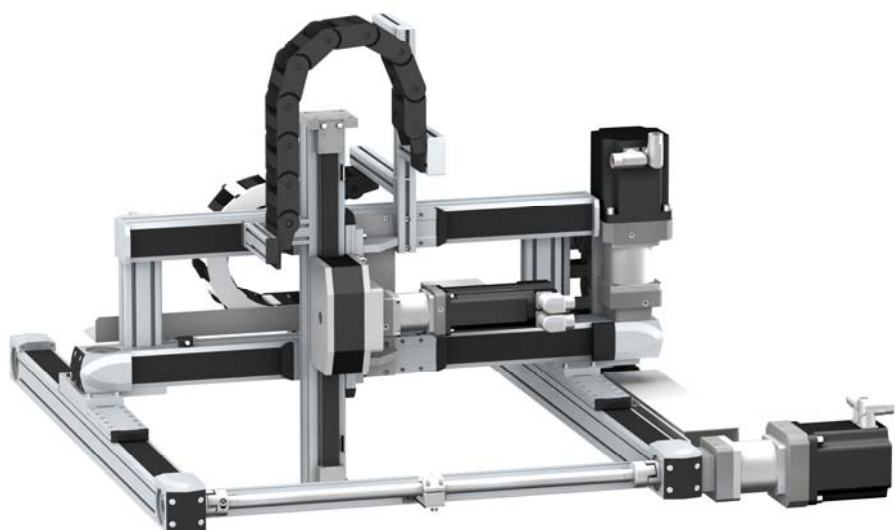


# MAX Multi axes

Lexium Linear Motion

Product Manual

V1.00, 26.07.2009



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**BERGER LAHR**

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## Important information

This manual is part of the product.

Carefully read this manual and observe all instructions.

Keep this manual for future reference.

Hand this manual and all other pertinent product documentation over to all users of the product.





Some products are not available in all countries.  
For information on the availability of products, please consult the catalog.

Subject to technical modifications without notice.

All details provided are technical data which do not constitute warranted qualities.

Most of the product designations are registered trademarks of their respective owners, even if this is not explicitly indicated.

## Table of content

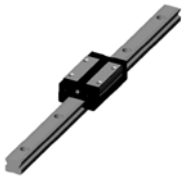
	Page
	<b>MAXH</b> .....6 Double axes with support axis
	<b>MAXS</b> ..... 16 Double axes with shaft driven support axis
	<b>MAXP</b> ..... 28 Linear positioners
	<b>MAXR</b> ..... 46 Portal robots 2 axes ..... 46 Portal robots 3 axes ..... 62

# Multi axes systems MAX

## Multi axes systems



Portal robot 3 axes



Profile rail guide



Roller guide

### Product description

The Schneider Electric Motion MAX-Multi Axes Systems are composed of combinations of toothed-belt linear modules and differ in kind, size and arrangement of the combined axes.

Depending on the automation application, double axes combinations, linear positioner, or portal robots with two or three axes can be implemented.

### Consistency

MAX Multi Axes Systems are available according to the application requirements (load, stroke, dynamic and positioning speed) in different sizes as well as in roller or profile rail guidance.

Stroke lengths, millimetre-exactly available, offer a very high flexibility in the automation planning and automation application

### Flexibility

Schneider Electric Motion offers also individual or specific system solutions based on standard Multi Axes Systems.

### Your benefits

One-stop shopping: from a simple linear module to complete systems of tuned components.

## Applications

The MAX-Multi Axes Systems, based on toothed-belt linear modules, are used for moving loads dynamically and at high positioning speed.

The system features of the different Multi Axes Systems are described in the suitable catalogue segments.

### Multi Axes Systems application examples:



Portal robot 2 axes (MAXR•2)



Linearpositioner (MAXP)

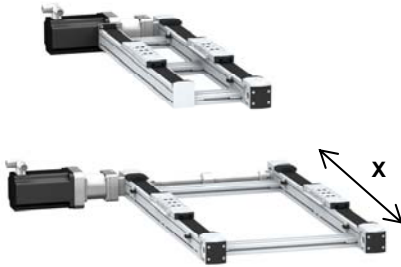


Customer specific MAX solution

# Multi axes systems MAX

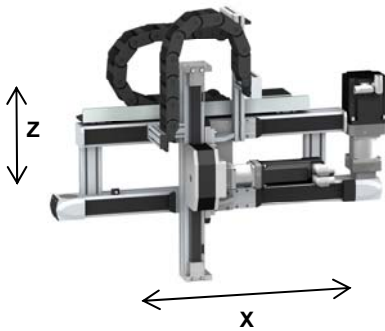
## Product overview

### Double axes



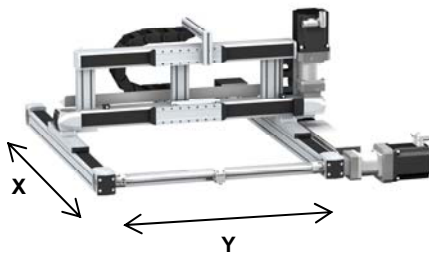
		X-Axis	Y-Axis	Z-Axis	typ. payload (kg)
Type	Guide type	max. stroke (mm)			
MAXH	MAXH1BR	Roller guide	3000		12
	MAXH2Bx	Roller guide	5500		20
		Ball guide	5500		65
	MAXH3Bx	Roller guide	5500		40
		Ball guide	5500		150
MAXS	MAXH4BB	Ball guide	5500		250
	MAXS1BR	Roller guide	3000		15
	MAXS2Bx	Roller guide	5500		25
		Ball guide	5500		75
	MAXS3Bx	Roller guide	5500		50
		Ball guide	5500		180
	MAXS4BB	Ball guide	5500		300

### Linear positioners



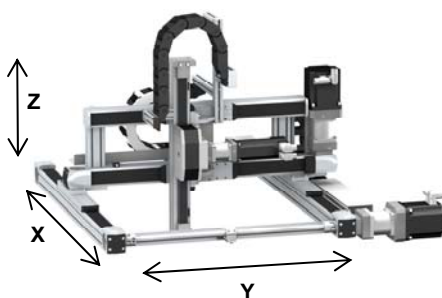
		X-Axis	Y-Axis	Z-Axis	typ. payload (kg)
Type	Guide type	max. stroke (mm)		max. stroke (mm)	
MAXP	MAXP12-H41-C31	Roller guide	3000	200	2
	MAXP12-H41-C41	Roller guide	4000	400	4
	MAXP22-H42-C32	Roller guide	4000	300	4
		Ball guide	4000	300	5
	MAXP22-H42-C42	Roller guide	4000	600	6
		Ball guide	4000	600	15
	MAXP32-H43-C34	Roller guide	5500	500	14
		Ball guide	5500	500	18
	MAXP32-H43-C43	Roller guide	5500	800	18
		Ball guide	5500	800	25
	MAXP42-H44-C44	Ball guide	5500	1200	50

### Portal robots 2 axes



		X-Axis	Y-Axis	Z-Axis	typ. payload (kg)
Type	Guide type	max. stroke (mm)	max. stroke (mm)		
MAXR2	MAXR12-S41-P41	Roller guide	3000	1200	5
	MAXR12-S41-H41	Roller guide	3000	1200	8
	MAXR22-S42-P42	Roller guide	5500	1500	5
		Ball guide	5500	1500	12
	MAXR22-S42-H42	Roller guide	5500	1500	15
		Ball guide	5500	1500	30
	MAXR32-S43-P43	Roller guide	5500	1500	11
		Ball guide	5500	1500	30
	MAXR32-S43-H43	Roller guide	5500	1500	40
		Ball guide	5500	1500	80
	MAXR42-S44-H44	Ball guide	5500	1500	130

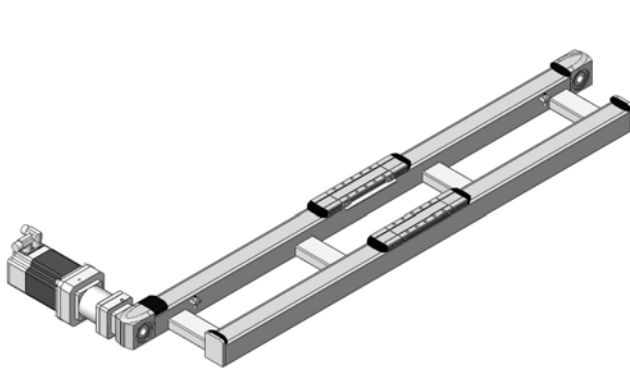
### Portal robots 3 axes



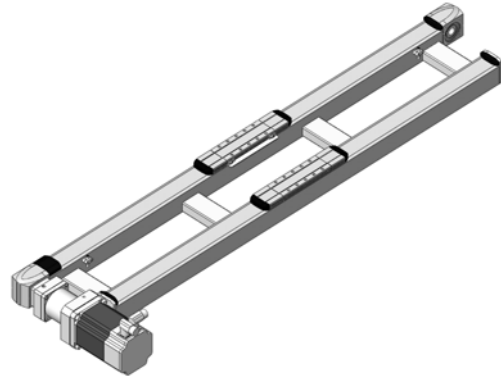
			X-Axis	Y-Axis	Z-Axis	
	Type	Guide type	max. stroke (mm)	max. stroke (mm)	max. stroke (mm)	typ. payload (kg)
MAXR3	MAXR13-S41-H41-C31	Roller guide	3000	1200	200	2
	MAXR13-S41-H41-C41	Roller guide	3000	1200	400	4
	MAXR23-S42-H42-C32	Roller guide	5500	1500	300	4
		Ball guide	5500	1500	300	5
	MAXR23-S42-H42-C42	Roller guide	5500	1500	600	6
		Ball guide	5500	1500	600	15
	MAXR33-S43-H43-C34	Roller guide	5500	1500	500	14
		Ball guide	5500	1500	500	18
	MAXR33-S43-H43-C43	Roller guide	5500	1500	500	9
		Ball guide	5500	1500	500	25
MAXR43-S44-H44-C44	Ball guide	5500	1500	1200	50	

## MAXH

Combination of a driven axis and a non driven support axis



Motor attachment outside



Motor attachment inside

### MAXH1BR

Technical data  
Dimensional drawings

### MAXH2BR / MAXH2BB

Technical data  
Dimensional drawings

### MAXH3BR / MAXH3BB

Technical data  
Dimensional drawings

### MAXH4BB

Technical data  
Dimensional drawings

## Introduction

The **MAXH double axes** combine a driven- and a non driven support-axis based on toothed-belt axes.

MAXH double axes are available with roller guides and ball guides.

Toothed-belt axes are characterised by long strokes, high dynamic response and high positioning speed.

Mostly these combinations are used for moving large loads and higher torques.

Load, force and moment values in the data sheets aimed for stiffen **mechanical related carriages** at customer side and a centrically attached load.

## Special features

- High positioning speed
- High dynamic response
- Large stroke length
- User-friendly structures
  - + Easy system integration with section technology
  - + Carriages with holes and locating dowels for easy assembling.
  - + Lubrication at lubrication nipples on both carriages sides
  - + Easy motor attachment with quick-coupling system
  - + stroke length available in millimetre accuracy
  - + Distance between both axes available in a wide distance
  - + Sensors can be moved anywhere in T-section slots

## Options

- Roller or ball guidance
- Corrosion-resistant
- Teflon cover band
- Motor attachment inside and outside
- Sensors in various designs
- Antistatic toothed belts

## Property-related application examples

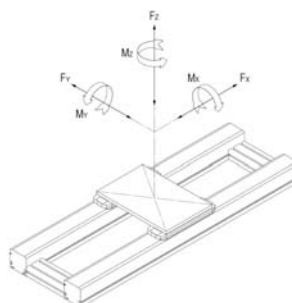
- Positioning over long distance, e.g. pick & place applications
- Positioning of heavy and high dimension loads mounted on the stiff mechanical related carriages, realised at customer side.

## Product overview

Type	Guide type	stroke (mm)	Typ. payload (kg)
<b>MAXH1BR</b>	Roller guide	3000	12
<b>MAXH2Bx</b>	Roller guide	5500	20
	Ball guide	5500	65
<b>MAXH3Bx</b>	Roller guide	5500	40
	Ball guide	5500	150
<b>MAXH4BB</b>	Ball guide	5500	250

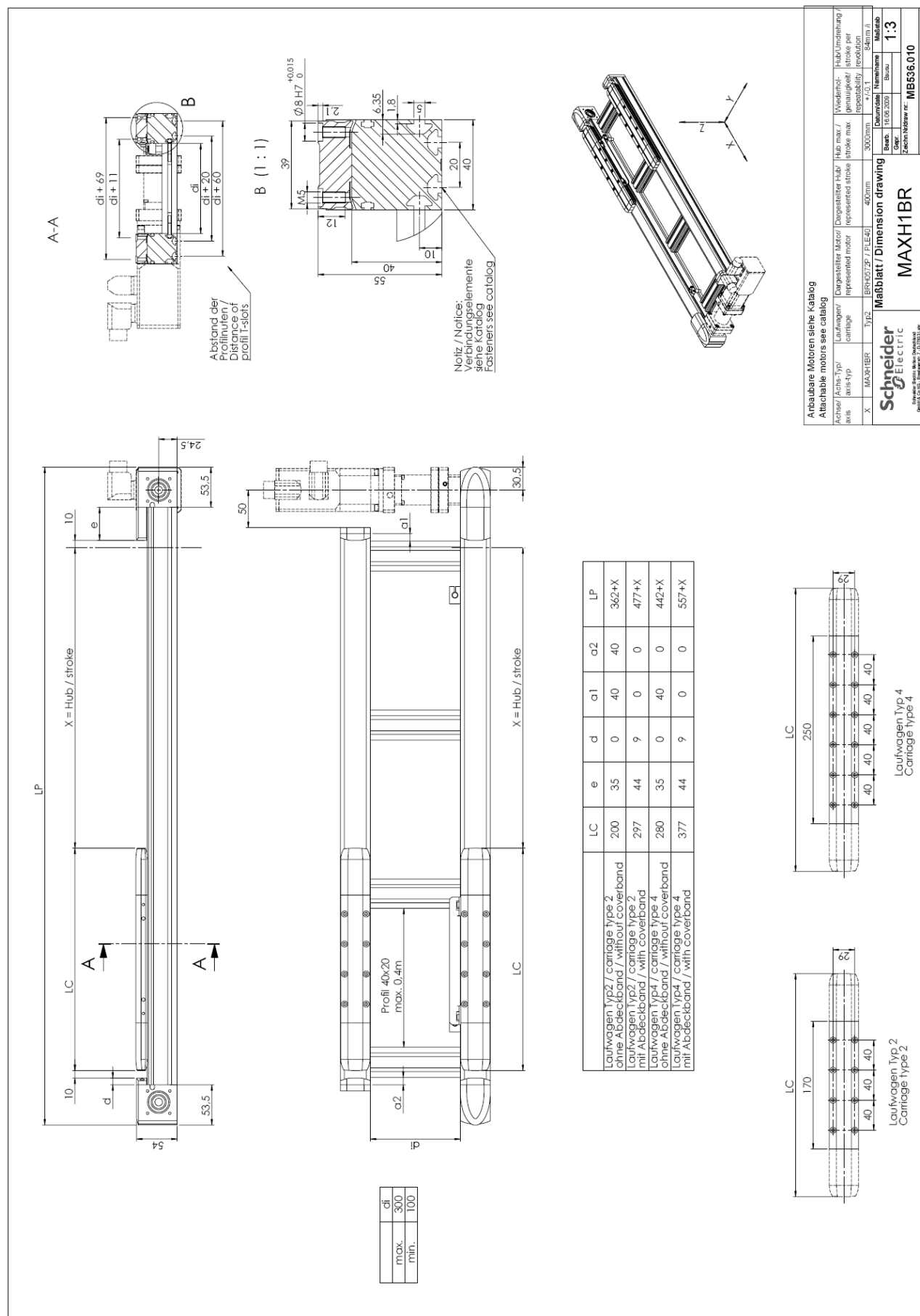
Type designation portalaxis		MAXH1BR		
Drive system		Toothed belt 15HTD-3M		
Guide type		Roller guide (W06)		
Typical payload	kg	12		
Carriage type			Typ2	Typ4
Carriage length	mm		297 / 200	377 / 280
Drive constant	mm/rev.	84		
Effective diameter toothed belt wheel	mm	26,738		
Max. force $F_{x\max}$ 4)	N	300		
Max. speed 3)	m/s	8		
Max. acceleration 3)	m/s <sup>2</sup>	20		
Max. drive torque $M_{\max}$ 4)	Nm	4		
No load breakaway torque 0-stroke axis	Nm	0,4		
No load breakaway torque per add. pair of carriage 5)	Nm	0,2		
Moment of inertia 0-stroke axis	kgcm <sup>2</sup>		2,2 / 1,8	2,6 / 2,2
Moment of inertia per add. pair of carriage	kgcm <sup>2</sup>		2,0 / 1,6	2,4 / 2,0
Moment of inertia per m stroke	kgcm <sup>2</sup> /m	0,1		
Moment of inertia per kg payload	kgcm <sup>2</sup> /kg	1,8		
Max. force $F_{y\text{dynmax}}$ 4)	N	660		
Max. force $F_{z\text{dynmax}}$ 4)	N	430		
Max. torque $M_{y\text{dynmax}}$ 4)	Nm		11	28
Max. torque $M_{z\text{dynmax}}$ 4)	Nm		17	43
Mass of 0-stroke axis	kg		3,7 / 2,9	4,1 / 3,3
Mass of add. pair of carriage (incl. profile) 5)	kg		2,6 / 1,8	3,2 / 2,4
Mass of per m stroke	kg/m	4,45		
Moving mass pair of carriage 5)	kg		1,2 / 1,0	1,4 / 1,2
Max. stroke 1)	mm		2880 / 3000	2800 / 2920
Min. stroke 2)	mm	125		
min. distanz between profile	mm	100		
max. distanz between profile	mm	300		
Repeate accuracy 3)	mm	± 0,1		
Diameter motor shaft	mm	6,35 ... 14		
Profile cross section (W x H)	mm	40 x 40		
Axial planar moment of inertia ( $I_x / I_y$ )	mm <sup>4</sup>	76.640 / 108.930		
Elasticity modul (aluminium)	N/mm <sup>2</sup>	72000		
Max. ambient temperature	°C	0 ... + 50		
Load ratings guide system (Cstat / Cdyn)	N	2230 / 3950		
Lifetime reference value	km	30000		

- 1) Greater stroke length on request
- 2) Guaranteed lubrication of guide elements, shorter stroke length on request
- 3) Dependent on load, stroke and shaft length
- 4) The maximum permissible dynamic forces and torques are reduced with increasing speed.
- 5) Measured at 0.1 m/s



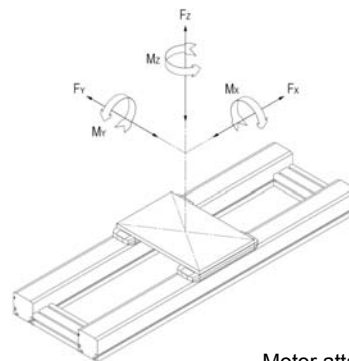
Motor attachment and dimensions  
see Portal Axes PAS manuals



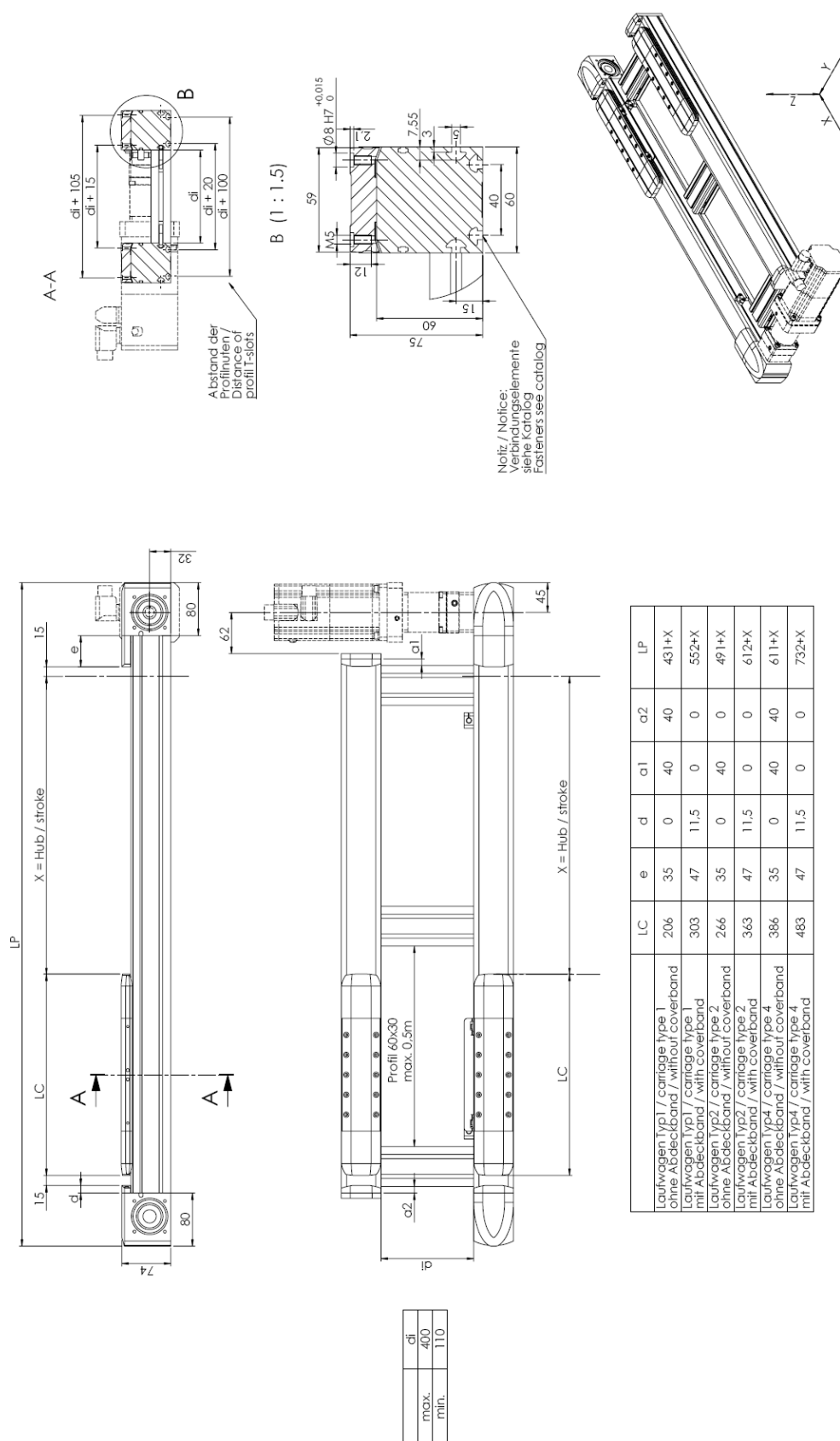


Type designation portalaxis		MAXH2BR			MAXH2BB		
Drive system		Toothed belt 25HTD-5M			Toothed belt 25HTD-5M		
Guide type		Roller guide (V06)			Ball guide (SHS15V)		
Typical payload	kg	20			65		
Carriage type		Typ1	Typ2	Typ4	Typ1	Typ2	Typ4
Carriage length	mm	303 / 206	363 / 266	483 / 386	303 / 206	363 / 266	483 / 386
Drive constant	mm/rev.	155			155		
Effective diameter toothed belt wheel	mm	49,338			49,338		
Max. force $F_{x\max}$ 4)	N	800			800		
Max. speed 3)	m/s	8			5		
Max. acceleration 3)	m/s <sup>2</sup>	20			20		
Max. drive torque $M_{\max}$ 4)	Nm	20			20		
No load breakaway torque 0-stroke axis	Nm	1,4			2,6		
No load breakaway torque per add. pair of carriage 5)	Nm	0,4			1,6		
Moment of inertia 0-stroke axis	kgcm <sup>2</sup>	15,3 / 13,1	18,0 / 15,8	23,6 / 21,4	16,9 / 14,7	19,0 / 16,8	24,6 / 22,4
Moment of inertia per add. pair of carriage	kgcm <sup>2</sup>	13,0 / 10,8	15,8 / 13,6	21,4 / 19,2	14,6 / 12,4	16,8 / 14,6	22,4 / 20,2
Moment of inertia per m stroke	kgcm <sup>2</sup> /m	1,2			1,2		
Moment of inertia per kg payload	kgcm <sup>2</sup> /kg	6,1			6,1		
Max. force $F_{y\text{dynmax}}$ 4)	N	660			2810		
Max. force $F_{z\text{dynmax}}$ 4)	N	430			2810		
Max. torque $M_{y\text{dynmax}}$ 4)	Nm	18	31	56	74	194	362
Max. torque $M_{z\text{dynmax}}$ 4)	Nm	28	48	87	74	194	362
Mass of 0-stroke axis	kg	8,0 / 7,0	9,5 / 8,0	11,5 / 10,0	9,5 / 7,8	10,5 / 8,8	12,5 / 10,8
Mass of add. pair of carriage (incl. profile) 5)	kg	5,0 / 3,8	6,0 / 4,8	7,8 / 6,6	5,8 / 4,4	6,8 / 5,4	8,8 / 7,4
Mass of per m stroke	kg/m	9,0			11,0		
Moving mass pair of carriage 5)	kg	2,2 / 1,8	2,6 / 2,4	3,6 / 3,2	2,4 / 2,0	2,8 / 2,4	3,6 / 3,2
Max. stroke 1)	mm	5540 / 5660	5480 / 5600	5360 / 5480	5540 / 5660	5480 / 5600	5360 / 5480
Min. stroke 2)	mm	130			9		
min. distanz between profile	mm	110			110		
max. distanz between profile	mm	400			400		
Repeate accuracy 3)	mm	± 0,1			± 0,1		
Diameter motor shaft	mm	6,35 ... 20			6,35 ... 20		
Profile cross section (W x H)	mm	60 x 60			60 x 60		
Axial planar moment of inertia ( $I_x / I_y$ )	mm <sup>4</sup>	435.390 / 651.610			435.390 / 651.610		
Elasticity modul (aluminium)	N/mm <sup>2</sup>	72000			72000		
Max. ambient temperature	°C	0 ... +50			0 ... +50		
Load ratings guide system (Cstat / Cdyn)	N	2230 / 3950			24200 / 14200		
Lifetime reference value	km	30000			30000		

