

DATA SHEET

Cavity Tuning Plunger (Feinabstimmung)

DESY-MHFe, Vers. 3.0

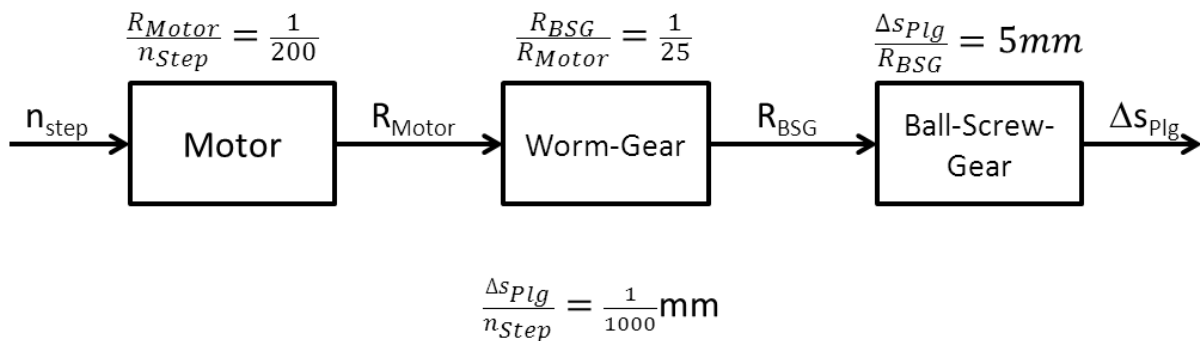
March 2013

Type: PETRA
 Manufacturer: **DESY**

Technical Data:

	unit	min.	nom.	max.	remarks
Plunger, depth of immersion „S“	mm	-20	+10	+40	„+“ means into cavity
Immersion control measure „X“	mm	135	105	75	see photo
Gear transmission ratio $\Delta s_{Plunger} / n_{Step}$	μm		1		
Motor, steps per revolution			200		
Motor, angle per step	degree		1.8		
Motor, coil resistance	Ω	3.5		3.7	
Motor, current per coil	A			1.5	
Motor, maximum rotation speed	s^{-1}	2			half stepping drive
Plunger diameter	mm		115		
Dissipated rf power	kW		0.25	3	@ 500 MHz and 20 kW power loss per cavity cell
Cooling flow rate	l/h	360	500		
Pressure	bar		6		Test pressure 8 bar
Vacuum flange	mm		150		Conflat NW150
Weight	kg		35		

Gear transmission



DATA SHEET

Cavity Tuning Plunger (Feinabstimmung)

