ML TUNING® spol. s r.o.

VÝROBA A SERVIS KARDANŮ

www.kardany.cz

Technical conditions constant velocity shafts

Transport, assembly and maintenance constant velocity shafts

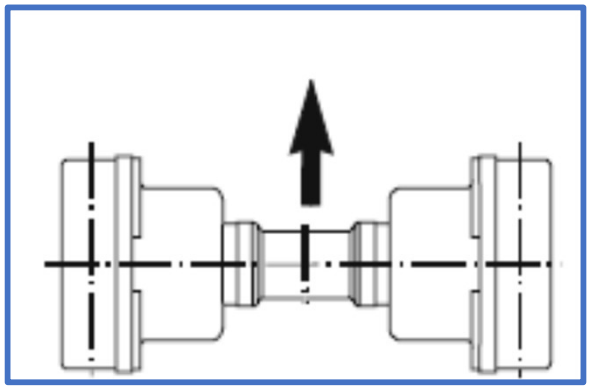
ML TUNING, spol. s r.o.
Pekárenská 738/54
370 04 České Budějovice

Tel.: + 420 387 314 125
E-mail: cbudejovice@ml-tuning.cz

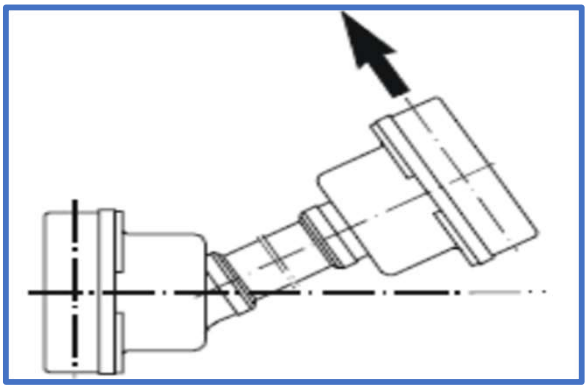
Transport, assembly and maintenance

Special attention should be paid to the cuffs and sheet metal caps. The joints must never be forcefully bent beyond the permitted value. Never lift the shafts by the knuckle. Failure to do so may result in pinching and damage to the cuff and cap.

Correct



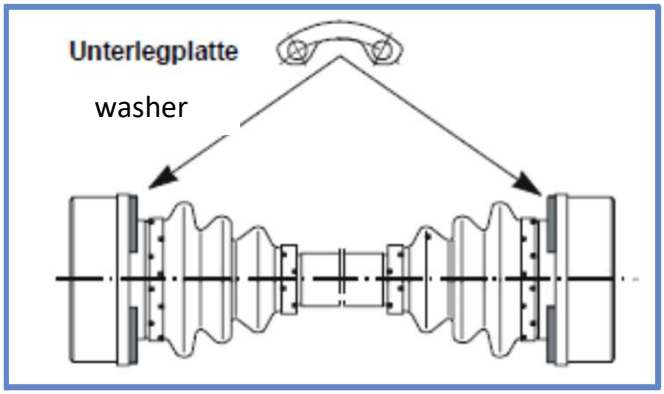
Incorrect



Transportation and storage of shafts should be done horizontally. Storage must be done in such a way that the cuffs are not hanging out. If necessary, special packaging should be provided.

Prescription for assembly

The torque transmission is partly due to static friction, so the flange surfaces must be cleaned and degreased before the shaft is assembled. Only use fixing screws of quality 10.9 and tighten them to the specified torque, see instructions below. The washers supplied with the disc joints must be used. They prevent deformation of the cuff caps (leakage) and ensure the required pressure on the connecting flange.



When installing, ensure that the free end of the shaft is supported and that the maximum angle of the shaft is not exceeded. Otherwise, there is a danger of the shaft pinching the cuff with its lever arm, which may result in damage to the cuff and its cap.

Maintenance and operation

The CV joints are provided with permanent (maintenance-free) lubrication. In the normal case, maintenance is limited to periodic visual inspection of the cuff and checking the tightening torque of the coupling bolts. Inspection intervals cannot be generalised, the effect of the environment and shaft operation must be taken into account. If a lubricant leak is detected from a damaged cuff, the drive must be stopped immediately, and the cuff replaced with a new one toto prevent subsequent damage to the joint. We offer repair kits for this case.

If the joint is damaged, the complete joint must be replaced. The parallel shafts, with length extensions, must be lubricated depending on the operation. We recommend the use of Optimol paste MP3 for lubrication..

Recommended CV joint bolt connections

Shaft types	description of screws	norm	Joint size											
			4	5	10	12	13	15	21	30	32	42	48	60
102 - 105 - 108 111 - 162 - 165	Allen screw	DIN 912/10.9		M8x35	M8x45		M8x50	M10x55	M12x70	M12x70	M16x1,5x80			
101 - 104 - 107 110 - 161 - 164	Allen screw	DIN 912/10.9			M8x55									
115 - 166	Hexagonal screw	DIN 931/10.9	M6x20	M6x20	M8x25	M8x25		M8x25	M10x30	M12x35				
	Hexagonal nuts	DIN 980/10.9	M6	M6	M8	M8		M8	M10	M12				
114 -115	Allen screw	DIN 912/10.9	M6x20	M6x20	M8x25	M8x25		M8x25	M10x30	M12x35				
	Hexagonal nuts	DIN 980/10.9	M6	M6	M8	M8		M8	M10	M12				
	Allen screw	DIN 912/10.9	M8x45	M8x45	M8x45	M8x50		M10x55	M12x70	M12x70				
117 - 118 168 - 169	Allen screw	DIN 912/10.9							M12x60	M12x70	M16x1,5x80	M16x1,5x80		
200 - 201 - 202 203 - 250 - 251	Allen screw	DIN 912/10.9										M16x1,5x100	M16x90	M20x120

Screw tightening torques

Joint size	4	5	10	12	13	15	21	30	32	42	48	60
Size of thread	M6	M6	M8	M8		M8	M10	M12	M16x1,5	M16x1,5	M16	M20
Ma [Nm]	14	14	35	35		35	69	120	300	300	280	550

Temperature references and critical rpm.