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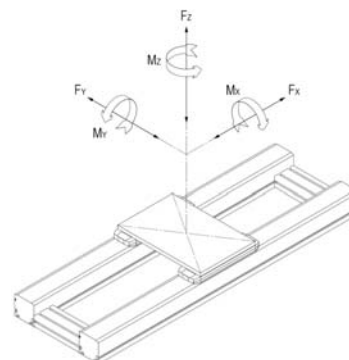
Motor attachment and dimensions  
see Portal Axes PAS manuals

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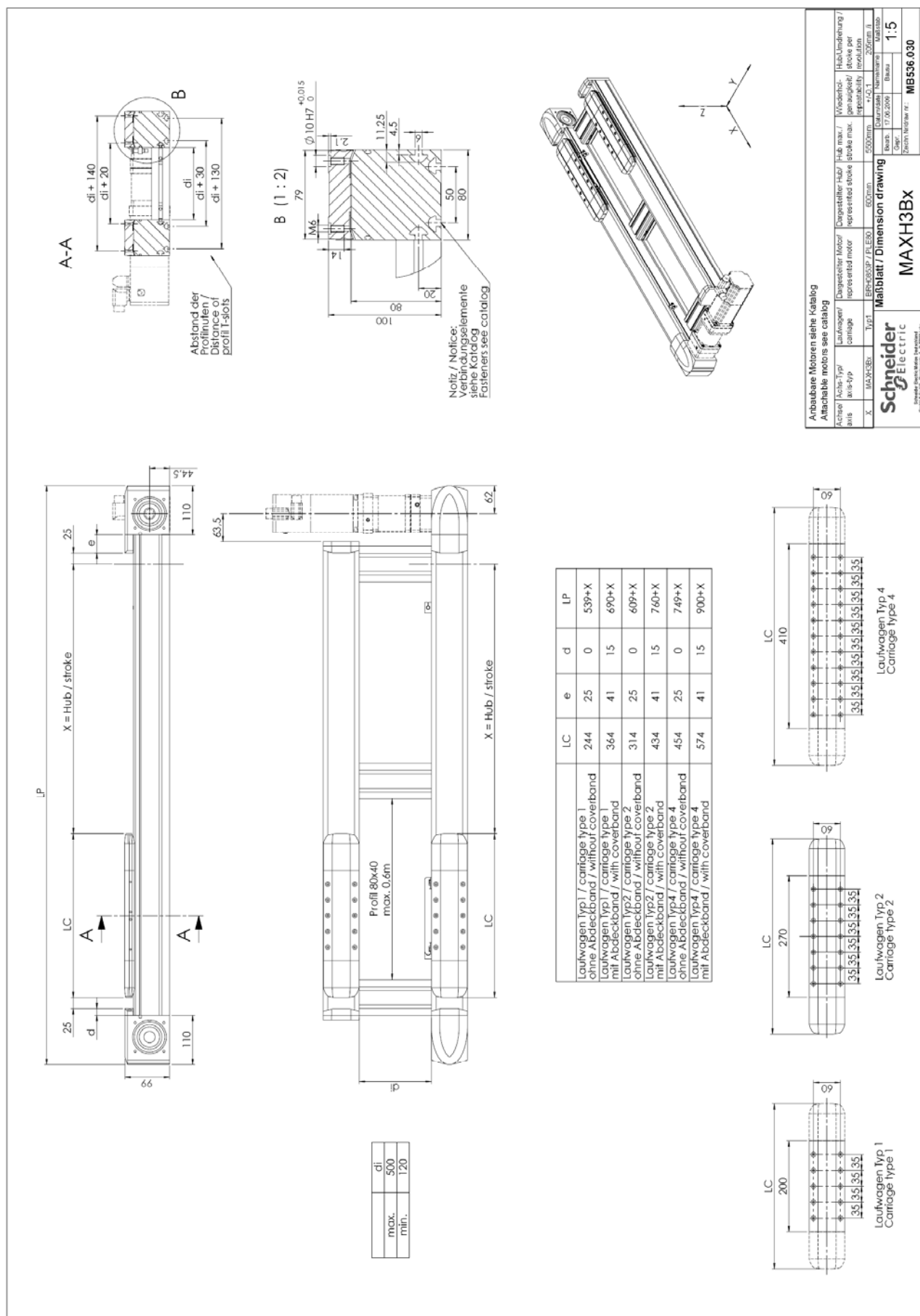
	LC	e	d	$\alpha 1$	$\alpha 2$	LP
Laufwagen typ1 / carriage type 1 ohne Abdeckband / without coverband	206	35	0	40	40	431+X
Laufwagen typ1 / carriage type 1 mit Abdeckband / with coverband	303	47	11.5	0	0	552+X
Laufwagen typ2 / carriage type 2 ohne Abdeckband / without coverband	266	35	0	40	0	491+X
Laufwagen typ2 / carriage type 2 mit Abdeckband / with coverband	363	47	11.5	0	0	612+X
Laufwagen typ4 / carriage type 4 ohne Abdeckband / without coverband	386	35	0	40	40	611+X
Laufwagen typ4 / carriage type 4 mit Abdeckband / with coverband	483	47	11.5	0	0	732+X

Type designation portalaxis		MAXH3BR			MAXH3BB		
Drive system		Toothed belt 30HTD-5M			Toothed belt 30HTD-5M		
Guide type		Roller guide (W10)			Ball guide (SHS20V)		
Typical payload	kg	40			150		
Carriage type		Typ1	Typ2	Typ4	Typ1	Typ2	Typ4
Carriage length	mm	364 / 244	434 / 314	574 / 454	364 / 244	434 / 314	574 / 454
Drive constant	mm/rev.	205			205		
Effective diameter toothed belt wheel	mm	65,254			65,254		
Max. force $F_{x\max}$ 4)	N	1100			1100		
Max. speed 3)	m/s	8			5		
Max. acceleration 3)	m/s <sup>2</sup>	20			20		
Max. drive torque $M_{\max}$ 4)	Nm	36			36		
No load breakaway torque 0-stroke axis	Nm	2,8			4,8		
No load breakaway torque per add. pair of carriage 5)	Nm	0,6			2,6		
Moment of inertia 0-stroke axis	kgcm <sup>2</sup>	58,1 / 49,4	67,7 / 59,0	88,0 / 78,3	61,7 / 53,0	69,7 / 61,0	90,1 / 80,6
Moment of inertia per add. pair of carriage	kgcm <sup>2</sup>	48,8 / 40,2	58,2 / 49,8	77,8 / 69,2	52,4 / 43,8	60,4 / 51,8	79,9 / 71,4
Moment of inertia per m stroke	kgcm <sup>2</sup> /m	2,5			2,5		
Moment of inertia per kg payload	kgcm <sup>2</sup> /kg	10,7			10,7		
Max. force $F_{y\text{dynmax}}$ 4)	N	1760			4410		
Max. force $F_{z\text{dynmax}}$ 4)	N	1040			4410		
Max. torque $M_{y\text{dynmax}}$ 4)	Nm	51	87	160	162	379	687
Max. torque $M_{z\text{dynmax}}$ 4)	Nm	86	148	271	162	379	687
Mass of 0-stroke axis	kg	18,8 / 15,4	20,8 / 17,4	24,8 / 21,4	20,7 / 16,9	22,7 / 18,9	26,7 / 22,9
Mass of add. pair of carriage (incl. profile) 5)	kg	10,4 / 7,6	12,4 / 9,6	16,4 / 13,6	11,8 / 8,6	14,0 / 10,8	18,2 / 15,0
Mass of per m stroke	kg/m	15,8			18,8		
Moving mass pair of carriage 5)	kg	4,6 / 3,8	5,6 / 4,8	7,4 / 6,6	5,0 / 4,2	5,8 / 5,0	7,6 / 6,8
Max. stroke 1)	mm	5450 / 5600	5380 / 5530	5240 / 5390	5450 / 5600	5380 / 5530	5240 / 5390
Min. stroke 2)	mm	175			11		
min. distanz between profile	mm	120			120		
max. distanz between profile	mm	500			500		
Repeate accuracy 3)	mm	± 0,1			± 0,1		
Diameter motor shaft	mm	12 ... 25			12 ... 25		
Profile cross section (W x H)	mm	80 x 80			80 x 80		
Axial planar moment of inertia ( $I_x / I_y$ )	mm <sup>4</sup>	1.285.260 / 1.867.210			1.285.260 / 1.867.210		
Elasticity modul (aluminium)	N/mm <sup>2</sup>	72000			72000		
Max. ambient temperature	°C	0 ... + 50			0 ... + 50		
Load ratings guide system (Cstat / Cdyn)	N	4850 / 8500			38400 / 22300		
Lifetime reference value	km	30000			30000		

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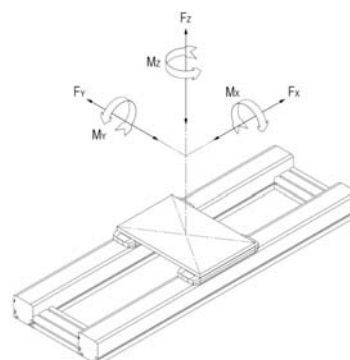


Motor attachment and dimensions  
see Portal Axes PAS manuals

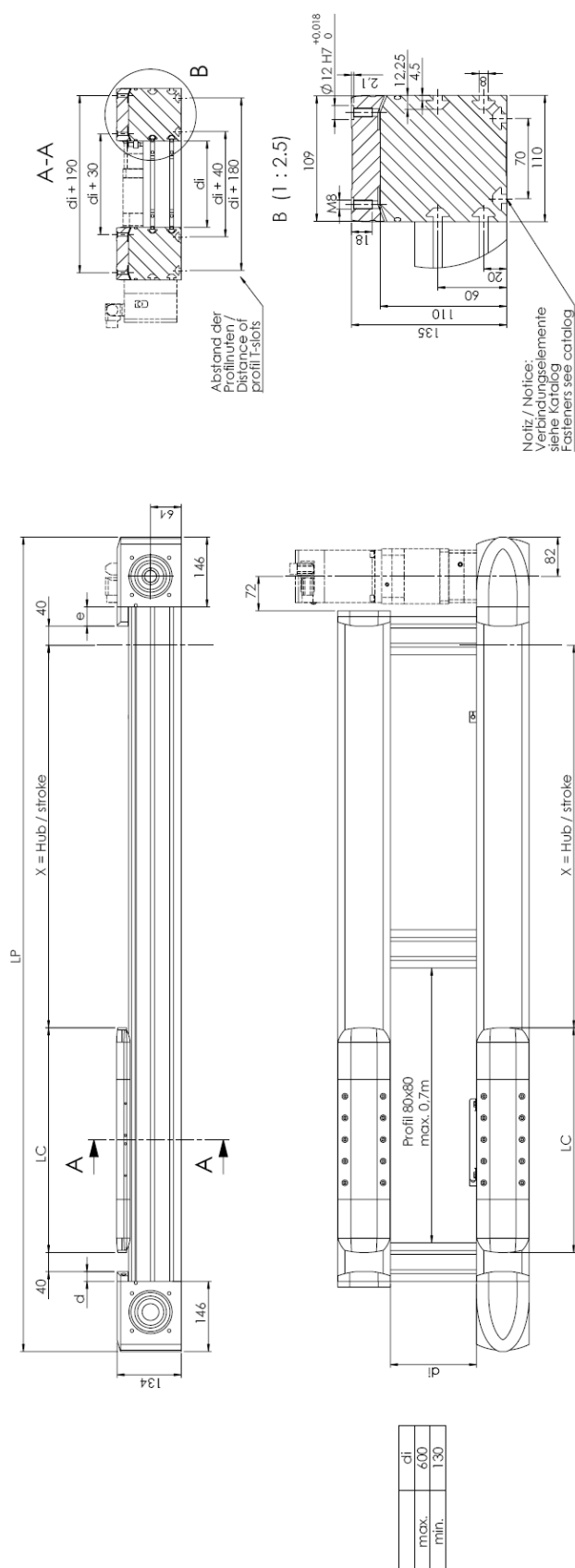


Type designation portalaxis		MAXH4BB		
Drive system		Toothed belt 50HTD-8M		
Guide type		Ball guide (SHS25V)		
Typical payload	kg	250		
Carriage type		Typ1	Typ2	Typ4
Carriage length	mm	470 / 310	560 / 400	740 / 580
Drive constant	mm/rev.	264		
Effective diameter toothed belt wheel	mm	84,034		
Max. force $F_{x\max}$ 4)	N	2600		
Max. speed 3)	m/s	5		
Max. acceleration 3)	m/s <sup>2</sup>	20		
Max. drive torque $M_{\max}$ 4)	Nm	110		
No load breakaway torque 0-stroke axis	Nm	6,6		
No load breakaway torque per add. pair of carriage 5)	Nm	4,2		
Moment of inertia 0-stroke axis	kgcm <sup>2</sup>	210,8 / 178,6	242,4 / 210,2	306,8 / 274,6
Moment of inertia per add. pair of carriage	kgcm <sup>2</sup>	179,2 / 147,0	210,8 / 178,6	275,2 / 243,0
Moment of inertia per m stroke	kgcm <sup>2</sup> /m	11,2		
Moment of inertia per kg payload	kgcm <sup>2</sup> /kg	17,7		
Max. force $F_{y\text{dyn}\max}$ 4)	N	6270		
Max. force $F_{z\text{dyn}\max}$ 4)	N	6270		
Max. torque $M_{y\text{dyn}\max}$ 4)	Nm	256	655	1209
Max. torque $M_{z\text{dyn}\max}$ 4)	Nm	256	655	1209
Mass of 0-stroke axis	kg	46,1 / 37,4	50,9 / 42,2	60,4 / 51,7
Mass of add. pair of carriage (incl. profile) 5)	kg	25,8 / 18,6	30,6 / 23,4	40,2 / 33,0
Mass of per m stroke	kg/m	33,2		
Moving mass pair of carriage 5)	kg	10,2 / 8,4	12,0 / 10,2	15,6 / 13,8
Max. stroke 1)	mm	5310 / 5510	5220 / 5420	5040 / 5240
Min. stroke 2)	mm	13		
min. distanz between profile	mm	130		
max. distanz between profile	mm	600		
Repeate accuracy 3)	mm	± 0,1		
Diameter motor shaft	mm	12 ... 32		
Profile cross section (W x H)	mm	110 x 110		
Axial planar moment of inertia ( $I_x$ / $I_y$ )	mm <sup>4</sup>	4.713.490 / 6.624.690		
Elasticity modul (aluminium)	N/mm <sup>2</sup>	72000		
Max. ambient temperature	°C	0 ... + 50		
Load ratings guide system (Cstat / Cdyn)	N	52400 / 31700		
Lifetime reference value	km	30000		

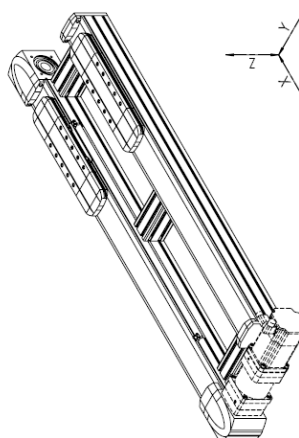
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- 4) The maximum permissible dynamic forces and torques are reduced with increasing speed.
- 5) Measured at 0.1 m/s



Motor attachment and dimensions  
see Portal Axes PAS manuals

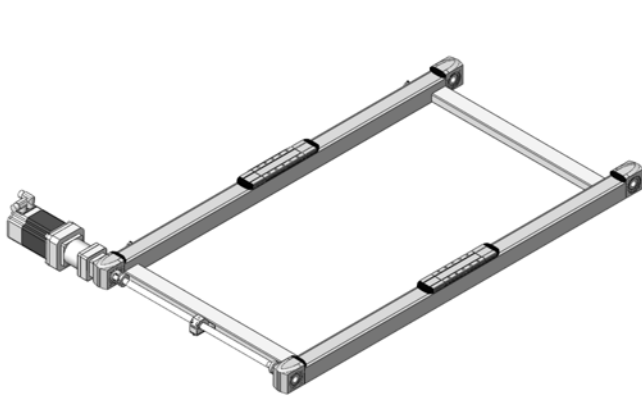


	LC	e	d	LP
Lautwagen typ1 / carriage type 1 ohne Abdeckband / without coverband	310	20	0	702+X
Lautwagen typ1 / carriage type 1 mit Abdeckband / with coverband	470	40	20	902+X
Lautwagen typ2 / carriage type 2 ohne Abdeckband / without coverband	400	20	0	792+X
Lautwagen typ2 / carriage type 2 mit Abdeckband / with coverband	560	40	20	992+X
Lautwagen typ4 / carriage type 4 ohne Abdeckband / without coverband	580	20	0	972+X
Lautwagen typ4 / carriage type 4 mit Abdeckband / with coverband	740	40	20	1172+X

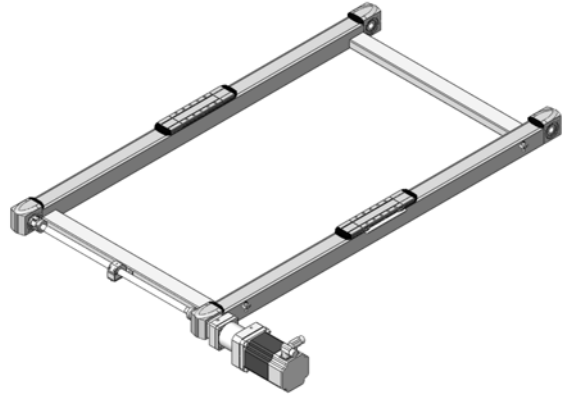
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## MAXS

Combination of a driven axis with a shaft driven support axis



Motor attachment left



Motor attachment right

### MAXS1BR

Technical data  
Dimensional drawings

### MAXS2BR / MAXS2BB

Technical data  
Dimensional drawings

### MAXS3BR / MAXS3BB

Technical data  
Dimensional drawings

### MAXS4BB

Technical data  
Dimensional drawings

### Type code



## Introduction

The **MAXS double axes** combine a driven and a shaft driven support axis based on toothed-belt axes.

MAXS double axes are available with roller guides and ball guides.

Toothed-belt axes are characterised by long strokes, high dynamic response and high positioning speed.

Mostly these combinations are used for moving dynamically large loads and high torques.

Load, force and moment values in the data sheets aimed for stiffen **mechanical related carriages** at customer side and a centrally attached load.

## Special features

- High positioning speed
- High dynamic response
- Large stroke length
- User-friendly structures
  - + Easy system integration with section technology
  - + Carriages with holes and locating dowels for easy assembling.
  - + Lubrication at lubrication nipples on both carriages sides
  - + Easy motor attachment with quick-coupling system
  - + stroke length available in millimetre accuracy
  - + Distance between both axes available in a wide distance
  - + Sensors can be moved anywhere in T-section slots

## Options

- Roller or ball guidance
- Corrosion-resistant
- Teflon cover band
- Motor attachment inside and outside
- Sensors in various designs
- Antistatic toothed belts

## Property-related application examples

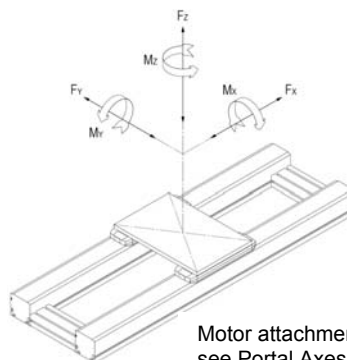
- Positioning over long distance, e.g. pick & place applications
- Positioning of high dimension loads with a high acceleration e.g. containers.

## Product overview

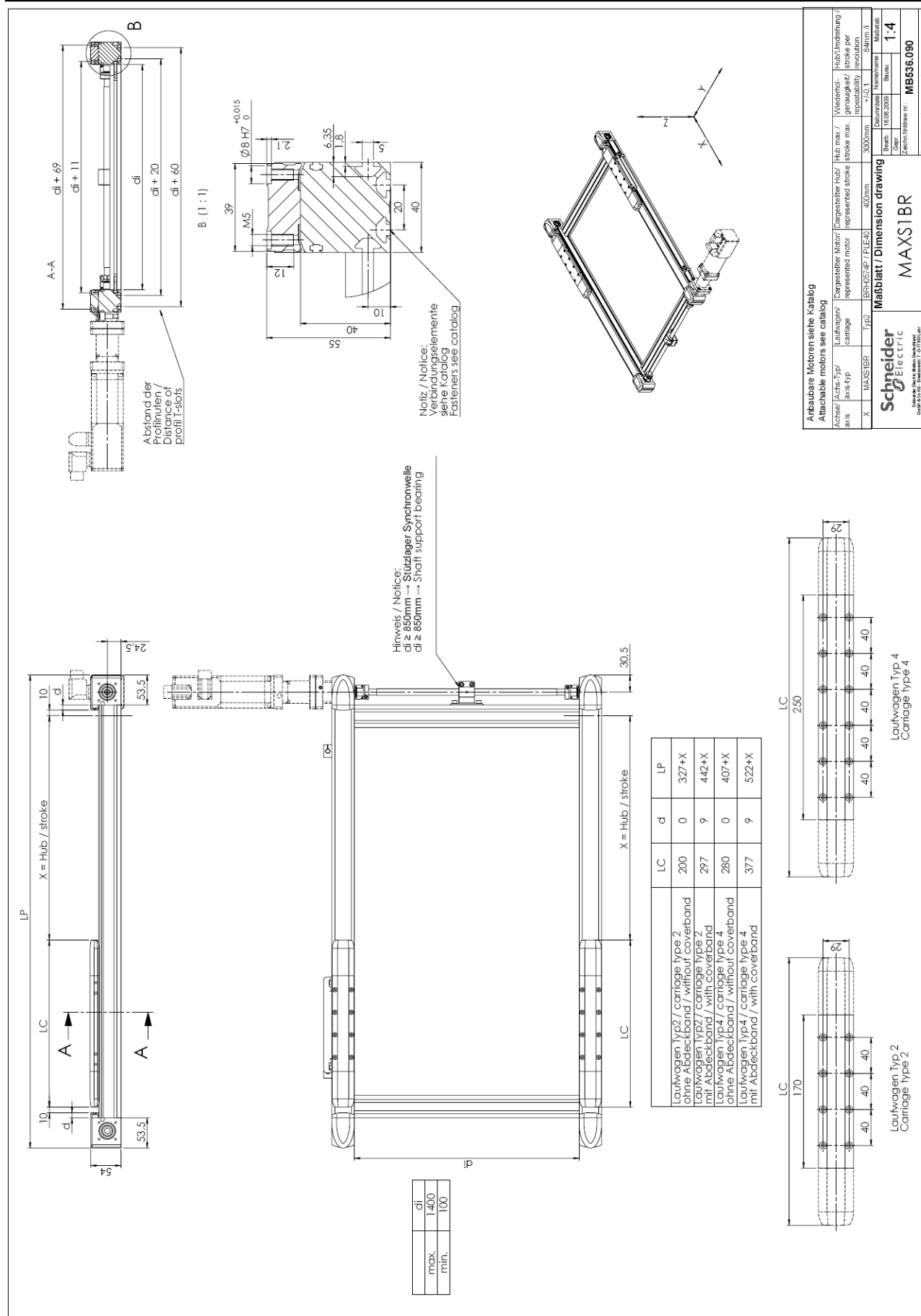
Type	Guide type	stroke (mm)	Typ. payload (kg)
MAXH1BR	Roller guide	3000	15
MAXH2Bx	Roller guide	5500	25
	Ball guide	5500	75
MAXH3Bx	Roller guide	5500	50
	Ball guide	5500	180
MAXH4BB	Ball guide	5500	300

Type designation portalaxis		MAXS1BR	
Drive system		Toothed belt 15HTD-3M	
Guide type		Roller guide (W06)	
Typical payload	kg	15	
Carriage type		Typ2	Typ4
Carriage length	mm	297 / 200	377 / 280
Drive constant	mm/rev.	84	
Effective diameter toothed belt wheel	mm	26,738	
Max. force $F_{x\max 4}$	N	450	
Max. speed 3)	m/s	8	
Max. acceleration 3)	m/s <sup>2</sup>	20	
Max. drive torque $M_{\max 4}$	Nm	6	
No load breakaway torque 0-stroke axis	Nm	0,6	
No load breakaway torque per add. pair of carriage 5)	Nm	0,2	
Moment of inertia 0-stroke axis	kgcm <sup>2</sup>	2,6 / 2,2	3,0 / 2,6
Moment of inertia synchronous shaft per m	kgcm <sup>2</sup> /m	0,14	
Moment of inertia per add. pair of carriage	kgcm <sup>2</sup>	2,0 / 1,6	2,4 / 2,0
Moment of inertia per m stroke	kgcm <sup>2</sup> /m	0,2	
Moment of inertia per kg payload	kgcm <sup>2</sup> /kg	1,8	
Max. force $F_{y\text{dyn}\max 4}$	N	660	
Max. force $F_{z\text{dyn}\max 4}$	N	430	
Max. torque $M_{y\text{dyn}\max 4}$	Nm	11	28
Max. torque $M_{z\text{dyn}\max 4}$	Nm	17	43
Mass of 0-stroke axis	kg	5,7 / 4,9	6,3 / 5,5
Mass synchronous shaft per m	kg/m	0,6	
Mass of add. pair of carriage (incl. profile) 5)	kg	2,6 / 1,8	3,2 / 2,4
Mass of per m stroke	kg/m	4,5	
Moving mass pair of carriage 5)	kg	1,2 / 1,0	1,4 / 1,2
Max. stroke 1)	mm	2880 / 3000	2800 / 2920
Min. stroke 2)	mm	125	
min. distanz between profile	mm	100	
max. distanz between profile	mm	1400	
Repeate accuracy 3)	mm	± 0,1	
Diameter motor shaft	mm	6,35 ... 14	
Profile cross section (W x H)	mm	40 x 40	
Axial planar moment of inertia ( $I_x / I_y$ )	mm <sup>4</sup>	76.640 / 108.930	
Elasticity modul (aluminium)	N/mm <sup>2</sup>	72000	
Max. ambient temperature	°C	0 ... + 50	
Load ratings guide system (Cstat / Cdyn)	N	2230 / 3950	
Lifetime reference value	km	30000	