DESY-MHFe, Vers. 3.0

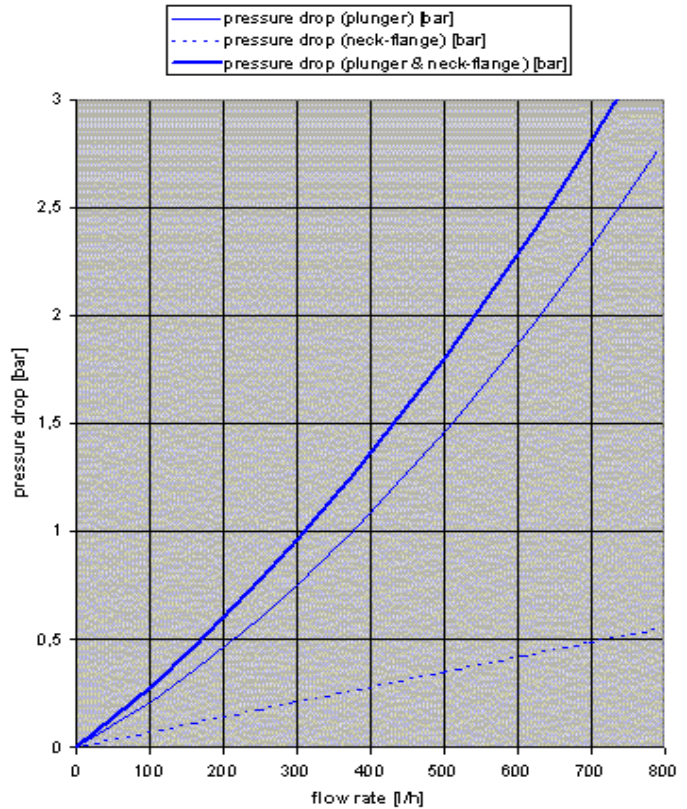
March 2013



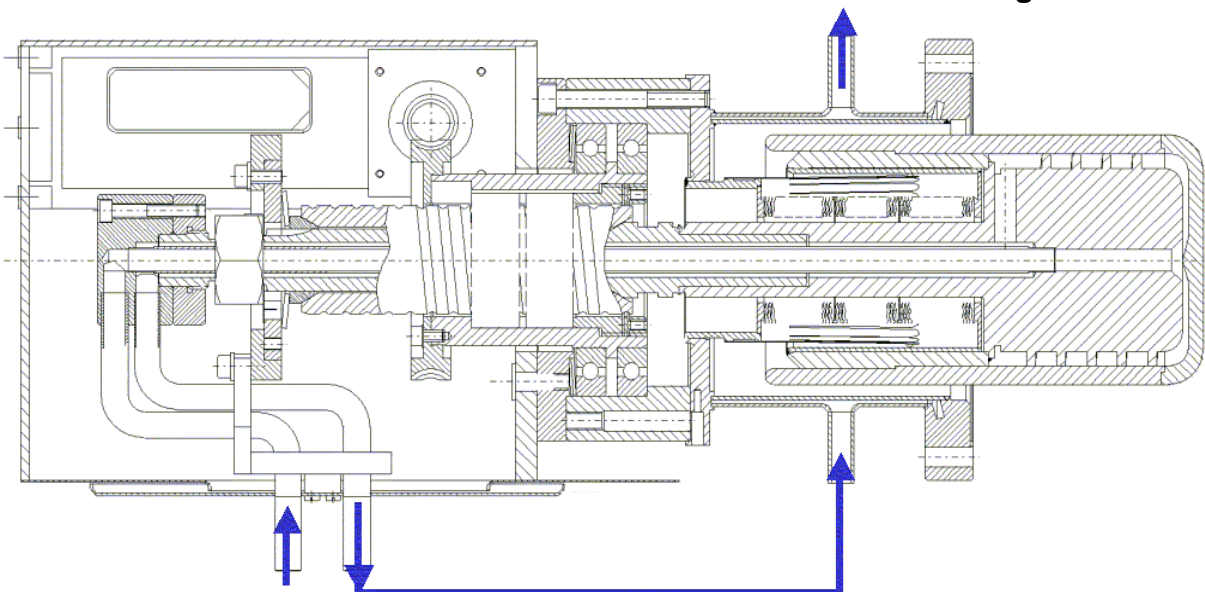
The immersion depth of the plunger "s" can be measured by the control measure "x" (red double arrow on the photo above)

