

COMPATIBILITY CALCULATION FOR TRAILERS
 (Calculation acc. EC71/320 Annex VIII with all modifications
 till EC98/12 from 27.01.1998)



Name: TB2

Version 15.07.2004

1. Control device

Manufacturer: KNOTT GmbH
 Type: **KF13-C**
 EC-Test report no. 361-091-80
 ABG -Nr.: M1436
 Complete mass $G'A_{min}$ = 750 kg
 Complete mass $G'A_{max}$ = 1300 kg
 Additional force K = 160 N
 Usable overrun travel s' = 90 mm
 Efficiency η_{HO} = 0,947
 Transmission of travel i_{HOmin} = 1,67
 Transmission of travel i_{HOmax} = 4
 Threshold limit K_A = 300 N
 Max. compressive force D_1 = 530 N
 Max. pulling force D_2 = 2100 N
 Lever L_1 = 100 mm
 Lever L_2 = **31 mm**
 Lever transmission i_{HO} = **3,23**

2. Brake

Manufacturer: KNOTT GmbH
 Type: **16-1365**
 EC-Test report no. 5177/77
 Certificate no. Mchn. 77/139
 perm. Brake capacity G_{BO} = 450 kg
 \emptyset brake drum= 160 mm
 Nominal size ρ (kB) = 0,625 m
 Travel transmission i_g = 14,00
 Min tension travel sB^* = 1,52 mm
 Return force P_0 = 50 N
 max. dyn. Tyre radius dyn. R_{max} = 0,29 m
 min. dyn. Tyre radius dyn. R_{min} = 0,184 m
 max. brake torque M_{max} = 1200 Nm
 Return travel SR = 28 mm
 Reversing moment MR = 30 Nm
 Travel transmission $i_{HW} = s'/i_g/sB^* =$ 4,23

3. Transmission device

Type: Brake Rod Transmissions i_{H1} = **1,00** Efficiency η_{H1} = **1,000**
 Quantity of brakes n **2** Tyre size according R_{min} a. R_{max}
 R_{min} **0,184m** R_{max} see calculation
 min. gross weight G_{Amin} **750 kg** max. gross weight G_{Amax} **900 kg**

4. Compatibility Table

Perm. Complete weight G_A [kg]	Necessary brake force $B = 0,49 \cdot G_A \cdot g$ [N]	Perm. force on coupling $D^* = 0,1 \cdot G_A \cdot g$ [N]	Step 50 kg		Force transmission i_{HK} Räderanzahl $n=2$	Threshold ratio $100 \cdot K_A / (G_A \cdot g)$ 2-4%	max. damping force $100 \cdot D_1 / (G_A \cdot g)$ <10%	max towing force $100 \cdot D_2 / (G_A \cdot g)$ 10-50%
			Min. dynamic radius dyn. R_{min} = [m]	Max. dynamic radius dyn. R_{max} = [m]				
750 kg	3675	750	0,184	0,290	3,22	4,00	7,07	28,00
800 kg	3920	800	0,184	0,290	3,17	3,75	6,63	26,25
850 kg	4165	850	0,184	0,290	3,11	3,53	6,24	24,71
900 kg	4410	900	0,184	0,290	3,06	3,33	5,89	23,33

5. Compatibility

Max. brake torque an wheels $(n \cdot M_{max}) / (B_{max} \cdot R_{max}) =$ **1,88** (must be greater than 1,2)

Total Efficiency

$$\eta = \eta_{HO} \cdot \eta_{H1}$$

0,947

max. perm reverse moment

$$MR_{max} = (0,08 \cdot g \cdot G_{Amin} \cdot R_{min}) / n$$

55,20 Nm

Travel ratio

$$s' / sR$$

3,21

Force transmission

$$((B \cdot R_{max} / \rho) + n \cdot P_0) / (D^* \cdot K) / (\eta_{HO} \cdot \eta_{H1})$$

i_{HK}
3,22

Lever transmission

$$i_{HO} \cdot i_{H1}$$

i_H
3,23

Travel transmission

$$s' / i_g / sB^*$$

i_{HW}
4,23