- 1) Greater stroke length on request
- 2) Guaranteed lubrication of guide elements, shorter stroke length on request
- 3) Dependent on load, stroke and shaft length
- 4) The maximum permissible dynamic forces and torques are reduced with increasing speed.
- 5) Measured at 0.1 m/s

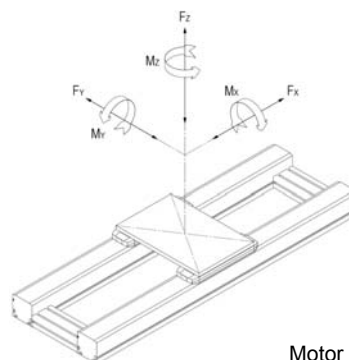


Motor attachment and dimensions  
see Portal Axes PAS manual

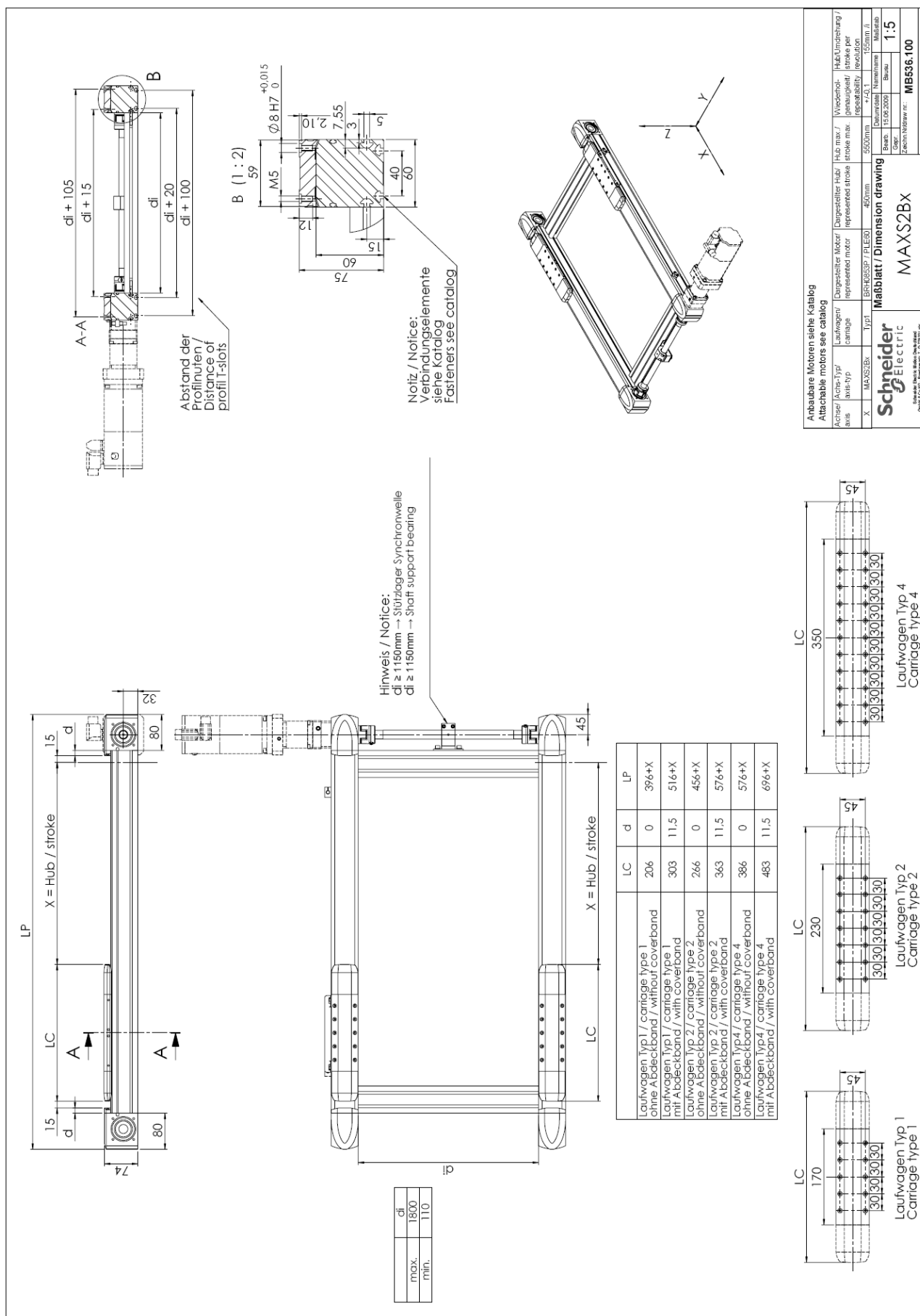


Type designation portalaxis		MAXS2BR			MAXS2BB		
Drive system		Toothed belt 25HTD-5M			Toothed belt 25HTD-5M		
Guide type		Roller guide (W06)			Ball guide (SHS15V)		
Typical payload	kg	25			75		
Carriage type		Typ1	Typ2	Typ4	Typ1	Typ2	Typ4
Carriage length	mm	303 / 206	363 / 266	483 / 386	303 / 206	363 / 266	483 / 386
Drive constant	mm/rev.	155			155		
Effective diameter toothed belt wheel	mm	49,338			49,338		
Max. force $F_{x\max 4}$	N	1200			1200		
Max. speed 3)	m/s	8			5		
Max. acceleration 3)	m/s <sup>2</sup>	20			20		
Max. drive torque $M_{\max 4}$	Nm	30			30		
No load breakaway torque 0-stroke axis	Nm	2,4			3,6		
No load breakaway torque per add. pair of carriage 5)	Nm	0,4			1,6		
Moment of inertia 0-stroke axis	kgcm <sup>2</sup>	19,0 / 16,8	21,6 / 19,4	27,2 / 25,0	20,6 / 18,4	22,6 / 20,4	27,2 / 25,0
Moment of inertia synchronous shaft per m	kgcm <sup>2</sup> /m	0,94			0,94		
Moment of inertia per add. pair of carriage	kgcm <sup>2</sup>	13,0 / 10,8	15,8 / 13,6	21,4 / 19,2	14,6 / 12,4	16,8 / 14,6	21,4 / 19,2
Moment of inertia per m stroke	kgcm <sup>2</sup> /m	2,4			2,4		
Moment of inertia per kg payload	kgcm <sup>2</sup> /kg	6,1			6,1		
Max. force $F_{y\text{dyn}\max 4}$	N	660			2810		
Max. force $F_{z\text{dyn}\max 4}$	N	430			2810		
Max. torque $M_{y\text{dyn}\max 4}$	Nm	18	31	56	74	194	362
Max. torque $M_{z\text{dyn}\max 4}$	Nm	28	48	87	74	194	362
Mass of 0-stroke axis	kg	13,2 / 11,6	14,2 / 12,6	16,2 / 14,6	14,2 / 12,4	15,2 / 13,4	17,2 / 15,4
Mass synchronous shaft per m	kg/m	1,3			1,3		
Mass of add. pair of carriage (incl. profile) 5)	kg	5,0 / 3,8	6,0 / 4,8	7,8 / 6,6	5,8 / 4,4	6,8 / 5,4	8,8 / 7,4
Mass of per m stroke	kg/m	9,2			11,2		
Moving mass pair of carriage 5)	kg	2,2 / 1,8	2,6 / 2,4	3,6 / 3,2	2,4 / 2,0	2,8 / 2,4	3,6 / 3,2
Max. stroke 1)	mm	5540 / 5660	5480 / 5600	5360 / 5480	5540 / 5660	5480 / 5600	5360 / 5480
Min. stroke 2)	mm	130			9		
min. distanz between profile	mm	110			110		
max. distanz between profile	mm	1800			1800		
Repeate accuracy 3)	mm	± 0,1			± 0,1		
Diameter motor shaft	mm	6,35 ... 20			6,35 ... 20		
Profile cross section (W x H)	mm	60 x 60			60 x 60		
Axial planar moment of inertia ( $I_x / I_y$ )	mm <sup>4</sup>	435.390 / 651.610			435.390 / 651.610		
Elasticity modul (aluminium)	N/mm <sup>2</sup>	72000			72000		
Max. ambient temperature	°C	0 ... + 50			0 ... + 50		
Load ratings guide system (Cstat / Cdyn)	N	2230 / 3950			24200 / 14200		
Lifetime reference value	km	30000			30000		

- 1) Greater stroke length on request
- 2) Guaranteed lubrication of guide elements, shorter stroke length on request
- 3) Dependent on load, stroke and shaft length
- 4) The maximum permissible dynamic forces and torques are reduced with increasing speed.
- 5) Measured at 0.1 m/s

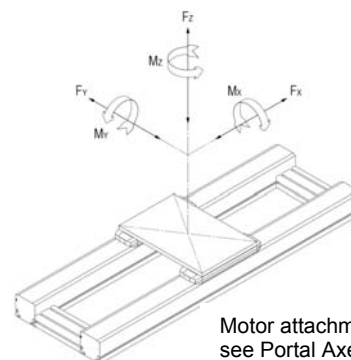


Motor attachment and dimensions  
see Portal Axes PAS manual

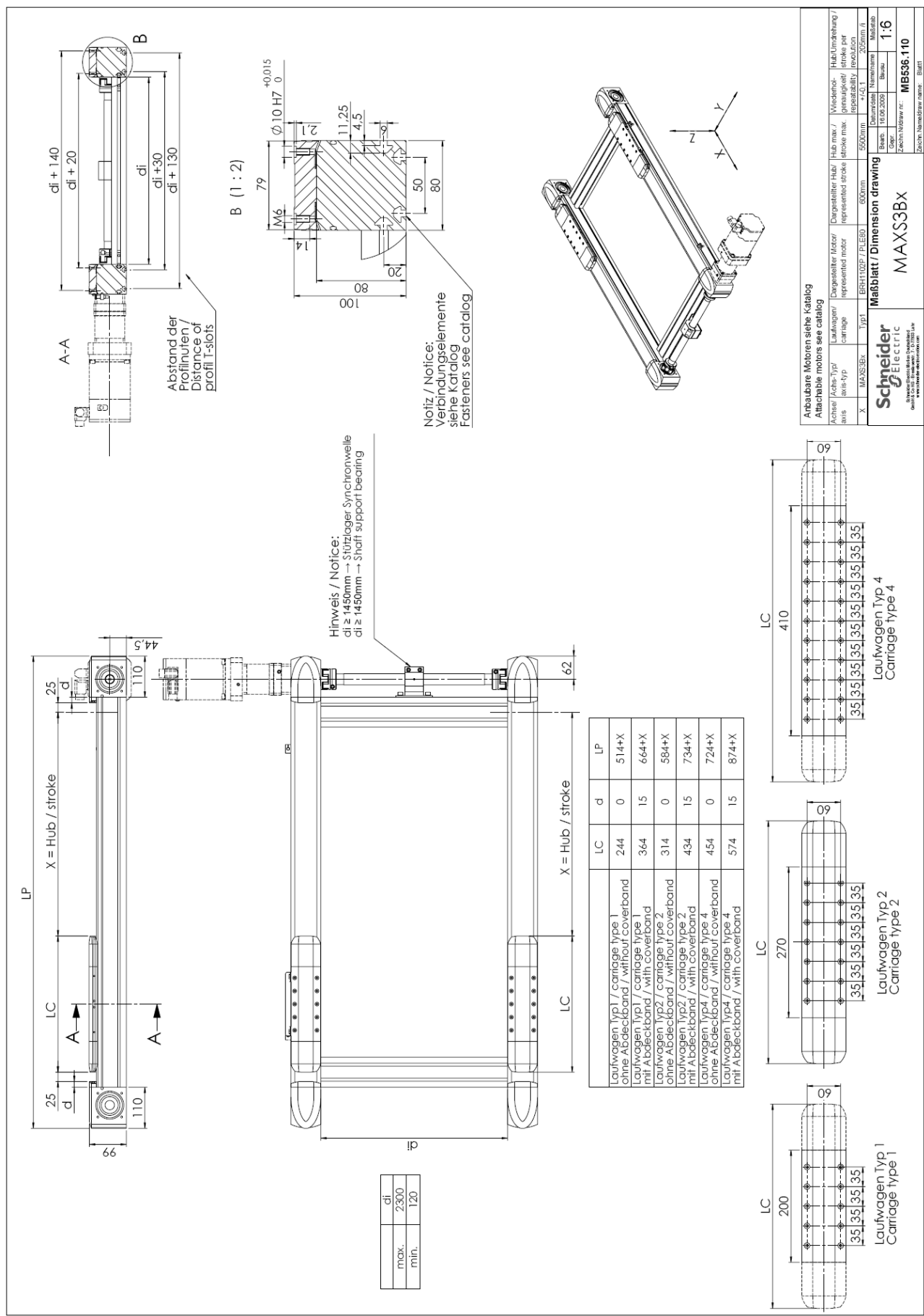


Type designation portalaxis		MAXS3BR			MAXS3BB		
Drive system		Toothed belt 30HTD-5M			Toothed belt 30HTD-5M		
Guide type		Roller guide (W10)			Ball guide (SHS20V)		
Typical payload	kg	50			180		
Carriage type		Typ1	Typ2	Typ4	Typ1	Typ2	Typ4
Carriage length	mm	364 / 244	434 / 314	574 / 454	364 / 244	434 / 314	574 / 454
Drive constant	mm/rev.	205			205		
Effective diameter toothed belt wheel	mm	65,254			65,254		
Max. force $F_{x\max 4}$	N	1650			1650		
Max. speed 3)	m/s	8			5		
Max. acceleration 3)	m/s <sup>2</sup>	20			20		
Max. drive torque $M_{\max 4}$	Nm	54			54		
No load breakaway torque 0-stroke axis	Nm	5,0			7,0		
No load breakaway torque per add. pair of carriage 5)	Nm	0,6			2,6		
Moment of inertia 0-stroke axis	kgcm <sup>2</sup>	74,1 / 64,3	84,0 / 75,2	106,2 / 94,4	78,0 / 69,2	86,0 / 77,2	104,8 / 96,0
Moment of inertia synchronous shaft per m	kgcm <sup>2</sup> /m	4,37			4,37		
Moment of inertia per add. pair of carriage	kgcm <sup>2</sup>	48,8 / 40,2	58,4 / 49,8	77,8 / 69,2	52,4 / 43,8	60,4 / 51,8	79,8 / 71,2
Moment of inertia per m stroke	kgcm <sup>2</sup> /m	5,0			5,0		
Moment of inertia per kg payload	kgcm <sup>2</sup> /kg	10,7			10,7		
Max. force $F_{y\text{dyn}\max 4}$	N	1760			4410		
Max. force $F_{z\text{dyn}\max 4}$	N	1040			4410		
Max. torque $M_{y\text{dyn}\max 4}$	Nm	51	87	160	162	379	687
Max. torque $M_{z\text{dyn}\max 4}$	Nm	86	148	271	162	379	687
Mass of 0-stroke axis	kg	33,1 / 29,7	35,1 / 31,7	39,1 / 35,7	35,5 / 31,7	37,1 / 33,3	41,1 / 37,3
Mass synchronous shaft per m	kg/m	2,5			2,5		
Mass of add. pair of carriage (incl. profile 5)	kg	10,4 / 7,6	12,4 / 9,6	16,4 / 13,6	11,8 / 8,6	14,0 / 10,8	18,2 / 15,0
Mass of per m stroke	kg/m	16,0			19,0		
Moving mass pair of carriage 5)	kg	4,6 / 3,8	5,6 / 4,8	7,4 / 6,6	5,0 / 4,2	5,8 / 5,0	7,6 / 6,8
Max. stroke 1)	mm	5450 / 5600	5380 / 5530	5240 / 5390	5450 / 5600	5380 / 5530	5240 / 5390
Min. stroke 2)	mm	175			11		
min. distanz between profile	mm	120			120		
max. distanz between profile	mm	2300			2300		
Repeate accuracy 3)	mm	± 0,1			± 0,1		
Diameter motor shaft	mm	12 ... 25			12 ... 25		
Profile cross section (W x H)	mm	80 x 80			80 x 80		
Axial planar moment of inertia ( $I_x / I_y$ )	mm <sup>4</sup>	1.285.260 / 1.867.210			1.285.260 / 1.867.210		
Elasticity modul (aluminium)	N/mm <sup>2</sup>	72000			72000		
Max. ambient temperature	°C	0 ... + 50			0 ... + 50		
Load ratings guide system (Cstat / Cdyn)	N	4850 / 8500			38400 / 22300		
Lifetime reference value	km	30000			30000		

- 1) Greater stroke length on request
- 2) Guaranteed lubrication of guide elements, shorter stroke length on request
- 3) Dependent on load, stroke and shaft length
- 4) The maximum permissible dynamic forces and torques are reduced with increasing speed.
- 5) Measured at 0.1 m/s

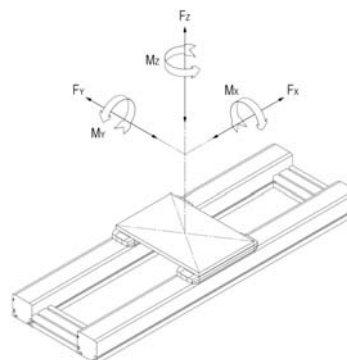


Motor attachment and dimensions see Portal Axes PAS manuals



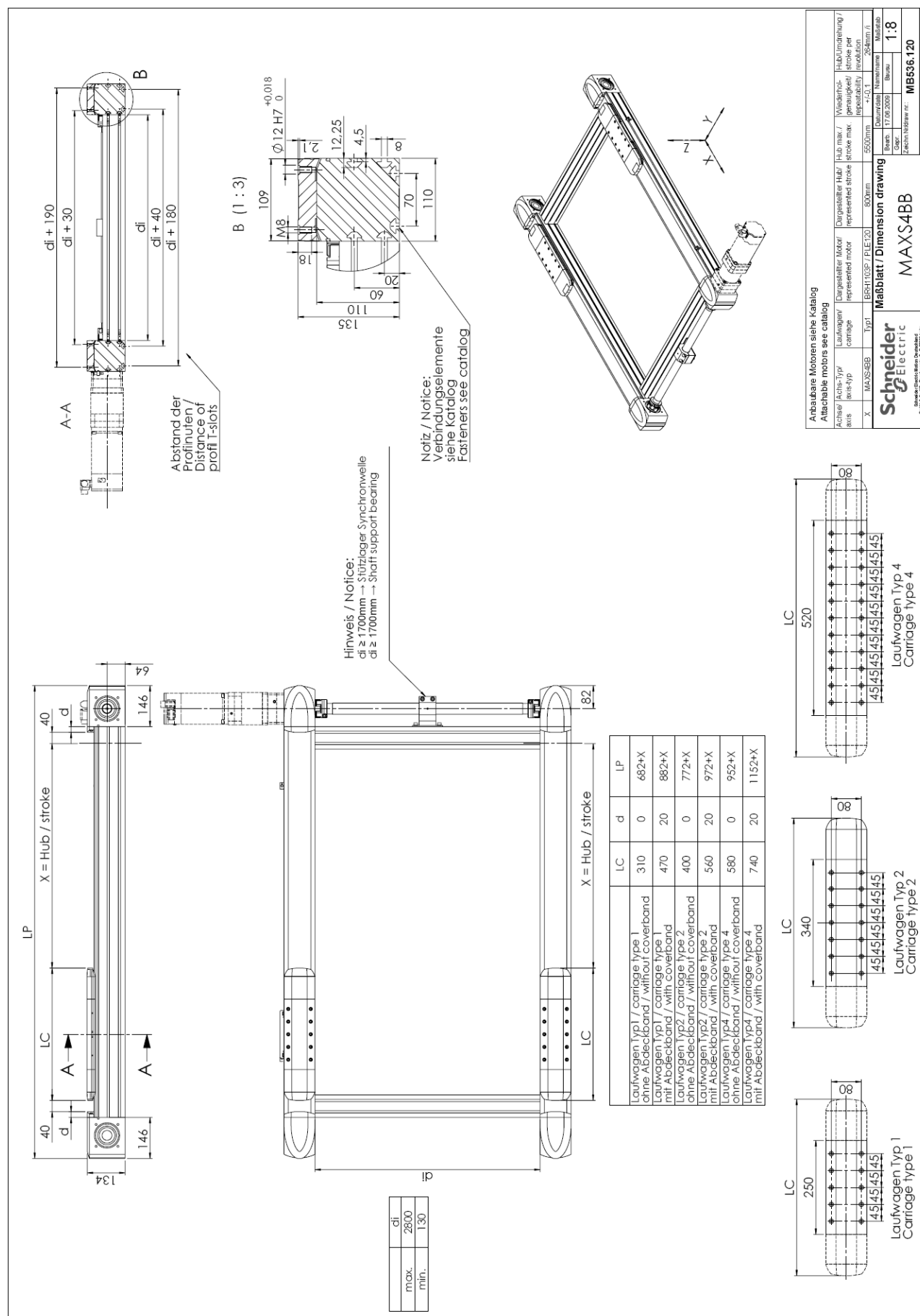
Type designation portalaxis		MAXS4BB		
Drive system		Toothed belt 50HTD-8M		
Guide type		Ball guide (SHS25V)		
Typical payload	kg	300		
Carriage type		Typ1	Typ2	Typ4
Carriage length	mm	470 / 310	560 / 400	740 / 580
Drive constant	mm/rev.	264		
Effective diameter toothed belt wheel	mm	84,034		
Max. force $F_{x\max 4}$	N	3900		
Max. speed 3)	m/s	5		
Max. acceleration 3)	m/s <sup>2</sup>	20		
Max. drive torque $M_{\max 4}$	Nm	165		
No load breakaway torque 0-stroke axis	Nm	9,0		
No load breakaway torque per add. pair of carriage 5)	Nm	4,2		
Moment of inertia 0-stroke axis	kgcm <sup>2</sup>	264,1 / 231,9	295,7 / 263,5	360,1 / 327,9
Moment of inertia synchronous shaft per m	kgcm <sup>2</sup> /m	11,65		
Moment of inertia per add. pair of carriage	kgcm <sup>2</sup>	179,2 / 147,0	210,8 / 178,6	275,2 / 243,0
Moment of inertia per m stroke	kgcm <sup>2</sup> /m	22,4		
Moment of inertia per kg payload	kgcm <sup>2</sup> /kg	17,7		
Max. force $F_{y\text{dyn}\max 4}$	N	6270		
Max. force $F_{z\text{dyn}\max 4}$	N	6270		
Max. torque $M_{y\text{dyn}\max 4}$	Nm	256	655	1209
Max. torque $M_{z\text{dyn}\max 4}$	Nm	256	655	1209
Mass of 0-stroke axis	kg	74,0 / 65,2	78,8 / 70,0	88,2 / 79,4
Mass synchronous shaft per m	kg/m	3,6		
Mass of add. pair of carriage (incl. profile 5)	kg	25,8 / 18,6	30,6 / 23,4	40,2 / 33,0
Mass of per m stroke	kg/m	33,8		
Moving mass pair of carriage 5)	kg	10,2 / 8,4	12,0 / 10,2	15,6 / 13,8
Max. stroke 1)	mm	5310 / 5510	5220 / 5420	5040 / 5240
Min. stroke 2)	mm	13		
min. distanz between profile	mm	130		
max. distanz between profile	mm	2800		
Repeate accuracy 3)	mm	± 0,1		
Diameter motor shaft	mm	12 ... 32		
Profile cross section (W x H)	mm	110 x 110		
Axial planar moment of inertia ( $I_x / I_y$ )	mm <sup>4</sup>	4.713.490 / 6.624.690		
Elasticity modul (aluminium)	N/mm <sup>2</sup>	72000		
Max. ambient temperature	°C	0 ... + 50		
Load ratings guide system (Cstat / Cdyn)	N	52400 / 31700		
Lifetime reference value	km	30000		

- 1) Greater stroke length on request
- 2) Guaranteed lubrication of guide elements, shorter stroke length on request
- 3) Dependent on load, stroke and shaft length
- 4) The maximum permissible dynamic forces and torques are reduced with increasing speed.
- 5) Measured at 0.1 m/s



Motor attachment and dimensions  
See Portal Axes PAS manuals





References (1)															
To order a Lexium MAX H or Lexium MAX S double portal axis, complete each reference by replacing the "•" as required (2):															
Example: MAX H 1 B R M 1000 A 2 B A XXX R 0120/1 XX X V6 0 (2)      MAX • • B • • ••• • • • • • • •••• / (2)															
Type of drive for support axis	Support axis driven by the load	H													/
	Support axis driven by a drive shaft	S													/
Size (profile cross-section)	40 (40 x 40 mm cross-section)	1													/
	60 (60 x 60 mm cross-section)	2													/
	80 (80 x 80 mm cross-section)	3													/
	110 (110 x 110 mm cross-section)	4													/
Type of drive	Toothed belt		B												/
Type of guide	Roller (MAX •1B, •2B, •3B only)			R											/
	Ball (MAX •2B, •3B, •4B only)			B											/
Feed per revolution	84 mm/revolution (MAX •1B only)				M										/
	155 mm/revolution (MAX •2B only)				M										/
	205 mm/revolution (MAX •3B only)				M										/
	264 mm/revolution (MAX •4B only)				M										/
Stroke	Indicate the length in mm (3)				••••										/
Limit switches (4)	2 PNP output sensors, NC contact, not connected					A									/
	2 PNP output sensors, NO contact, not connected					C									/
	2 NPN output sensors, NC contact, not connected					E									/
	2 NPN output sensors, NO contact, not connected					G									/
	Without sensors/sensor plate					N									/
Type of carriage (5)	Type 1 (MAX •2B, •3B, •4B only)					1									/
	Type 2					2									/
	Type 4					4									/
Options	With protective metal strip						B								/
	Anti-corrosion version/without protective metal strip						C								/
	With anti-static toothed belt/without protective metal strip						A								/
	Anti-corrosion version/with anti-static toothed belt/without protective metal strip						E								/
	With anti-static toothed belt/with protective metal strip						L								/
	Without option						N								/
Number of carriages (6)	1						A								/
	2 (please contact our Customer Care Centre)						B								/
	3 (please contact our Customer Care Centre)						C								/
Distance between two carriages	Indicate the distance in mm (999 mm maximum) (please contact our Customer Care Centre)							•••							/
	1 carriage only, indicate "XXX"							XXX							/
Interface for the drive element (7)	Drive element fixed on the right								R						/
	Drive element fixed on the left								L						/
	Drive element fixed externally, right-hand side (MAX H only)								A						/
	Drive element fixed externally, left-hand side (MAX H only)								B						/
	Without drive element/driven axis on the right (MAX H only)								G						/
	Without drive element/driven axis on the left (MAX H only)								H						/
	Without drive element (MAX S only)								N						/
Distance between the 2 axes	Indicate the length in mm (3)									••••					/

(1) All the technical data for Lexium MAX H and Lexium MAX S axes is available on the documentation CD-ROM supplied with this catalogue.