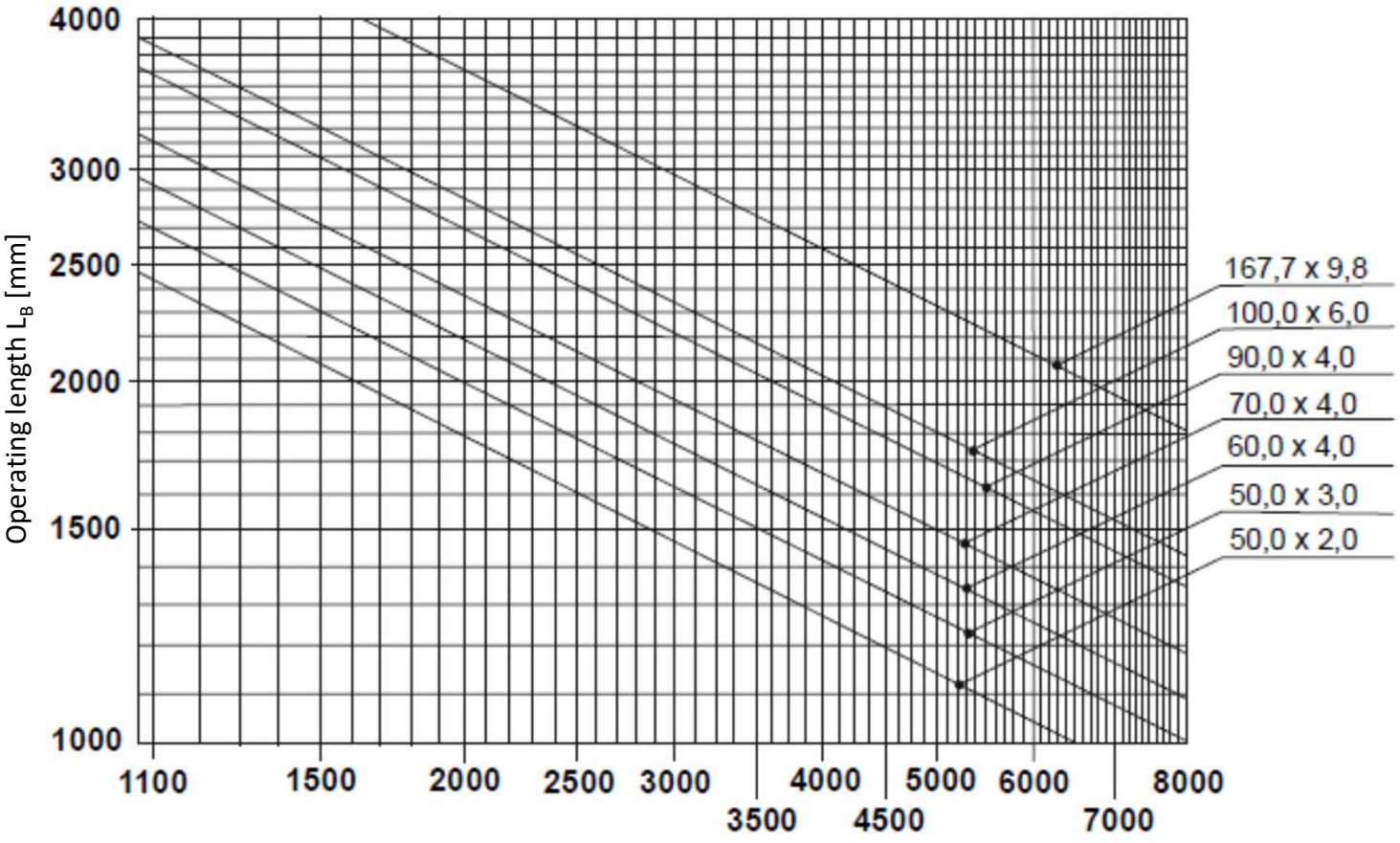
Temperature references

The operating rpm, bending angle and torque have an effect on the joint temperature. **The operating temperature**, measured at the outer diameter of the joint, **may be a maximum of 80°C** (100°C for short periods).
At room temperature, it can be assumed that if the following formula is followed, the permissible temperature will not be exceeded.

critical rpm

rpm x bending angle	**≤ 14.000 for a fixed joint** **≤ 18.000 for sliding joint**

For high-speed DC shafts, critical speeds must be addressed. For safety reasons, the maximum permissible speed according to Factor 0.64 must be below the value to be read from the diagram.
The operating length L_B is the distance between the centres of the joints.



n permissible/max. = 0,64 x n crit.