$$s = 115 - x \text{ [mm]}$$

Plunger Cooling,
Pressure Drop vs Water Flow



Series connection of the cooling circuits



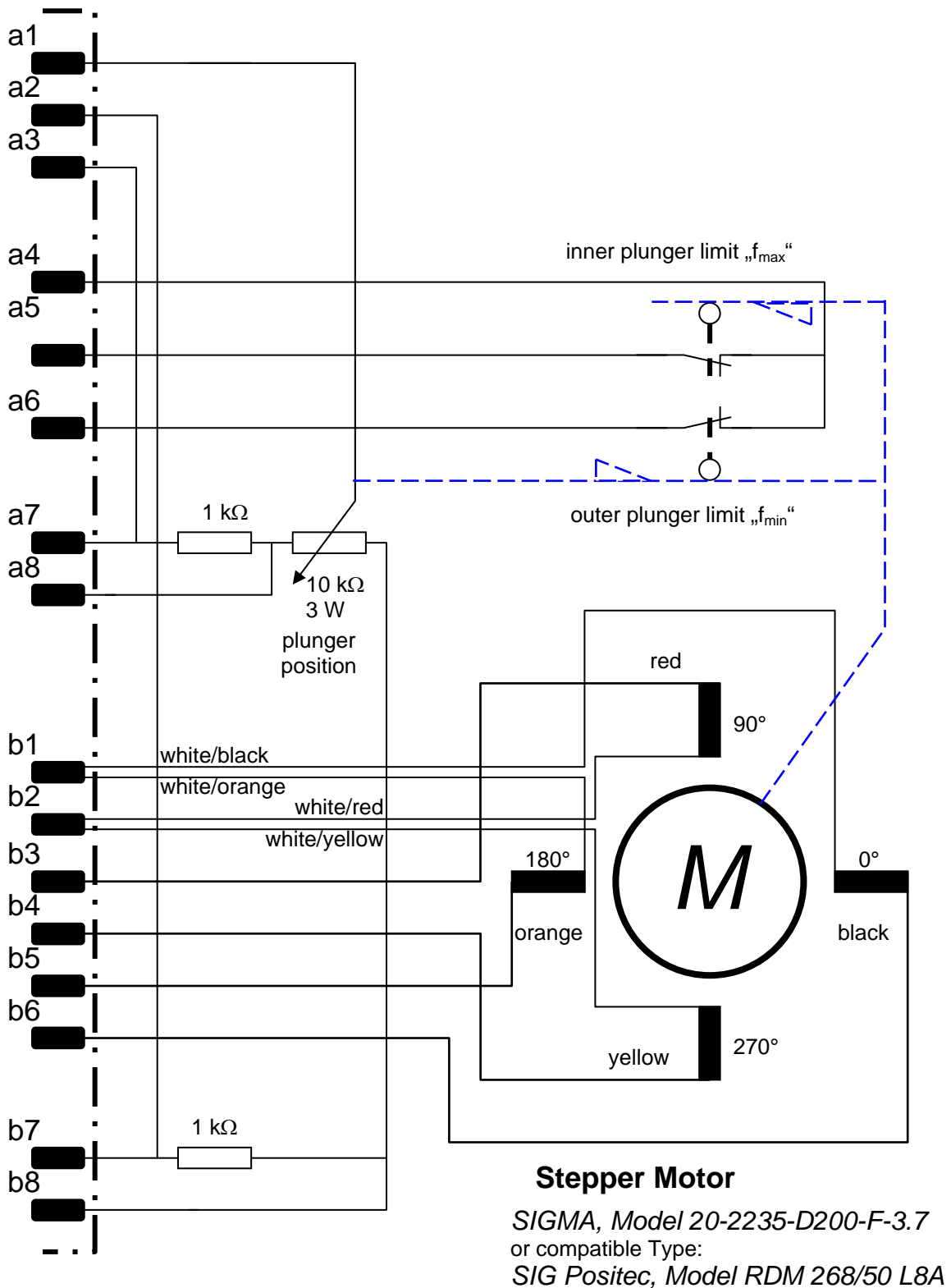
DATA SHEET

Cavity Tuning Plunger (Feinabstimmung)

DESY-MHFe, Vers. 3.0

March 2013

Wiring Diagram of the 16 pin plunger connector type: *Tuchel*



DATA SHEET

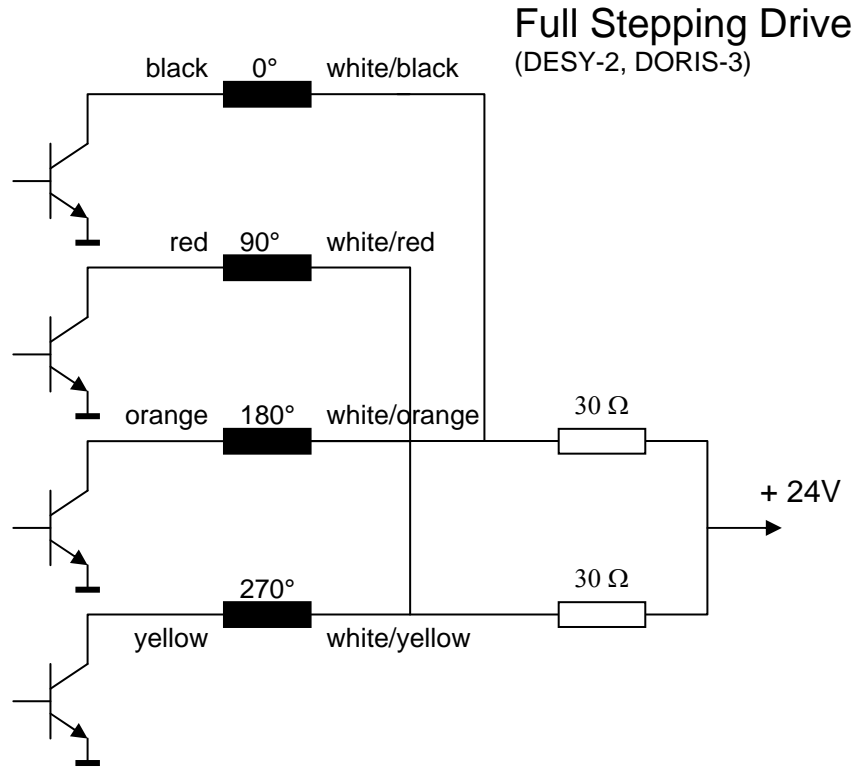
Cavity Tuning Plunger (Feinabstimmung)

DESY-MHFe, Vers. 3.0

March 2013

Principle of Stepper Motor Drives

Step #			
1	2	3	4
H	L	L	H
H	H	L	L
L	H	H	L
L	L	H	H



Step #							
1/2	1	3/2	2	5/2	3	7/2	4
H	H	L	L	L	L	L	H
L	H	H	H	L	L	L	L
L	L	L	H	H	H	L	L
L	L	L	L	L	H	H	H

