1. contact details

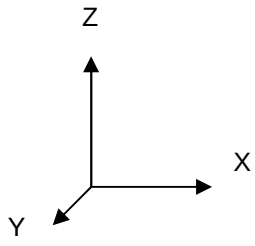
company:		address:	
contact person:		phone:	
email:		date:	
Schunk customer no.:		Schunk contact person:	

2. Definition of the project

Please describe the project exactly.

3. Arrangement of the application

Please sketch the requested operation under specification of dimensions and mass of the seperate parts.



4. Requirement information (please check)

☐ Single application	☐ Technical improvement
☐ Series, quantity per year:	☐ Reduction of expenses
☐ New construction	☐

Please send form to: Automationsolution@de.schunk.com

5. work piece

weight of work piece:	[g]		
balance point (from bottom side PPU head):	[mm]	in X:	in Y: in Z:

6. Pick&Place PPU-E

PPU size (if known):	☐ PPU-E 15	☐ PPU-E 30	☐ PPU-E 50
hor. stroke: PPU-E 15 max.150mm / PPU-E 30 max.320mm / PPU-E50 max.280mm	in [mm]:		
vert. stroke: PPU-E 15 max.60mm / PPU-E 30 max.100mm / PPU-E50 max.150mm	in [mm]:		
connections PPU head: without= no hybrid cable; n/n times: n-times pneumatic/n-times electrical with hybrid cable; swivel unit / vacuum with hybrid cable	☐ without	☐ 2/2 times	☐ 4/4 times
	☐ 6/6 times	☐ swivel unit	☐ vacuum
Mechanical interface (internal = channel inside adapter / hose = fitting w. hose)	☐ internal	☐ hose	☐ system: LM
Encoder type (Hiperface and SSI are absolute encoder)	☐ Hiperface	☐ SSI	☐ 1Vss
Holding brake / load compensation for Z-axis	☐ without	☐ holding brake	☐ load compen.
other: e.g. definition of c-axis (ERD or MRDS)			

7. application data

load	additional force (e.g. process force) [N]			
	force direction of the add. force (axis & direction e.g. Z+)			
dynamics	velocity V_{max} [m/s]			
	acceleration a_{max} [m/s²]			
operating data	total cycle time (incl. dwell time) [s]			
	moving time (part of total cyc. time) [s]			
	Cycle per minute cycle/min			
	operating hours per year [h] per [days]			hour per days
accuracy	repeatability [mm]			
drive controller	drive	Bosch Rexroth	Indradrive	☐ CS ☐ Basic ☐ Advanced
		Siemens	Sinamics	☐
		other:		
	interface			☐ Profibus ☐ Profinet ☐ EtherCat ☐ Sercos III ☐ Parallel ☐
	safety function			☐ STO ☐
	cable length (Sinamics only in 1-3m)			☐ 1m ☐ 2m ☐ 3m ☐ 5m ☐ 10m ☐ 15m ☐ 20m

8. additional

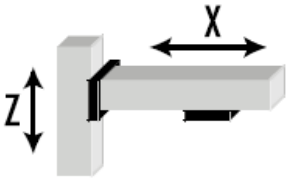
environmental conditions	temperature [°C]	
	Humidity [%]	
	dirt, interference fields, site	
	interfering contour	
documentation	☐ Schunk standard design Language: German / Scale: Installation instruction, Drawing(s), bill of material / Shipping mode: CD-Rom with PDFs	
	☐ Special design (chargeable) Definition:	
regulations	(Resources regulations,..):	

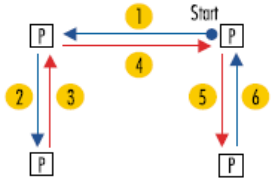
9. Cycle data

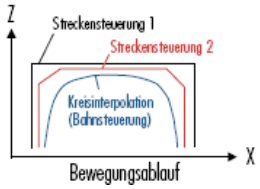
In order to calculate the best possible linear motor drive for your application, it is important to define the intended application as accurately as possible in advance.

Example:

pick & place - application



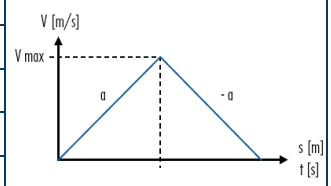




10. Cycle table (each system axis is examined individually)

cycle step	axis	stroke [mm]	permitted travel time [s]	dwell time after positioning [s]	payload [kg]
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					

11. Basic calculation data

definitions						Definitions
velocity	v	[m/s]	weight-slide with motor	m_{eig}	[kg]	
acceleration	a	[m/s²]	add. weight-user weight	m_{zus}	[kg]	
stroke	s	[m]	counterforce	F_{geg}	[N or. kgm/s²]	
time	t	[s]	theoretical required force	F_{teo}	[N or. kgm/s²]	
total moved mass	m_{ges}	[kg]				

12. Formulas

velocity	$v = a \cdot t = \sqrt{2a \cdot s}$	acceleration	$a = 2s / t^2 = v / t$
stroke	$s = a \cdot t^2 / 2 = v \cdot t / 2$	time	$t = V / a = 2s / v$
moved mass	$m_{ges} = m_{eig} + m_{zus}$	force	$F_{teo} = m_{ges} \cdot a + F_{geg}$
motor force	F = (F_{teo} + control reserve) · dynamic correction factor – duty cycle factor		