(2) For the second part of the reference, see page 61507/5.

(3) The maximum value depends on the profile cross-section. Please refer to the characteristics table on page 61507/3.

(4) Supplied with a 100 m cable equipped with an M8 connector.

(5) Please refer to the documentation CD-ROM supplied with this catalogue.

(6) Only carriages of the same type (type 1, type 2 or type 4) are permitted.

(7) Interface types for the drive element:

MAX H•B...						MAX S•B...		
...R•••••/(2)	...L•••••/(2)	...A•••••/(2)	...B•••••/(2)	...G•••••/(2)	...H•••••/(2)	...R•••••/(2)	...L•••••/(2)	...N•••••/(2)

## References (continued) (1)

To order a Lexium MAX H or Lexium MAX S double portal axis, complete each reference by replacing the “●” as required (2):

**Example: MAX H 1 B R M 1000 A 2 B A XXX R 0120/1 XX X V6 0 (2)**








MAX ..... (2)  $\bullet$   $\bullet\bullet$   $\bullet$   $\bullet\bullet$   $\bullet$

<b>Motor drive configuration (3)</b>	Motor only	/	1			
	Motor + gearbox	/	2			
	Gearbox only	/	3			
	Without motor/without gearbox/with adaptor plate for the drive	/	4			
	Without motor/without gearbox	/	X			
<b>Gearbox</b> (PLE/WPLE/PLS: Neugart third-party gearboxes)	PLE 40 gearboxes	/		0G		
	PLE 60 gearboxes	/		1G		
	PLE 80 gearboxes	/		3G		
	PLE 120 gearboxes	/		5G		
	WPLE 40 gearboxes	/		0A		
	WPLE 60 gearboxes	/		1A		
	WPLE 80 gearboxes	/		3A		
	WPLE 120 gearboxes	/		5A		
	PLS 70 gearboxes	/		7G		
	PLS 90 gearboxes	/		8G		
	PLS 115 gearboxes	/		9G		
	Other third-party gearboxes not assembled by Schneider Electric (gearbox drawings required)	/		YY		
	Other third-party gearboxes assembled by Schneider Electric (gearbox and drawings required)	/		ZZ		
	Without gearbox	/		XX		
<b>Gearbox orientation (3)</b>	0°	/			3	
	90°	/			0	
	180°	/			9	
	270°	/			6	
	Without gearbox	/			X	
<b>Motor</b>	BRH 057/SER 36● servo motors	/				S6
	BRH 085/SER 39● servo motors	/				S9
	BRH 110/SER 311● servo motors	/				S1
	BSH 055● servo motors	/				H5
	BSH 0701, 0702/BMH 0701, 0702 servo motors	/				H7
	BSH 0703/BMH 0703 servo motors	/				H8
	BSH 1001... 1003/BMH 1001... 1003 servo motors	/				H1
	BSH 1004 servo motors	/				H4
	BSH 1401... 1404/BMH 1401... 1403 servo motors	/				H2
	Lexium ILS●●571, 572 integrated drives with 3-phase stepper motor	/				I6
	Lexium ILS●●573 integrated drives with 3-phase stepper motor	/				I7
	Lexium ILS●●851, 852 integrated drives with 3-phase stepper motor	/				I9
	Lexium ILS●●853 integrated drives with 3-phase stepper motor	/				I8
	Lexium ILA●●57 integrated drives with AC synchronous servo motor	/				A6
	Lexium ILE●●66 integrated drives with DC brushless motor	/				E7
	BRS 364, 366 stepper motors	/				V6
	BRS 368 stepper motors	/				V8
	BRS 397, 39A stepper motors	/				V9
	BRS 39B stepper motors	/				V0
	BRS 3AC, 3AD stepper motors	/				V1
	Third-party motors not assembled by Schneider Electric (motor drawings required)	/				YY
	Third-party motors assembled by Schneider Electric (motor and drawings required)	/				ZZ
	Without motor	/				XX
<b>Motor orientation (3)</b>	0°	/				3
	90°	/				0
	180°	/				9
	270°	/				6
	Without motor	/				X

(1) All the technical data for Lexium MAX H and Lexium MAX S axes is available on the documentation CD-ROM supplied with this catalogue.

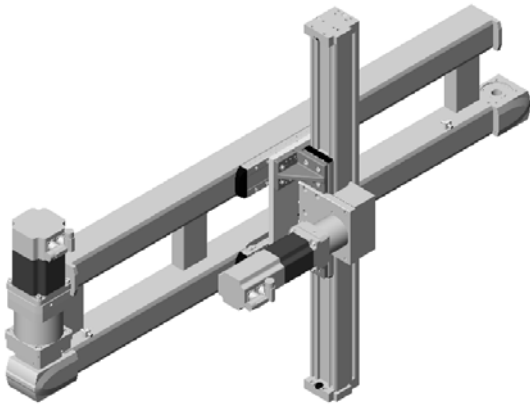
(2) For the first part of the reference, see page 61507/4.

(3) Possible motor drive configurations and orientations.

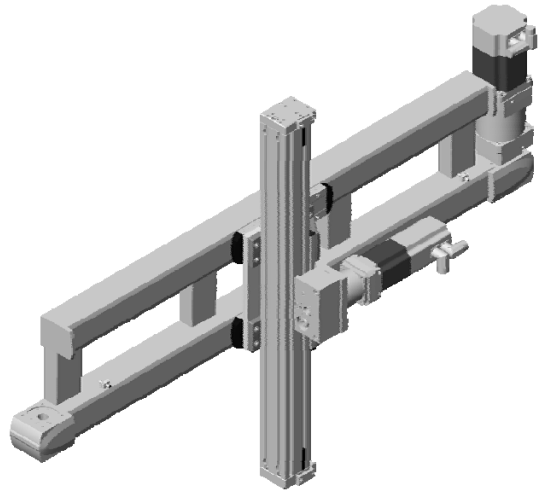
MAX ●●B...(2)/ 1XX●●●	MAX ●●B...(2)/2●G●●●●	MAX ●●B...(2)/ 2●A●●●●	MAX ●●B...(2)/ 3●G●XXX	MAX ●●B...(2)/ 3●A●XXX	MAX ●●B...(2)/ 4XX●●●	MAX ●●B...(2)/ XXXXXX
						

## MAXP

Linearpositioner 2 axes



Left version



Right version

### **MAXP12-H41-C31**

Technical data  
Dimensional drawings

### **MAXP12-H41-C41**

Technical data  
Dimensional drawings

### **MAXP22-H42-C32**

Technical data  
Dimensional drawings

### **MAXP22-H42-C42**

Technical data  
Dimensional drawings

### **MAXP32-H43-C34**

Technical data  
Dimensional drawings

### **MAXP32-H43-C43**

Technical data  
Dimensional drawings

### **MAXP42-H44-C44**

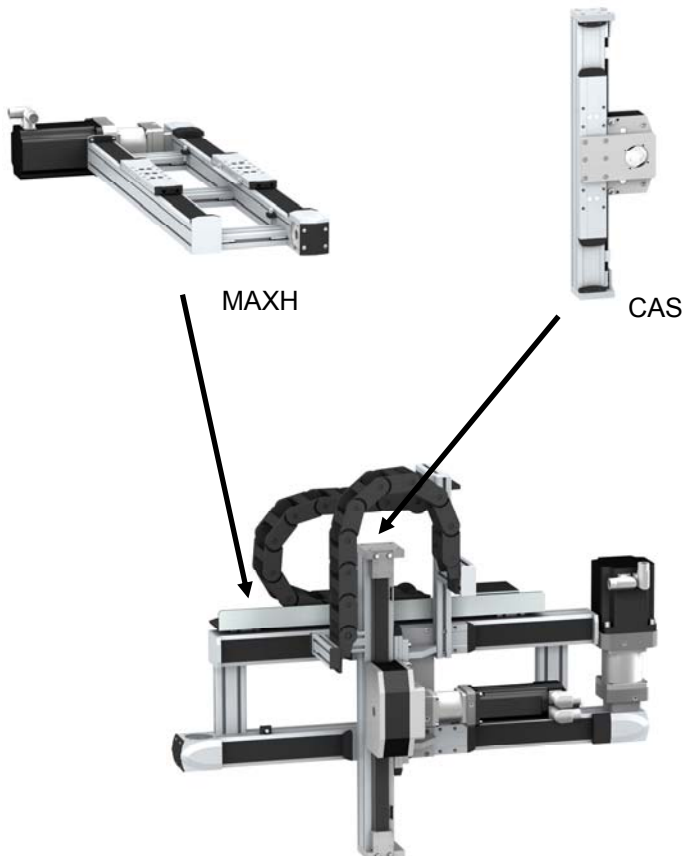
Technical data  
Dimensional drawings

### **Type code**

## MAXP

Linear positioners 2 axes

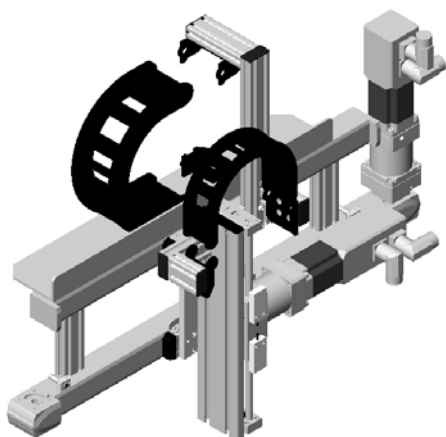
Modular designed, based on standard MAX-axes combinations and standard single axes.



The linear positioning system works below or above the working area. It works in the X/Z direction and is designed especially for handling dynamic load on short till long travel paths in X direction and short travel paths in Z direction.

### Product overview

Type	Guide type	X-axis		Z-axis		Typ. payload (kg)
		Type	stroke (mm)	Type	stroke (mm)	
MAXP12-H41-C31	Roller guide	MAXH1BR	3000	CAS31BC	200	2
MAXP12-H41-C41	Roller guide	MAXH1BR	4000	CAS41BR	400	4
MAXP22-H42-C32	Roller guide	MAXH2BR	4000	CAS32BC	300	4
	Ball guide	MAXH2BB	4000	CAS32BC	300	5
MAXP22-H42-C42	Roller guide	MAXH2BR	4000	CAS42BR	600	6
	Ball guide	MAXH2BB	4000	CAS42BB	600	15
MAXP32-H43-C34	Roller guide	MAXH3BR	5500	CAS34BC	500	14
	Ball guide	MAXH3BB	5500	CAS34BC	500	18
MAXP32-H43-C43	Roller guide	MAXH3BR	5500	CAS43BR	800	18
	Ball guide	MAXH3BB	5500	CAS43BB	800	25
MAXP42-H44-C44	Ball guide	MAXH4BB	5500	CAS44BB	1200	50



### Linear positioner

- Typ. payload 2 kg
- Roller guide
- Fast and dynamic small payload linear positioner for pick & place - tasks
- Small till medium working area
- Z-stroke till 200 mm

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXH1BR	Roller guide	3000	8	+/- 0,10	84	2
Z	CAS31BC	Ball bearing	200	2	+/- 0,05	75	

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application.

Greater stroke in X and Z-direction on request.

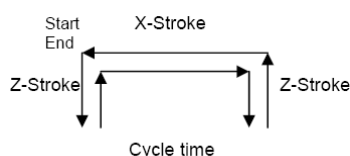
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.

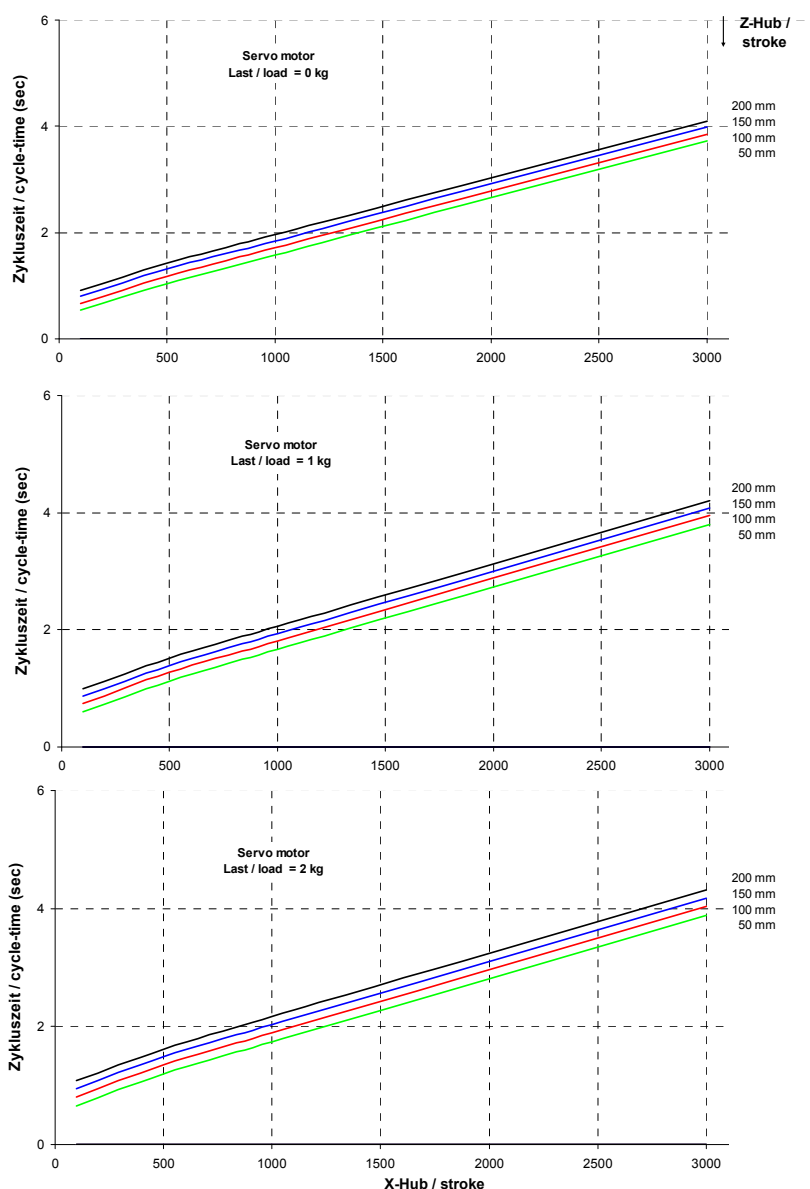
#### Cycle time determination:

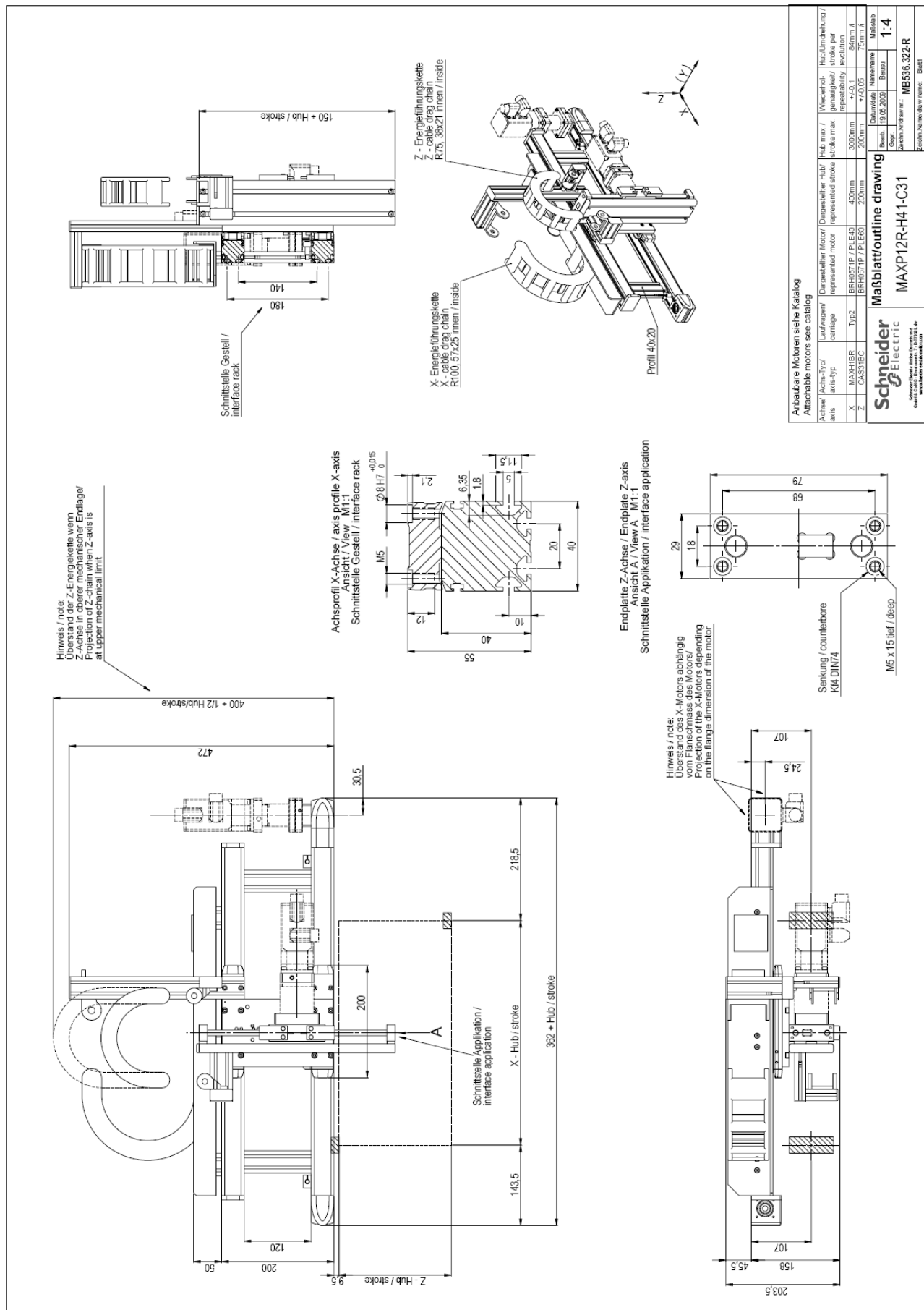
1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. Pick the Z-stroke (mm) in the array of curves.
4. The point of intersection shows the cycle time in seconds on the axis of ordinates.

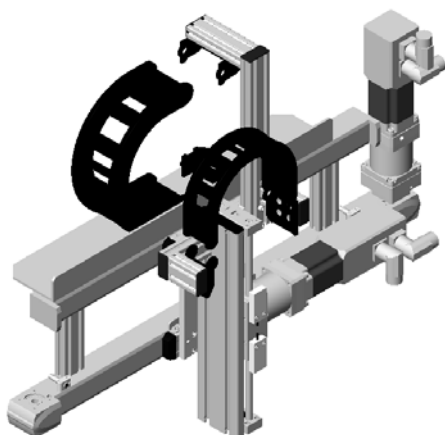
#### Cycle time definition:



Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH0571P	PLE40 / 3:1
Z-Axis	BRH0571P	PLE40 / 3:1







### Linear positioner

- Typ. payload 4 kg
- Roller guide
- Fast and dynamic small payload linear positioner for pick & place - tasks
- Small till medium working area
- Z-stroke till 400 mm

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXH1BR	Roller guide	4000	8	+/- 0,10	84	
Z	CAS41BR	Roller guide	400	2	+/- 0,05	84	4

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application.

Greater stroke in X and Z-direction on request.

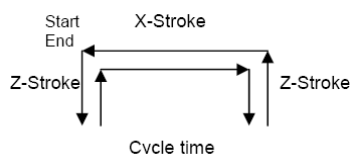
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.

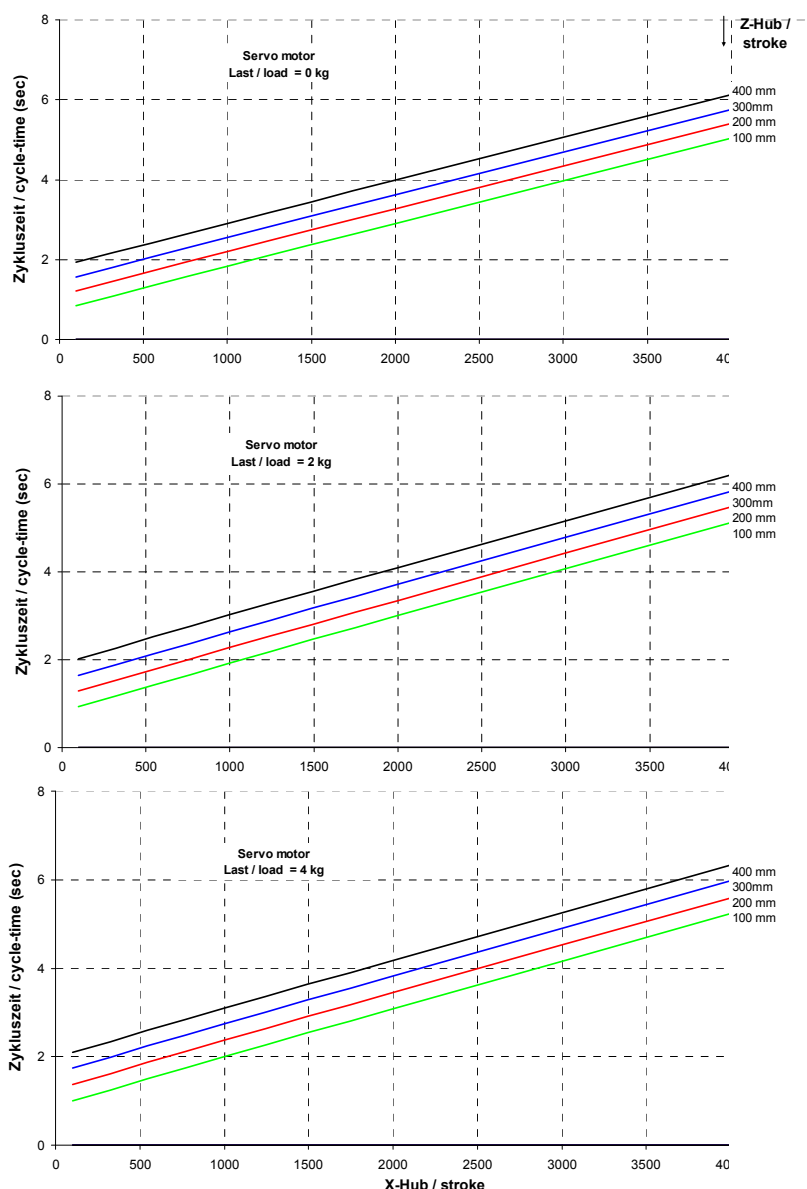
#### Cycle time determination:

1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. Pick the Z-stroke (mm) in the array of curves.
4. The point of intersection shows the cycle time in seconds on the axis of ordinates.

