Clean the running surfaces	I	Monthly
		Lubricate the running surfaces	V	As Needed
		Check the mounting of the rail		6 Months
	Curves	Check the rail joints for any separation and pitting		6 Months
		Clean the running surfaces	I	Monthly
		Lubricate the running surface	V	As Needed
		Check the mounting of the rail to the modules		6 Months
	Gate	Check the Mover gate for wear and pitting		6 Months
		Cleaning the running surface	I	Monthly
		Lubricate the running surface	V	As Needed
		Check the mounting of the gate		6 Months
		Check the correct position of the Gate		6 Months (and every time it is opened)
Mover	Rollers	Check the Rollers for pitting and material loss		3 Months (or when expected service life is reached)
	Magnets	Inspect the magnets for damage/abrasion		6 Months
	Encoder Flag	Check the Encoder flag is secure		6 Months

		Check for abrasion of the Encoder Flag against the module sensors		6 Months
	Carbon Fiber Brush	Check the Brush is present		6 Months
		Check the brush is securely fastened		6 Months
		Check the distance from the brush to the rail is less than 1mm.		6 Months