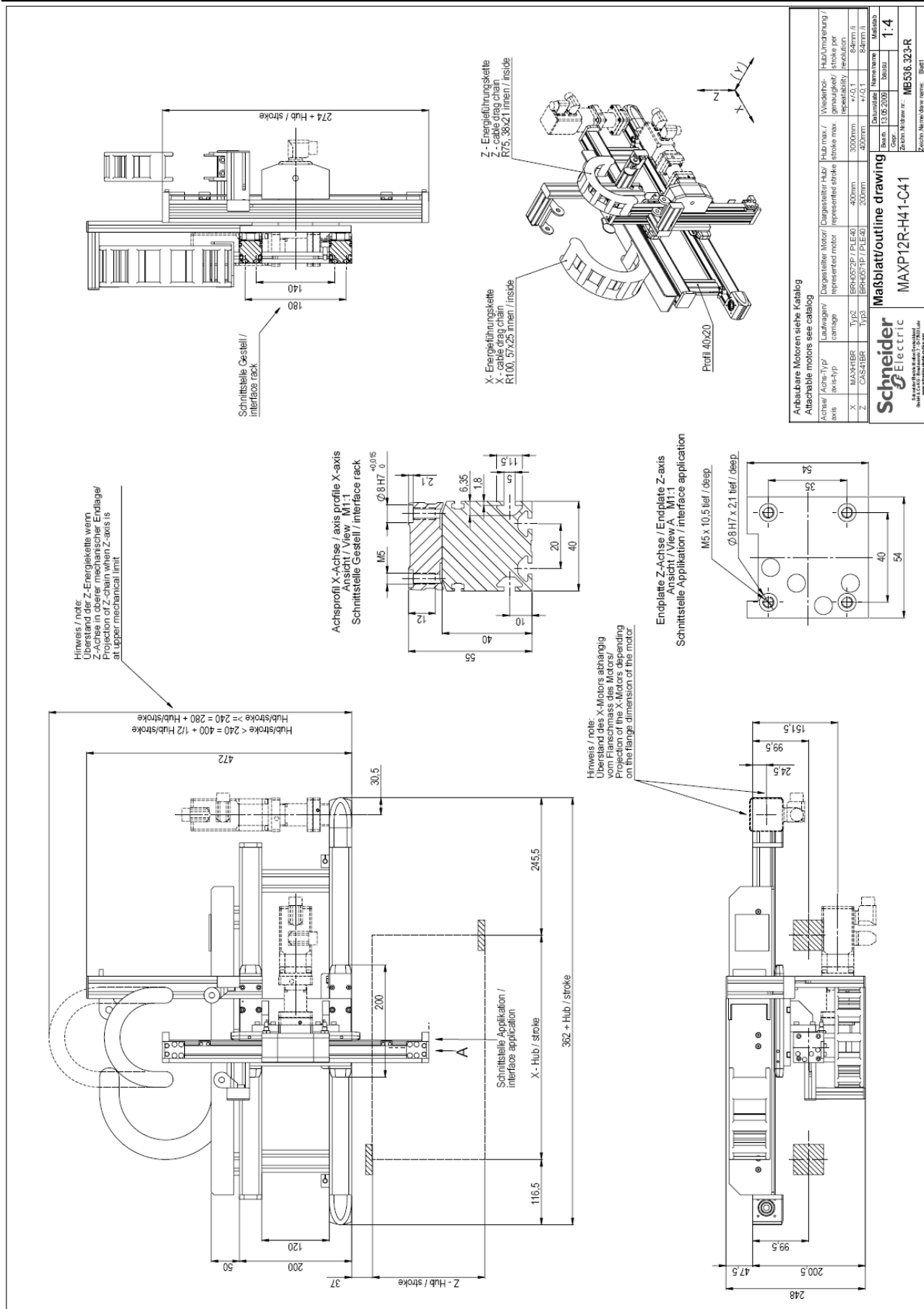
#### Cycle time definition:

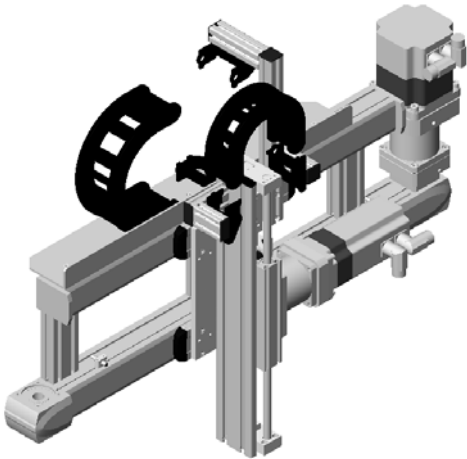


Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH0572P	PLE40 / 3:1
Z-Axis	BRH0571P	PLE40 / 5:1









### Linear positioner

- Typ. payload
  - 4kg with roller guide for high speed applications
  - 5kg with ball guide for high dynamic applications
- Dynamic medium payload linear positioner for pick & place - tasks
- Huge working area
- Z-stroke till 300 mm

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXH2BR	Roller guide	4000	8	+/- 0,10	155	4
Z	CAS32BC	Ball bearing	300	2	+/- 0,05	100	
X	MAXH2BB	Ball guide	4000	5	+/- 0,10	155	5
Z	CAS32BC	Ball bearing	300	2	+/- 0,05	100	

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application.

Greater stroke in X and Z-direction on request.

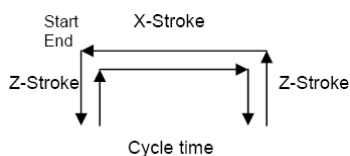
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.

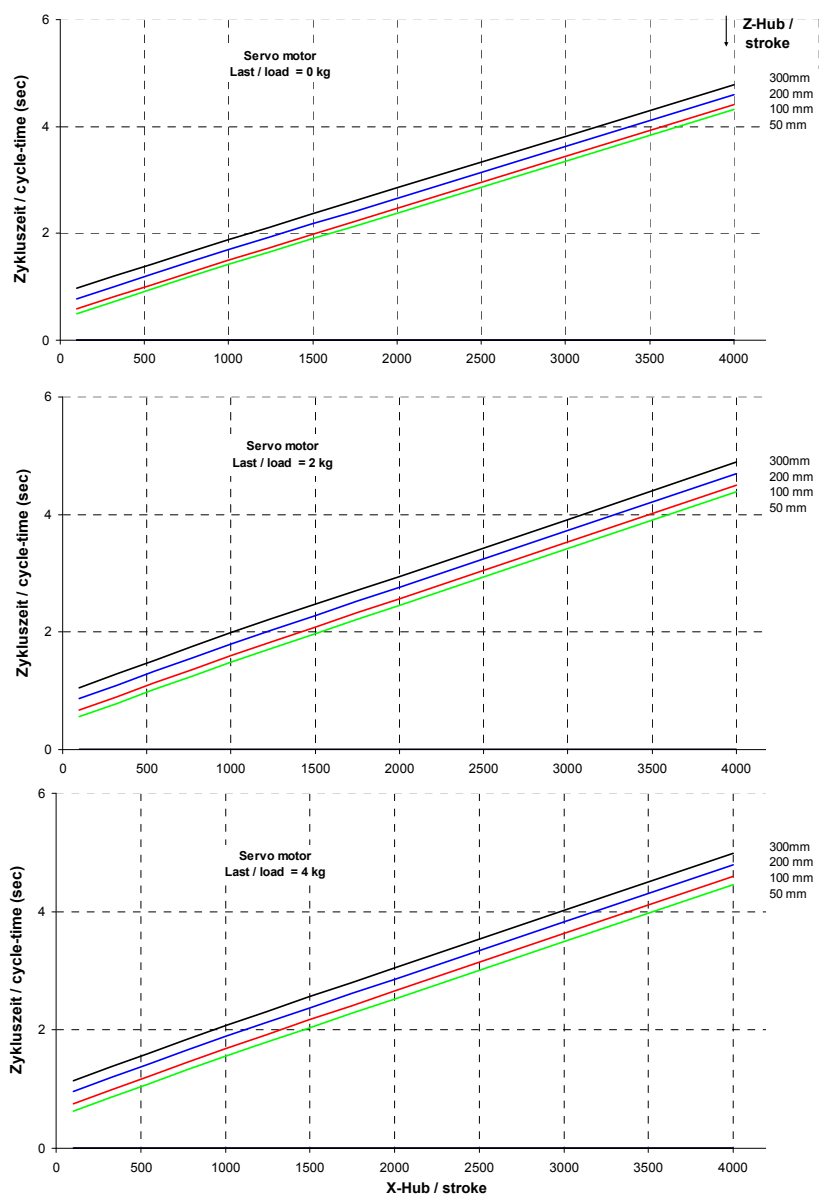
#### Cycle time determination:

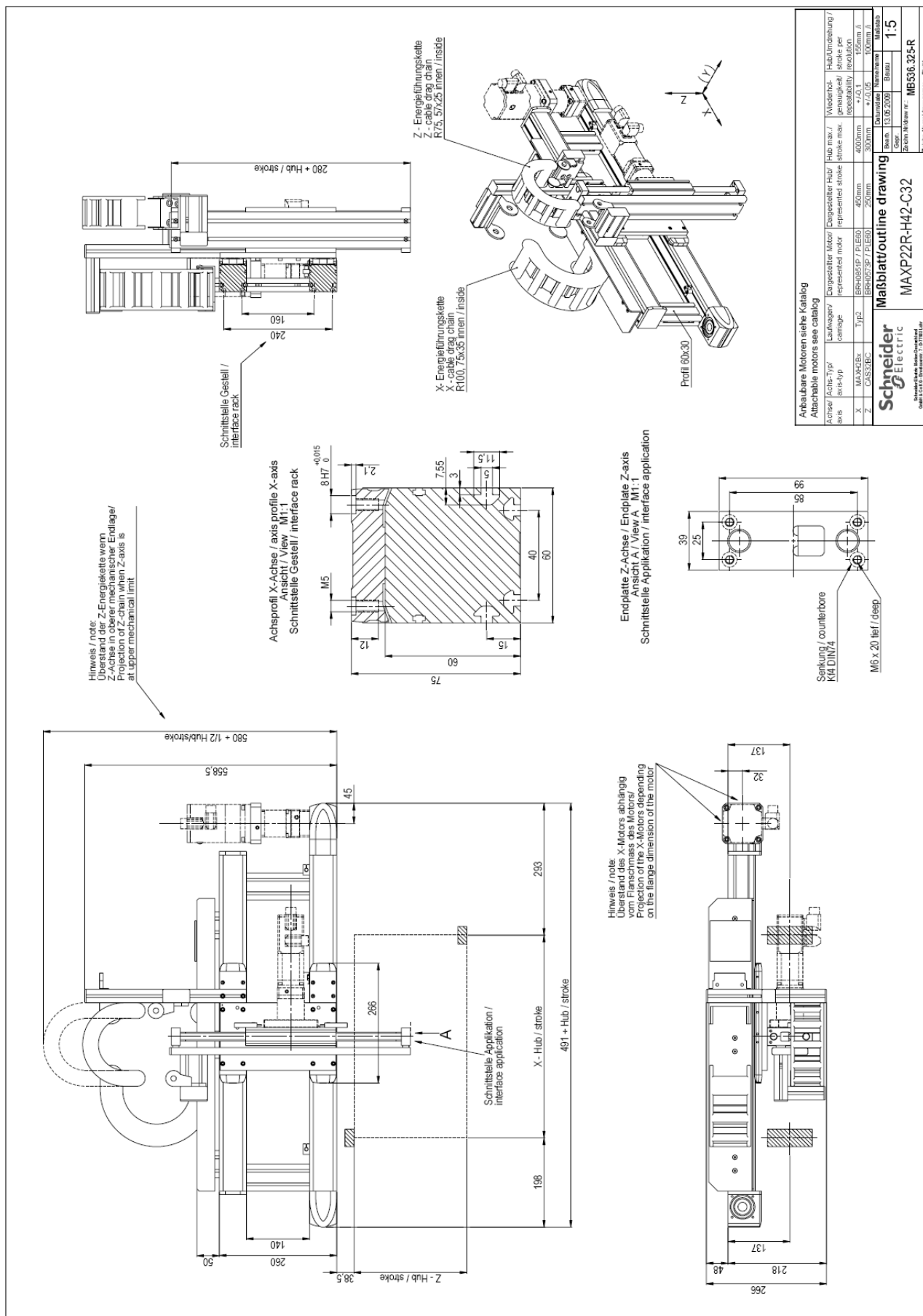
1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. Pick the Z-stroke (mm) in the array of curves.
4. The point of intersection shows the cycle time in seconds on the axis of ordinates.

#### Cycle time definition:

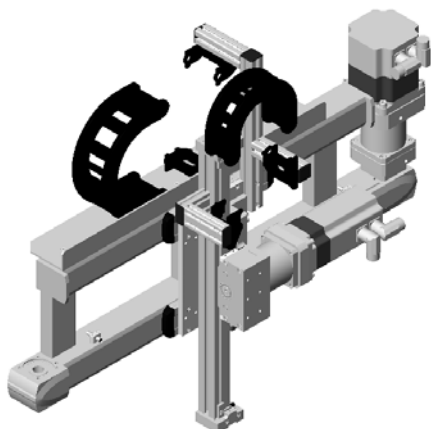


Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH0851P	PLE60 / 5:1
Z-Axis	BRH0573P	PLE60 / 3:1





Anbaubase Motoren siehe Katalog Attachable motors see catalog		Wiederhol- genauigkeit stroke max. Repeatability		Hub max. / stroke max. Travel max.		Hubumdehnung / stroke per travel Travel extension	
Achse / Axis- Typ / axis	Laufwagen / carriage	Dargestellter Motor / represented motor	Dargestellter Hub / represented stroke	Hub max. / stroke max.	Hubumdehnung / stroke per travel	Hubumdehnung / stroke per travel	Hubumdehnung / stroke per travel
X	MAXH2Bx	BR4055P / PLE60	400mm	400mm	+0.1	+0.1	150mm A
Z	CAS32BC	BR4055P / PLE60	250mm	300mm	+0.1	+0.1	100mm A
		Maßblatt / outline drawing		Skala / scale		Maßstab / scale	
		MAXP22R-H42-C32		Datum / date		Blatt / sheet	
				13.08.2009		1:5	
				Zurück zur Seite 1		ME538.325-R	
						Blatt	



### Linear positioner

- Typ. payload
  - with roller guide 6 kg
  - with ball guide 15 kg
- Dynamic small payload linear positioner for pick & place - tasks
- Z-stroke till 600 mm

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXH2BR	Roller guide	4000	8	+/- 0,10	155	6
Z	CAS42BR	Roller guide	600	5	+/- 0,05	155	
X	MAXH2BB	Ball guide	4000	5	+/- 0,10	155	15
Z	CAS42BB	Ball guide	600	5	+/- 0,05	155	

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application.

Greater stroke in X and Z-direction on request.

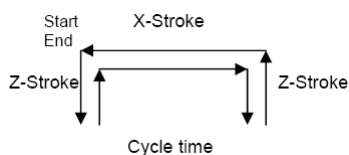
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.

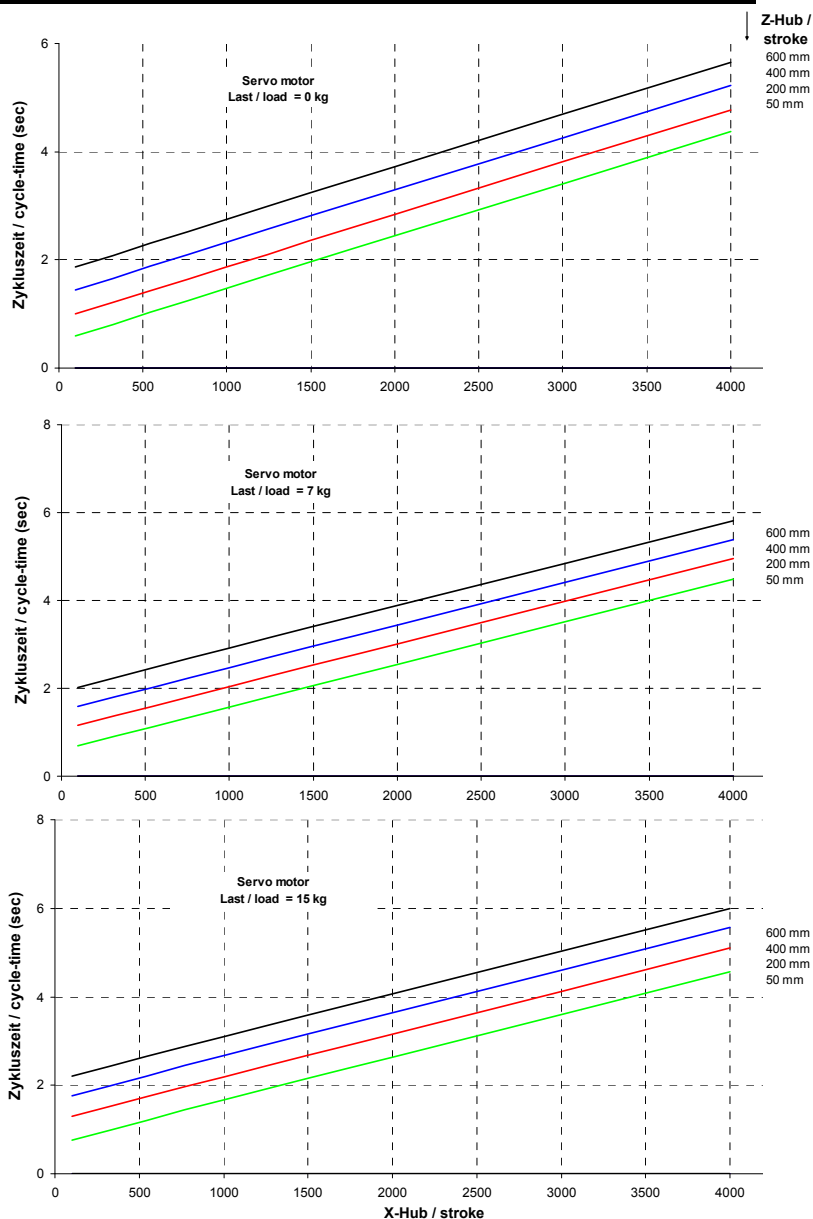
#### Cycle time determination:

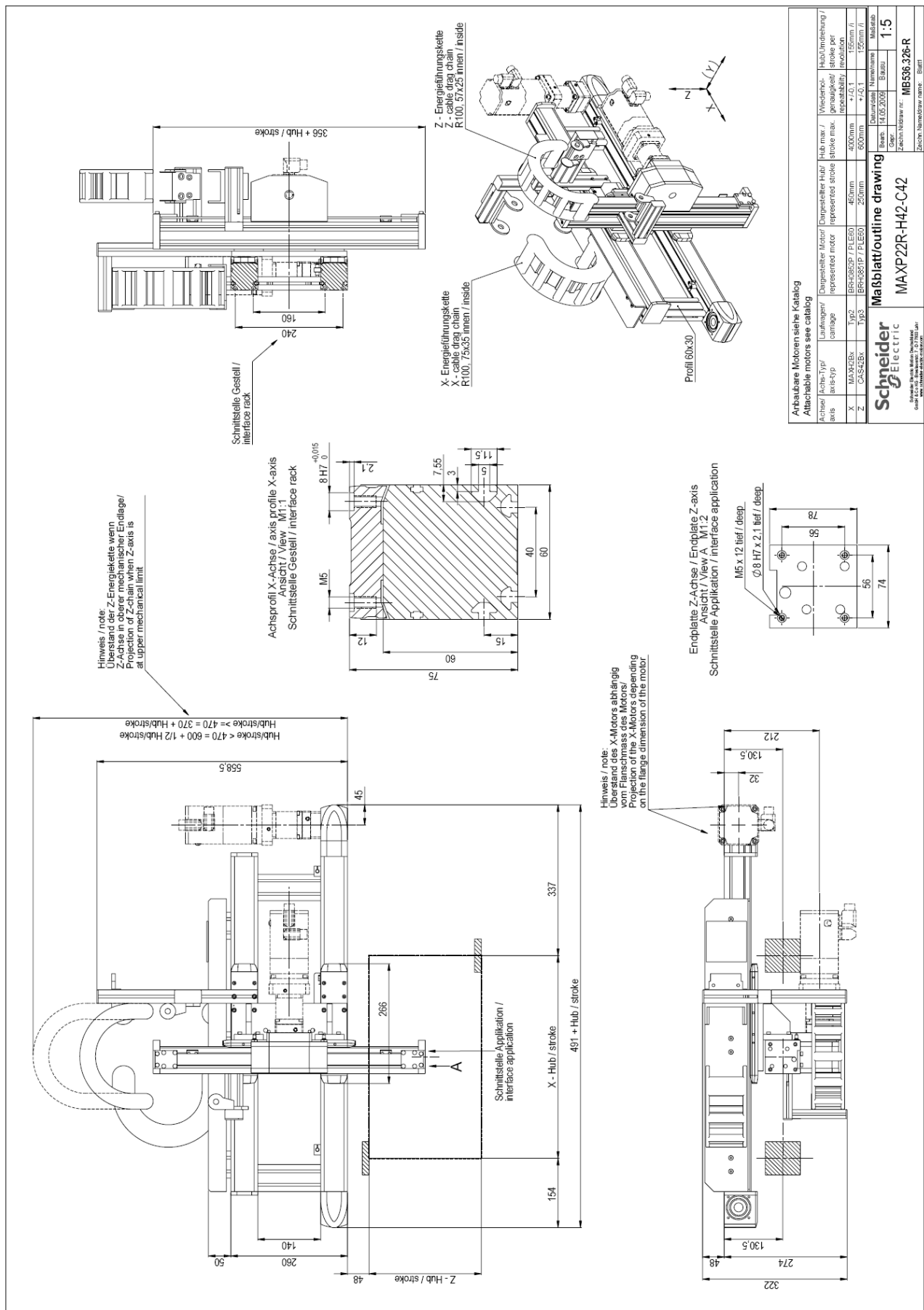
1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. Pick the Z-stroke (mm) in the array of curves.
4. The point of intersection shows the cycle time in seconds on the axis of ordinates.

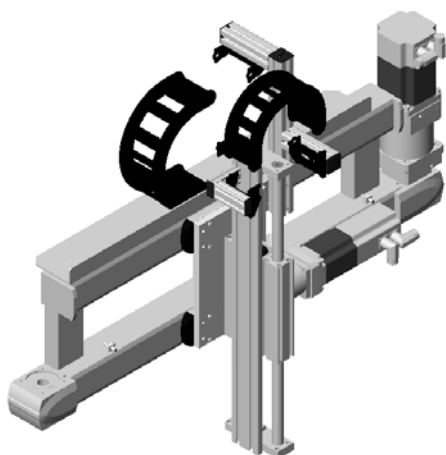
#### Cycle time definition:



Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH0852P	PLE60 / 5:1
Z-Axis	BRH0851P	PLE60 / 5:1







### Linear positioner

- Typ. payload
  - with roller guide 14kg
  - with ball guide 18kg
- Dynamic medium payload linear positioner
- Huge working area
- Z-stroke till 500 mm

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXH3BR	Roller guide	5500	8	+/- 0,10	205	14
Z	CAS34BC	Ball bearing	500	2	+/- 0,05	100	
X	MAXH3BB	Ball guide	5500	5	+/- 0,10	205	18
Z	CAS34BC	Ball bearing	500	2	+/- 0,05	100	

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application.

Greater stroke in X and Z-direction on request.

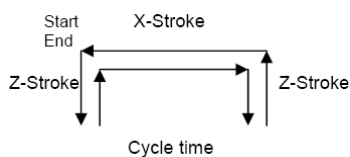
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.

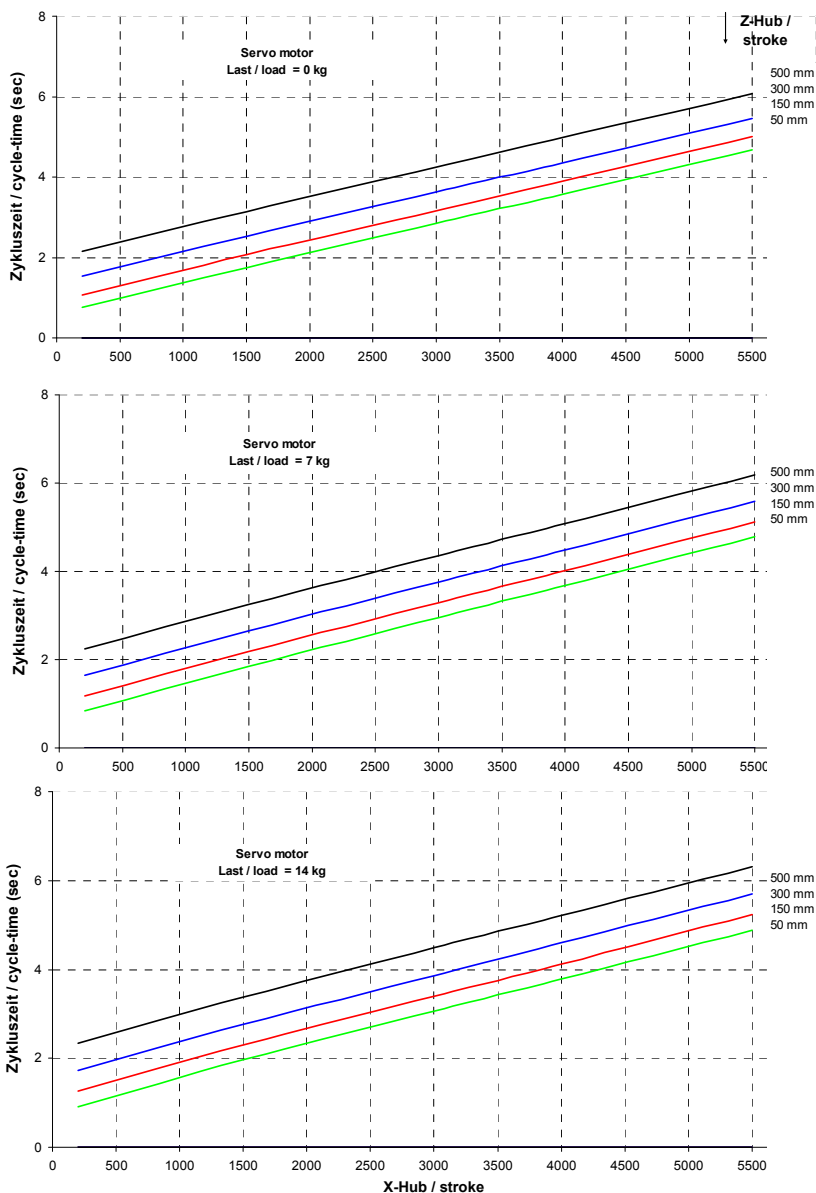
#### Cycle time determination:

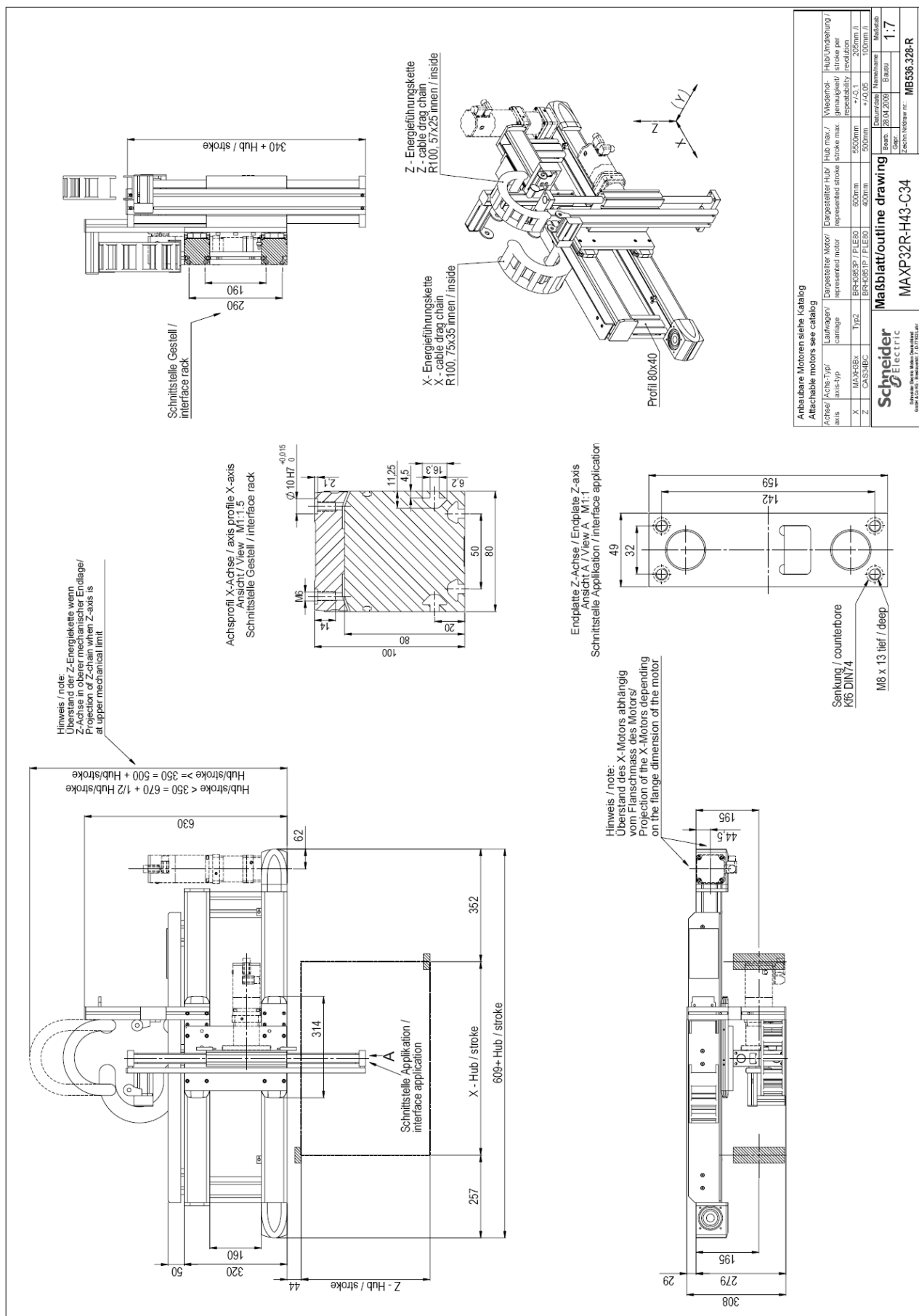
1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. Pick the Z-stroke (mm) in the array of curves.
4. The point of intersection shows the cycle time in seconds on the axis of ordinates.

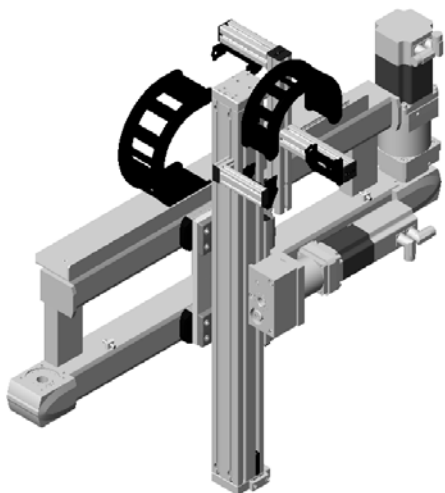
#### Cycle time definition:



Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH0853P	PLE80 / 5:1
Z-Axis	BRH0851P	PLE80 / 5:1







### Linear positioner

- Typ. payload
  - with roller guide for high speed application 9 kg
  - with ball guide for high dynamic applications 25 kg
- Dynamic medium payload linear positioner
- Huge working area
- Z-stroke till 800 mm

Axis direction	Basis axis	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXH3BR	Roller guide	5500	8	+/- 0,10	205	9
Z	CAS43BR	Roller guide	800	2	+/- 0,05	205	
X	MAXH3BB	Ball guide	5500	5	+/- 0,10	205	25
Z	CAS43BB	Ball guide	800	2	+/- 0,05	205	

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application.

Greater stroke in X and Z-direction on request.

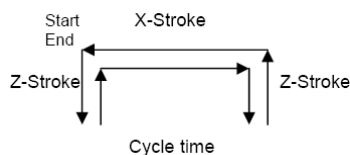
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.

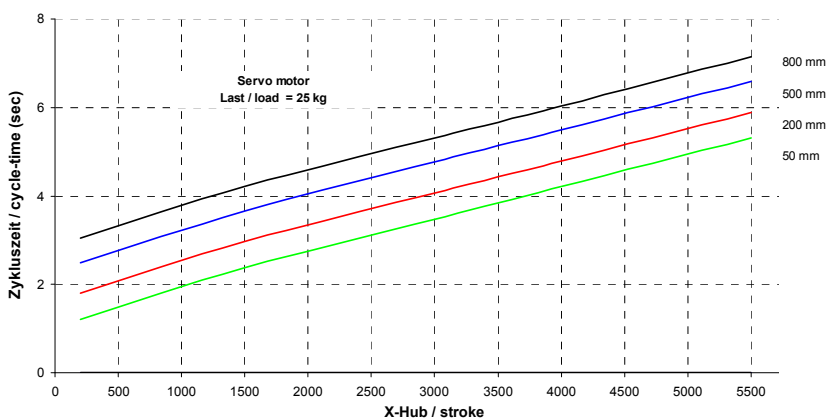
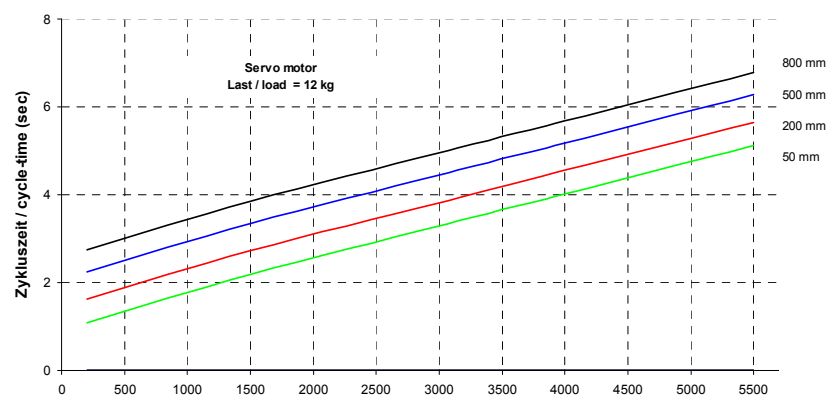
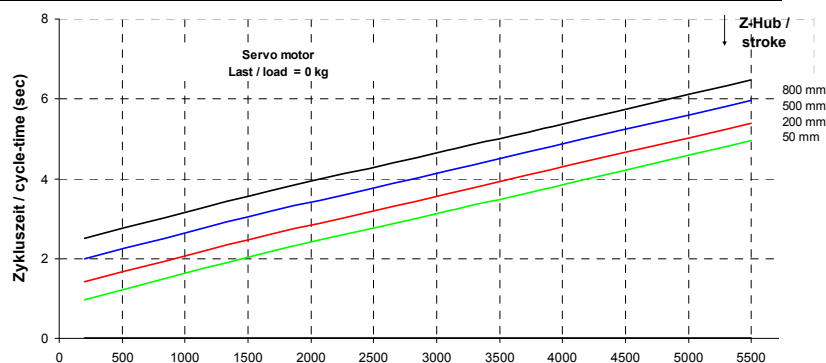
#### Cycle time determination:

1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. Pick the Z-stroke (mm) in the array of curves.
4. The point of intersection shows the cycle time in seconds on the axis of ordinates.

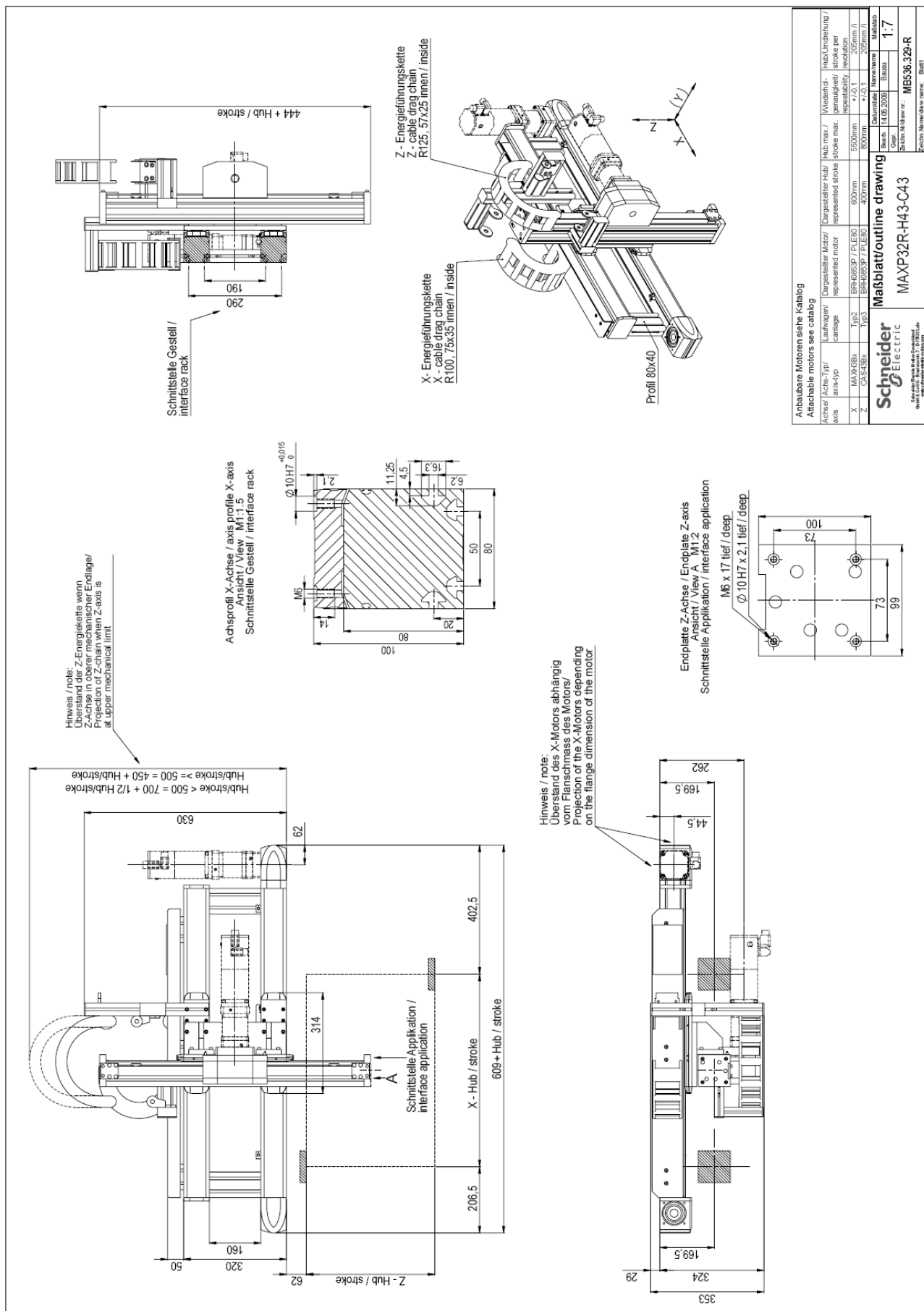
#### Cycle time definition:

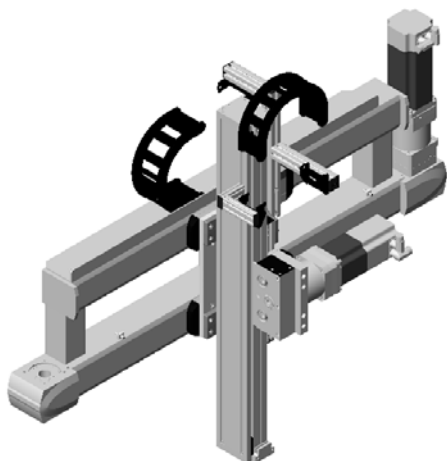


Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH0853P	PLE80 / 5:1
Z-Axis	BRH0853P	PLE80 / 5:1









## Linear positioner

- Typical payload 50 kg
- Ball guide
- Dynamic and heavy payload linear positioner
- Huge working area
- Z-stroke till 1200 mm

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXH4BB	Ball guide	5500	5	+/- 0,10	264	50
Z	CAS44BB	Ball guide	1200	2	+/- 0,05	264	

### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application.

Greater stroke in X and Z-direction on request.

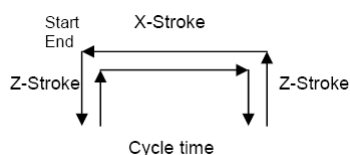
### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.

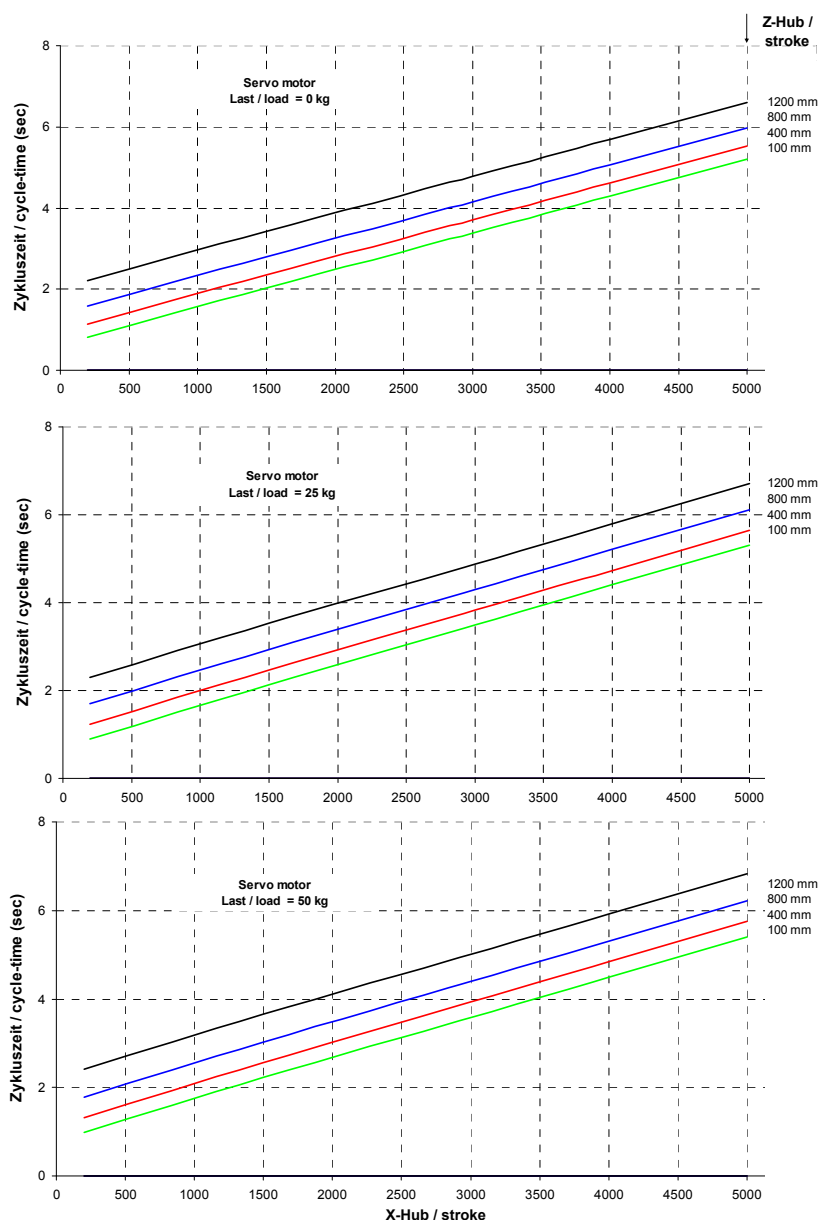
### Cycle time determination:

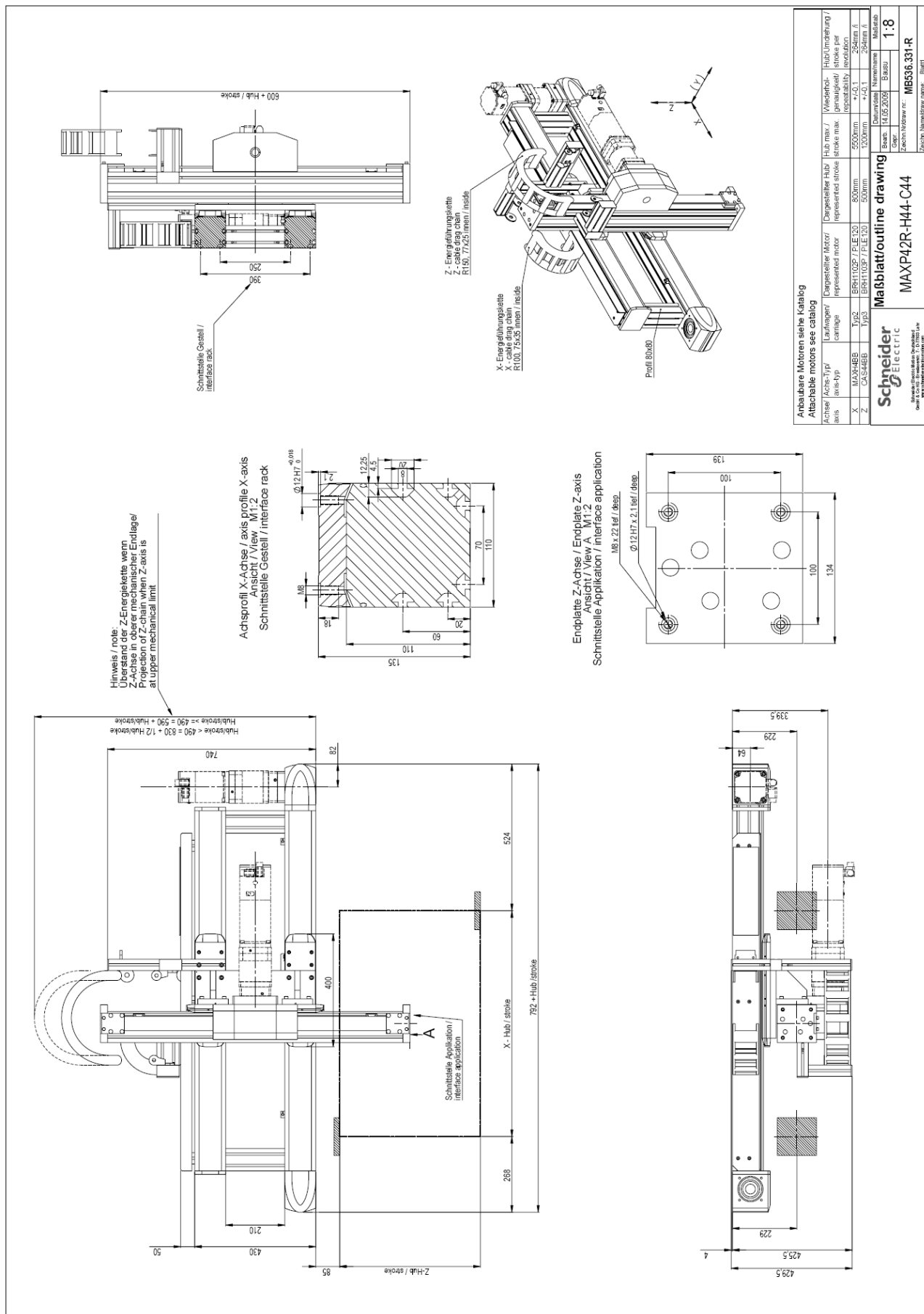
1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. Pick the Z-stroke (mm) in the array of curves.
4. The point of intersection shows the cycle time in seconds on the axis of ordinates.

### Cycle time definition:



Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH1102P	PLE120 / 8:1
Z-Axis	BRH1103P	PLE120 / 5:1





## References (1)

To order a Lexium MAX P linear positioner, complete each reference by replacing the “●” as required (3):

**Example: MAX P 1 2 R – H41 B R 4000 – C41 B R 0400 (3)**

MAX P • 2 • - ••• B • •••• - ••• B • ••••

[illegible]

(1) All the technical data for Lexium MAX P linear positioners is available on the documentation CD-ROM supplied with this catalogue.

(2) Supplied with 2 PNP output sensors. NC contact, with a 100 mm cable equipped with an M8 connector.

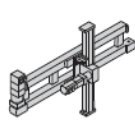
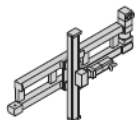
(3) Since the combination of drive elements is specific to each application, it will be necessary to contact your Customer Care Centre.

(4) The maximum length depends on the profile cross-section. Please refer to the characteristics table on the previous page.

(5) *Interface types for the drive element:*

$$\text{MAX } P \bullet 2R - \dots$$

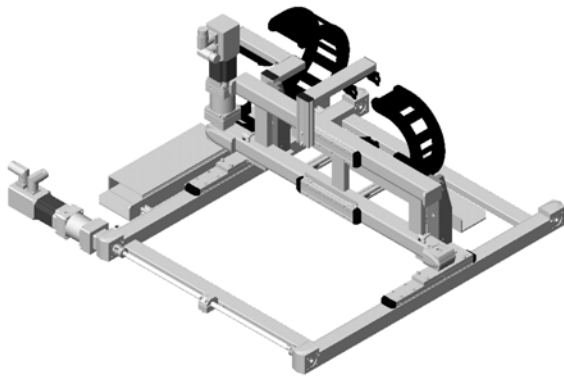
MAX P•2L - ...



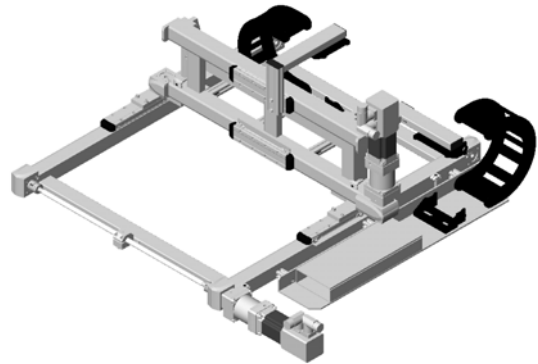


## MAXR●2

Portal robot 2 axes



Left version



Right version

### **MAXR12-S41-P41**

Technical data  
Dimensional drawings

### **MAXR12-S41-H41**

Technical data  
Dimensional drawings

### **MAXR22-S42-P42**

Technical data  
Dimensional drawings

### **MAXR22-S42-H42**

Technical data  
Dimensional drawings

### **MAXR32-S43-P43**

Technical data  
Dimensional drawings

### **MAXR32-S43-H43**

Technical data  
Dimensional drawings

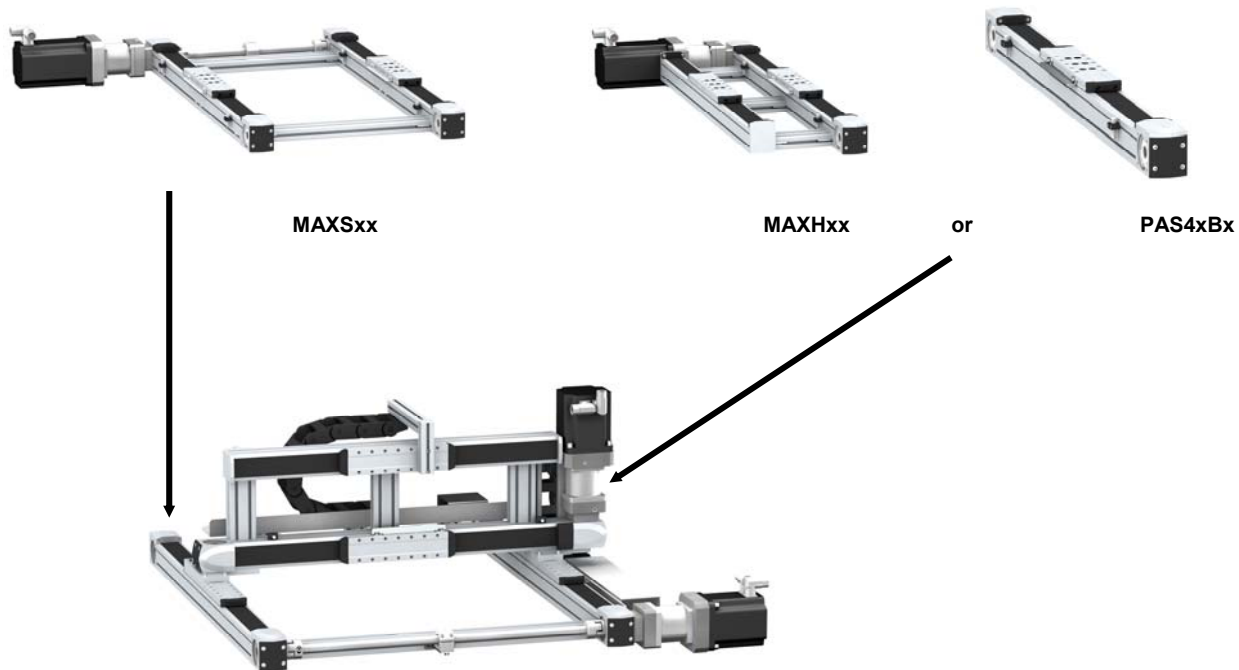
### **MAXR42-S44-H44**

Technical data  
Dimensional drawings

## MAXR●2

Portal robots 2 axes

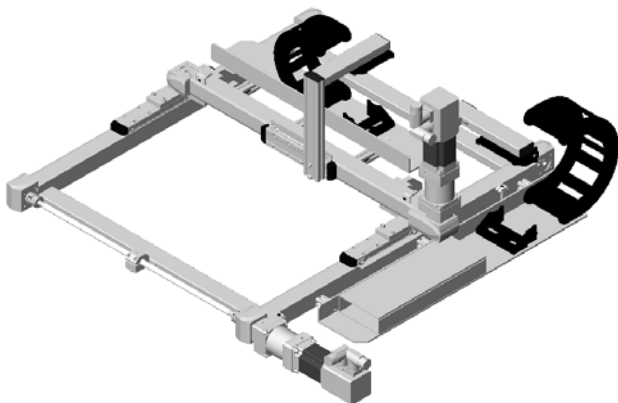
Modular designed, based on the standard MAXS and MAXH-axes combinations and standard single axes.



The space-saving 2 axes portal robot operates above the working area in X and Y directions. The systems are designed for handling loads on long travel paths in X and Y directions.

### Product overview

Type	Guide type	X-Axis		Y-Axis		typ. Payload (kg)
		Type	max. stroke (mm)	Type	max. stroke (mm)	
MAXR12-S41-P41	Roller guide	MAXS1BR	3000	PAS41BR	1200	5
MAXR12-S41-H41	Roller guide	MAXS1BR	3000	MAXH1BR	1200	8
MAXR22-S42-P42	Roller guide	MAXS2BR	5500	PAS42BR	1500	5
	Ball guide	MAXS2BB	5500	PAS42BB	1500	12
MAXR22-S42-H42	Roller guide	MAXS2BR	5500	MAXH2BR	1500	15
	Ball guide	MAXS2BB	5500	MAXH2BB	1500	30
MAXR32-S43-P43	Roller guide	MAXS3BR	5500	PAS43BR	1500	11
	Ball guide	MAXS3BB	5500	PAS43BB	1500	30
MAXR32-S43-H43	Roller guide	MAXS3BR	5500	MAXH3BR	1500	40
	Ball guide	MAXS3BB	5500	MAXH3BB	1500	80
MAXR42-S44-H44	Ball guide	MAXS4BB	5500	MAXH4BB	1500	130



### Two Axes Portal Robot

- Typ. payload 5 kg
- Roller guide
- Dynamic small payload portal robot
- Medium working area

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXS1BR	Roller guide	3000	8	+/- 0,10	84	
Y	PAS41BR	Roller guide	1200	8	+/- 0,10	84	5

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application measures.  
(Per example: payload and length of the synchronic shaft for X-stroke).

Greater stroke in X and Y-direction on request.

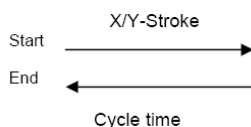
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.  
Based on the fact that with an X/Y positioning, the X axis has the biggest stroke and therefore the longest positioning time, X-stroke is put down on the horizontal diagram axis.

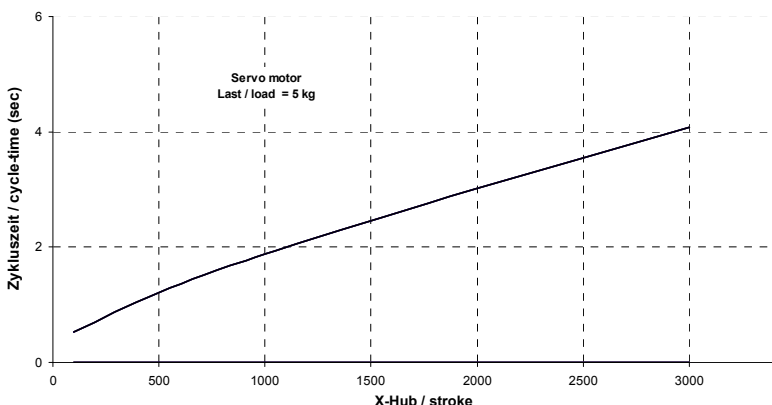
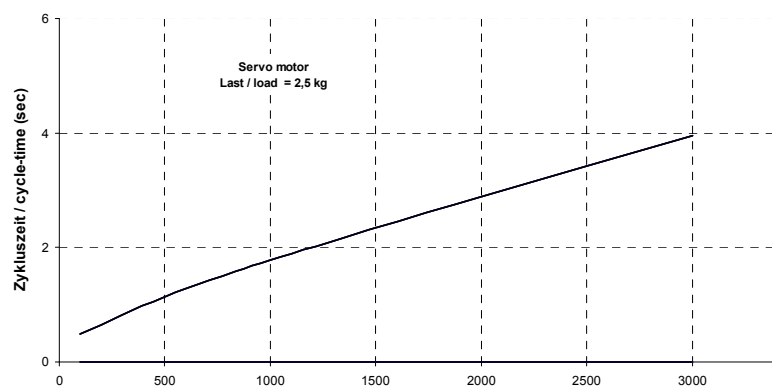
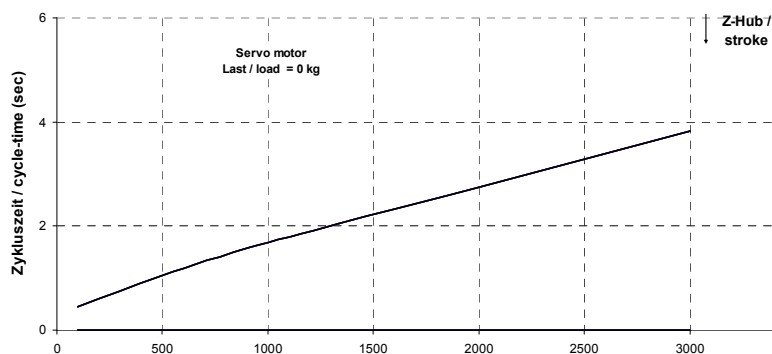
#### Cycle time determination:

1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. The point of intersection shows the cycle time in seconds on the axis of ordinates.

#### Cycle time definition:

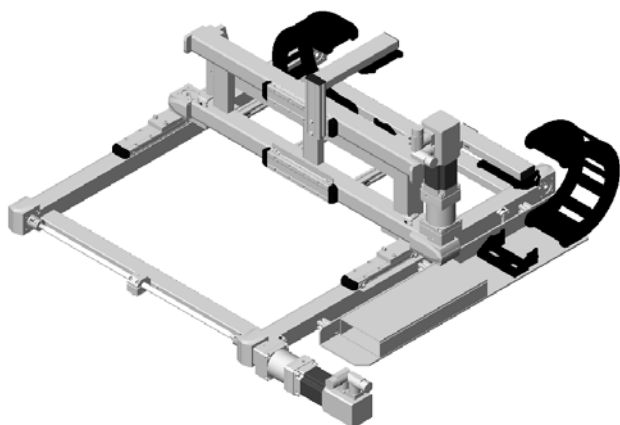


Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH0573P	PLE40 / 3:1
Y-Axis	BRH0571P	PLE40 / 3:1









### Two Axes Portal Robot

- Typ. payload 8 kg
- Roller guide
- Dynamic small payload portal robot
- Medium working area
- Y-axis with torque support axis

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXS1BR	Roller guide	3000	8	+/- 0,10	84	
Y	MAXH1BR	Roller guide	1200	8	+/- 0,10	84	8

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application measures.  
(Per example: payload and length of the synchronic shaft for X-stroke).

Greater stroke in X and Y-direction on request.

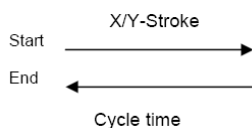
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.  
Based on the fact that with an X/Y positioning, the X axis has the biggest stroke and therefore the longest positioning time, X-stroke is put down on the horizontal diagram axis.

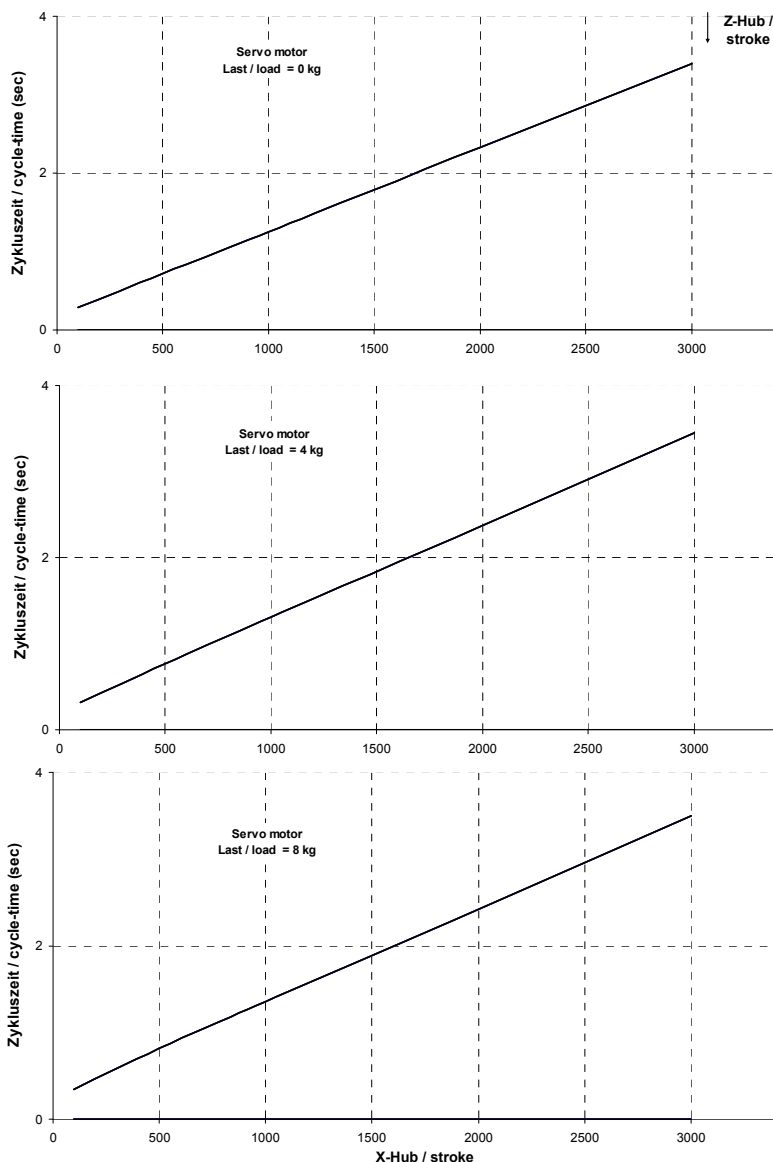
#### Cycle time determination:

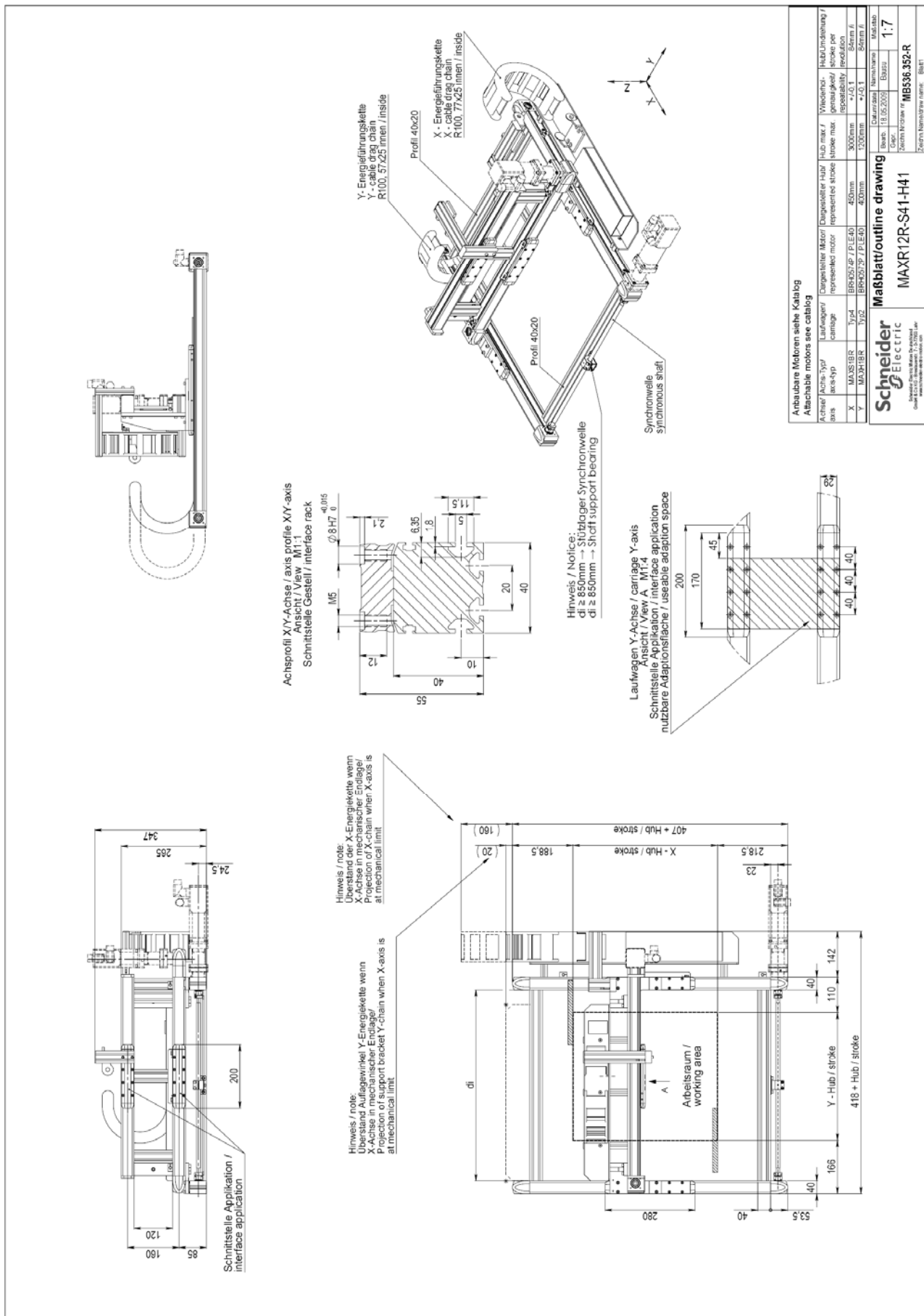
1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. The point of intersection shows the cycle time in seconds on the axis of ordinates.

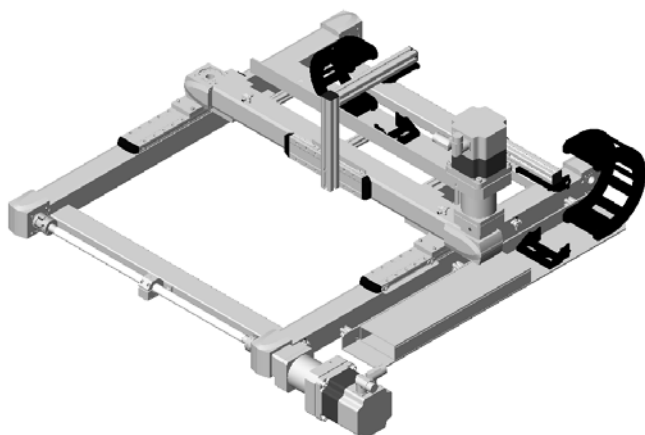
#### Cycle time definition:



Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH0574P	PLE40 / 3:1
Y-Axis	BRH0572P	PLE40 / 3:1







### Two Axes Portal Robot

- Typ. payload
  - with roller guide 5 kg
  - with ball guide 12 kg
- Dynamic small payload portal robot
- Huge working area

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXS2BR	Roller guide	5500	8	+/- 0,10	155	5
Y	PAS42BR	Roller guide	1500	8	+/- 0,10	155	
X	MAXS2BB	Ball guide	5500	5	+/- 0,10	155	12
Y	PAS42BB	Ball guide	1500	5	+/- 0,10	155	

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application measures.  
(Per example: payload and length of the synchronic shaft for X-stroke).

Greater stroke in X and Y-direction on request.

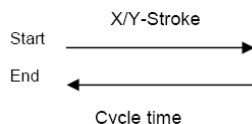
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.  
Based on the fact that with an X/Y positioning, the X axis has the biggest stroke and therefore the longest positioning time, X-stroke is put down on the horizontal diagram axis.

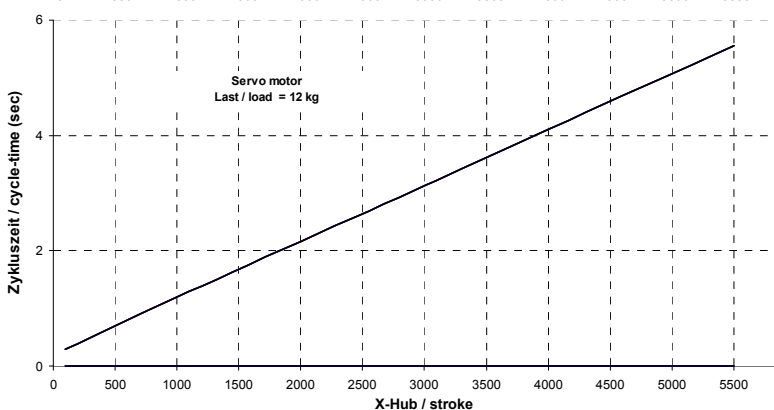
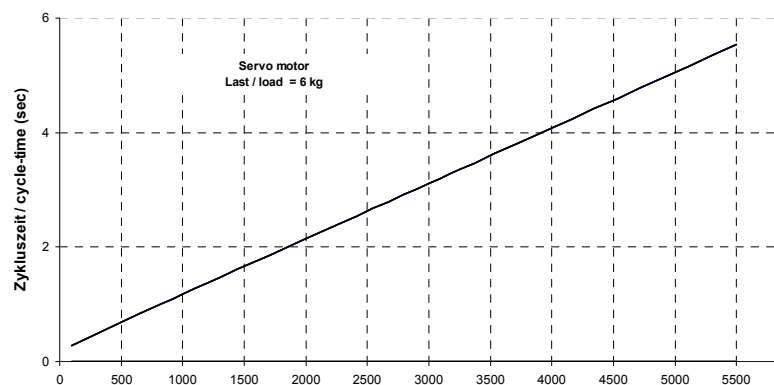
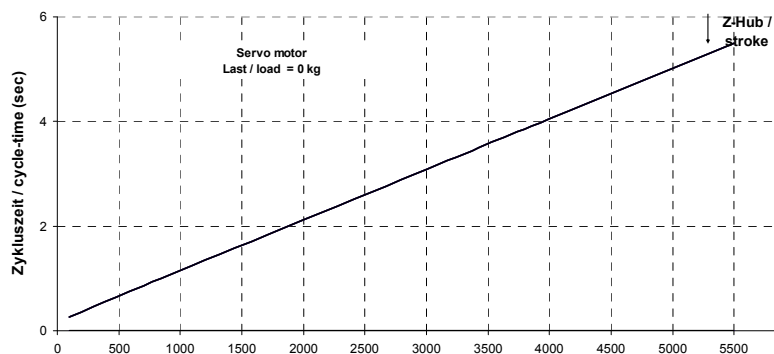
#### Cycle time determination:

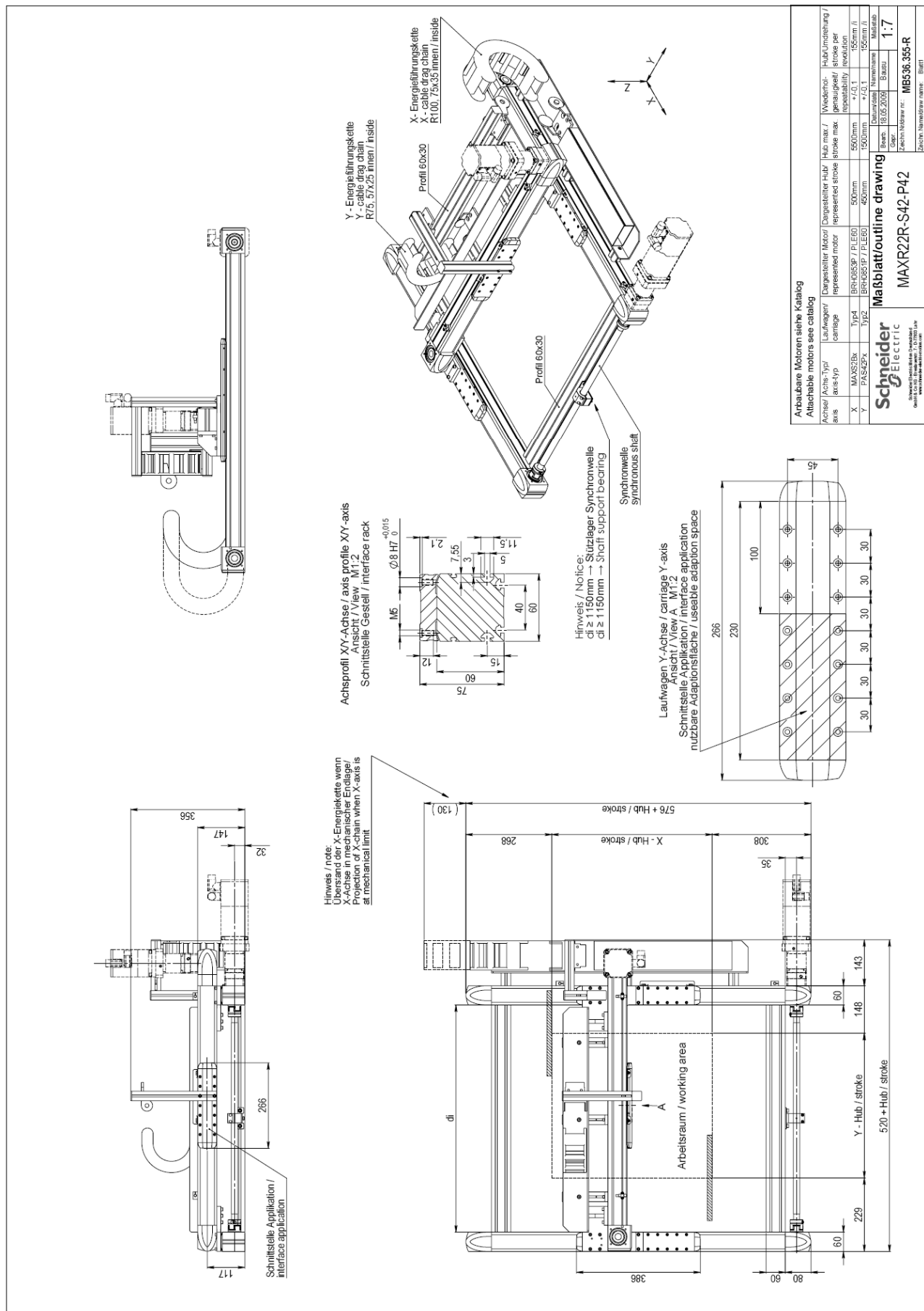
1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. The point of intersection shows the cycle time in seconds on the axis of ordinates.

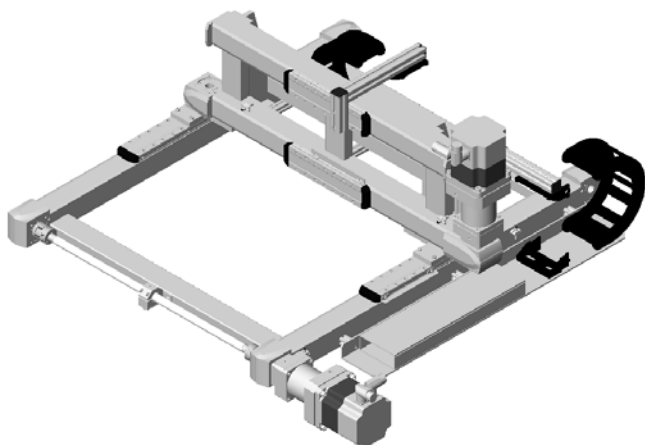
#### Cycle time definition:



Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH0853P	PLE60 / 5:1
Y-Axis	BRH0851P	PLE60 / 5:1







### Two Axes Portal Robot

- Typ. payload  
with roller guide 15 kg  
with ball guide 30 kg
- Dynamic medium payload portal robot
- Huge working area
- Y-axis with torque support axis

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXS2BR	Roller guide	5500	8	+/- 0,10	155	15
Y	MAXH2BR	Roller guide	1500	8	+/- 0,10	155	
X	MAXS2BB	Ball guide	5500	5	+/- 0,10	155	30
Y	MAXH2BB	Ball guide	1500	5	+/- 0,10	155	

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application measures.  
(Per example: payload and length of the synchronic shaft for X-stroke).

Greater stroke in X and Y-direction on request.

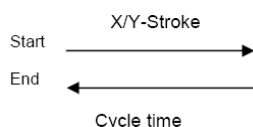
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.  
Based on the fact that with an X/Y positioning, the X axis has the biggest stroke and therefore the longest positioning time, X-stroke is put down on the horizontal diagram axis.

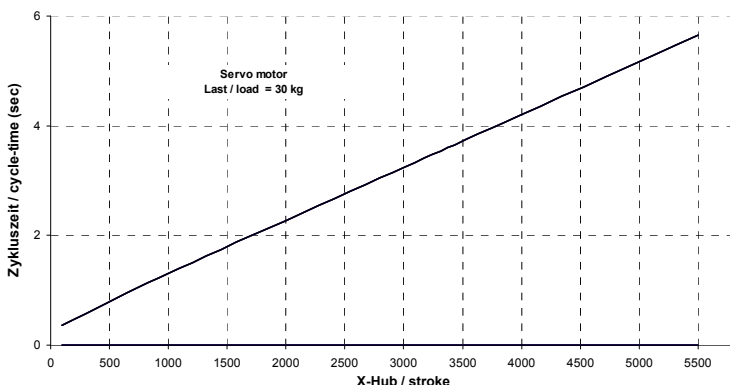
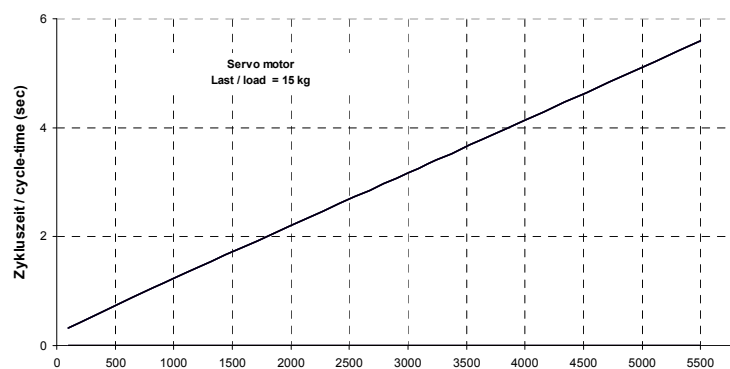
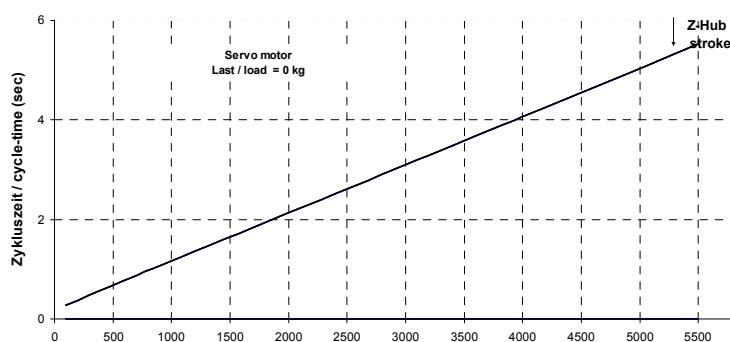
#### Cycle time determination:

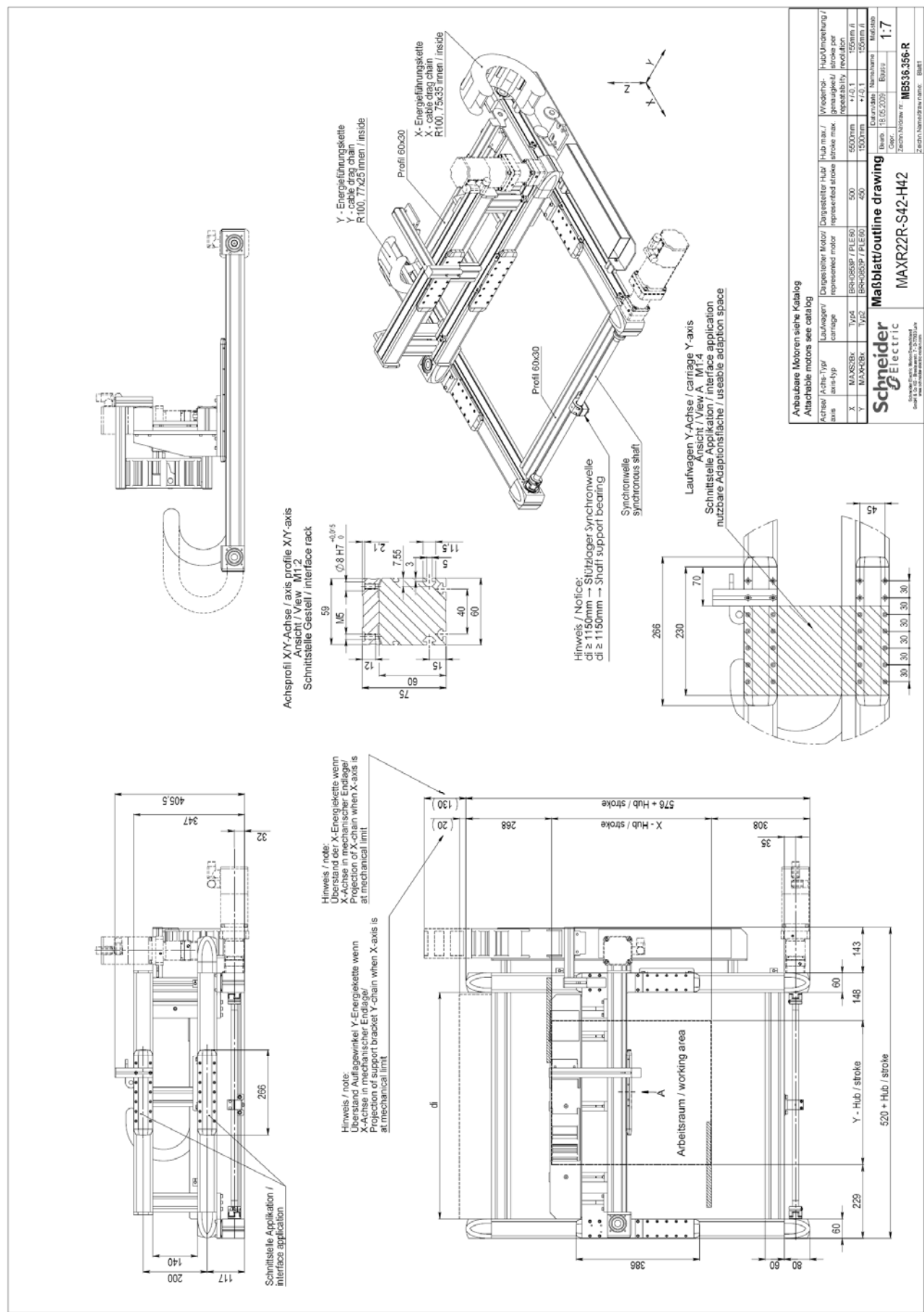
1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. The point of intersection shows the cycle time in seconds on the axis of ordinates.

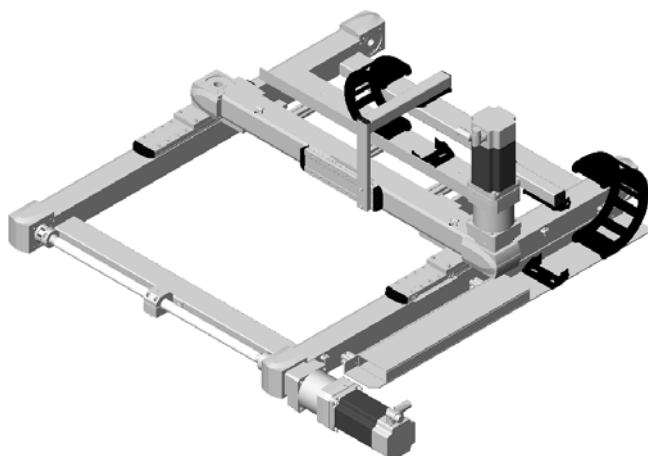
#### Cycle time definition:



Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH0853P	PLE60 / 5:1
Y-Axis	BRH0852P	PLE60 / 5:1







### Two Axes Portal Robot

- Typ. payload with roller guide 11 kg  
with ball guide 30 kg
- Dynamic medium payload portal robot
- Huge working area

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXS3BR	Roller guide	5500	8	+/- 0,10	205	11
Y	PAS43BR	Roller guide	1500	8	+/- 0,10	205	
X	MAXS3BB	Ball guide	5500	5	+/- 0,10	205	30
Y	PAS43BB	Ball guide	1500	5	+/- 0,10	205	

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application measures.  
(Per example: payload and length of the synchronic shaft for X-stroke).

Greater stroke in X and Y-direction on request.

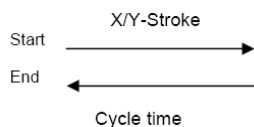
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.  
Based on the fact that with an X/Y positioning, the X axis has the biggest stroke and therefore the longest positioning time, X-stroke is put down on the horizontal diagram axis.

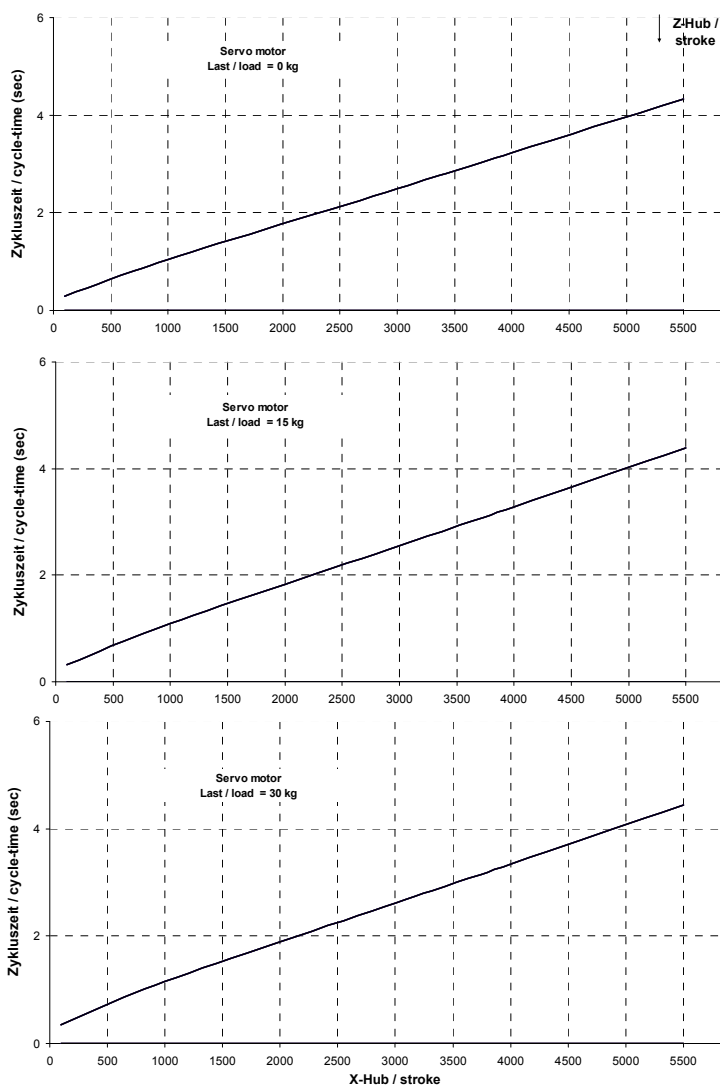
#### Cycle time determination:

1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. The point of intersection shows the cycle time in seconds on the axis of ordinates.

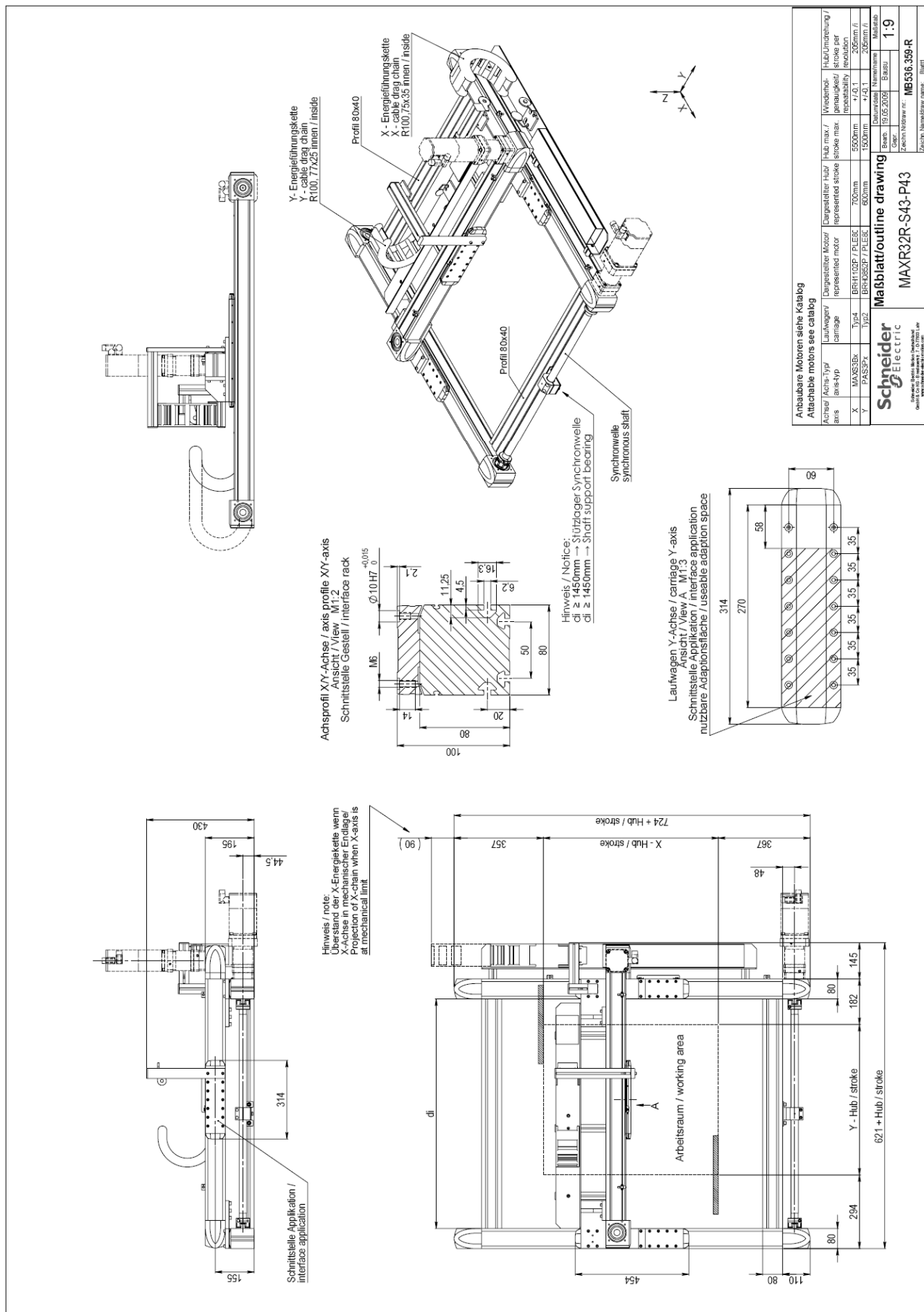
#### Cycle time definition:

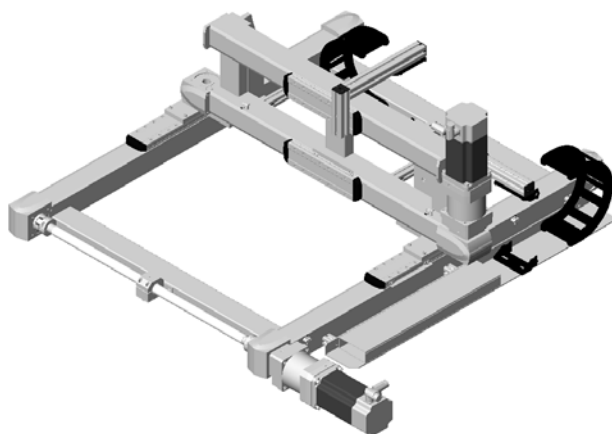


Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH1102P	PLE80 / 5:1
Y-Axis	BRH0852P	PLE80 / 5:1









### Two Axes Portal Robot

- Typ. payload  
with roller guide 40 kg  
with ball guide 80 kg
- Dynamic medium till heavy payload portal robot
- Huge working area
- Y-axis with torque support axis

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXS3BR	Roller guide	5500	8	+/- 0,10	205	40
Y	MAXH3BR	Roller guide	1500	8	+/- 0,10	205	
X	MAXS3BB	Ball guide	5500	5	+/- 0,10	205	80
Y	MAXH3BB	Ball guide	1500	5	+/- 0,10	205	

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application measures.  
(Per example: payload and length of the synchronic shaft for X-stroke).

Greater stroke in X and Y-direction on request.

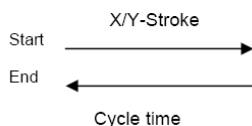
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.  
Based on the fact that with an X/Y positioning, the X axis has the biggest stroke and therefore the longest positioning time, X-stroke is put down on the horizontal diagram axis.

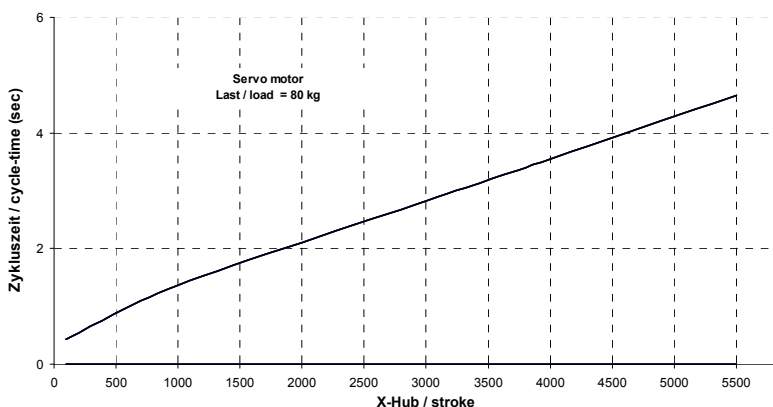
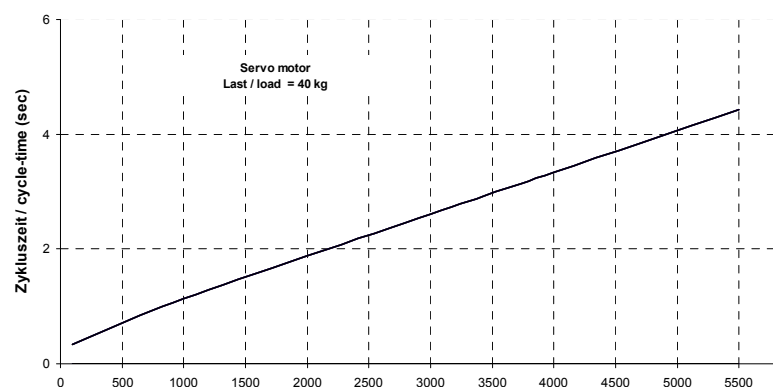
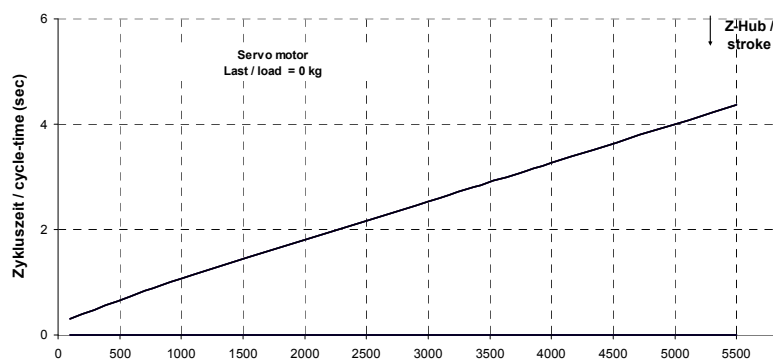
#### Cycle time determination:

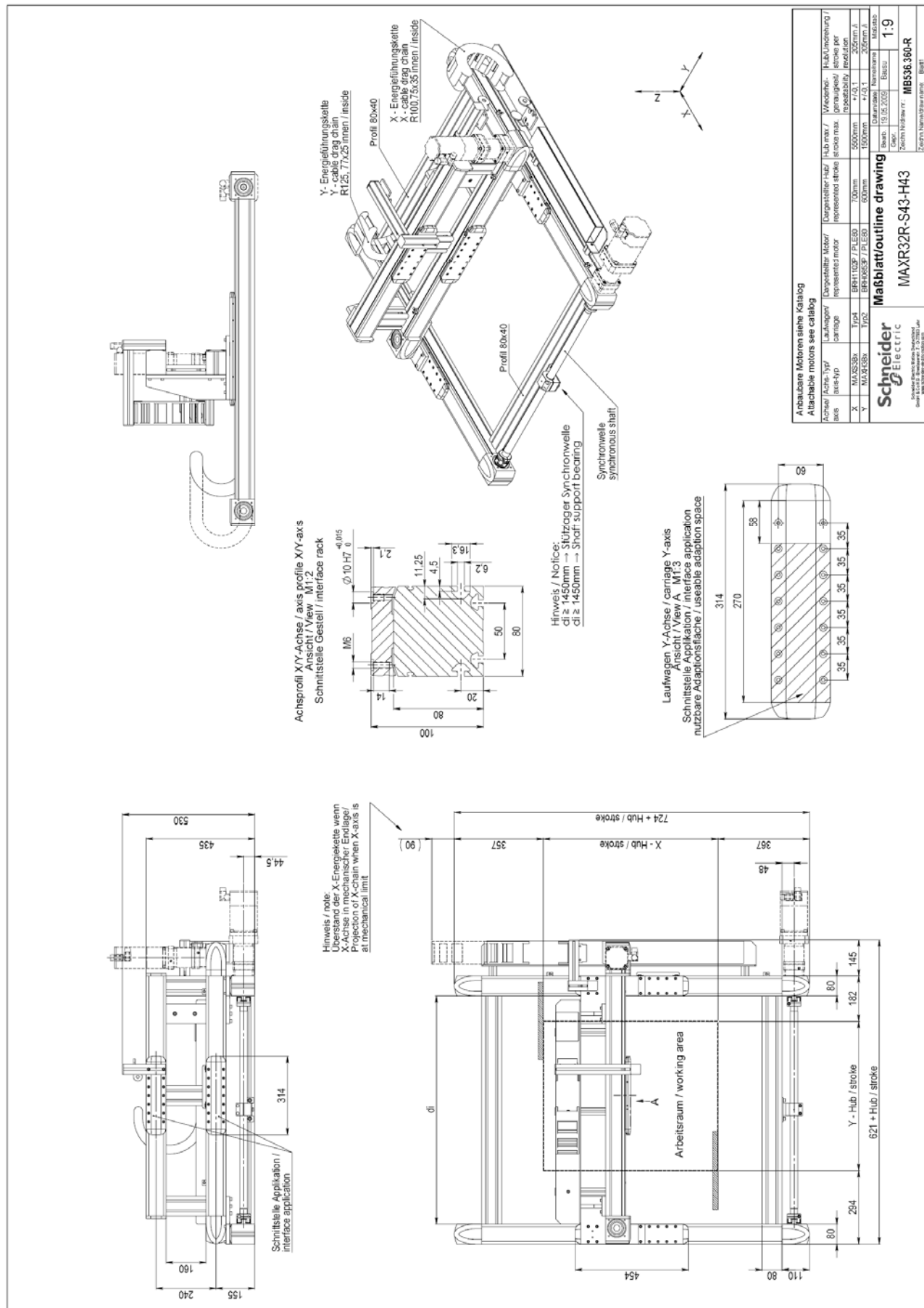
1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. The point of intersection shows the cycle time in seconds on the axis of ordinates.

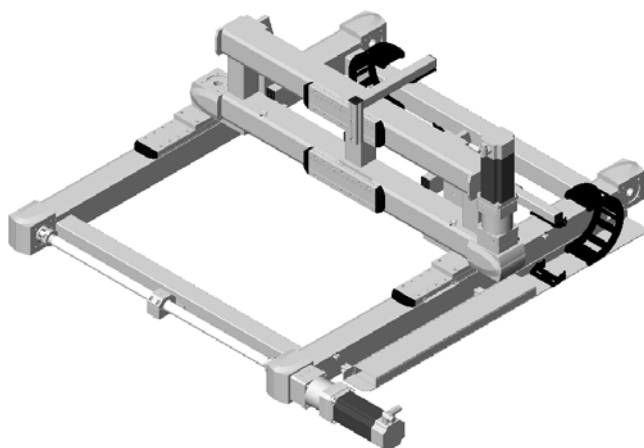
#### Cycle time definition:



Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH1102P	PLE80 / 5:1
Y-Axis	BRH0853P	PLE80 / 5:1







### Two Axes Portal Robot

- Typ. payload 130 Kg
- Ball guide
- Dynamic heavy payload portal robot
- Huge working area
- Y-axis with torque support axis

Axis direction	Basis axes	Guide type	max. stroke (mm) *	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXS4BB	Ball guide	5500	5	+/- 0,10	264	
Y	MAXH4BB	Ball guide	1500	5	+/- 0,10	264	130

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application measures.  
(Per example: payload and length of the synchronic shaft for X-stroke).

Greater stroke in X and Y-direction on request.

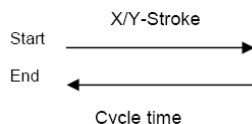
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.  
Based on the fact that with an X/Y positioning, the X axis has the biggest stroke and therefore the longest positioning time, X-stroke is put down on the horizontal diagram axis.

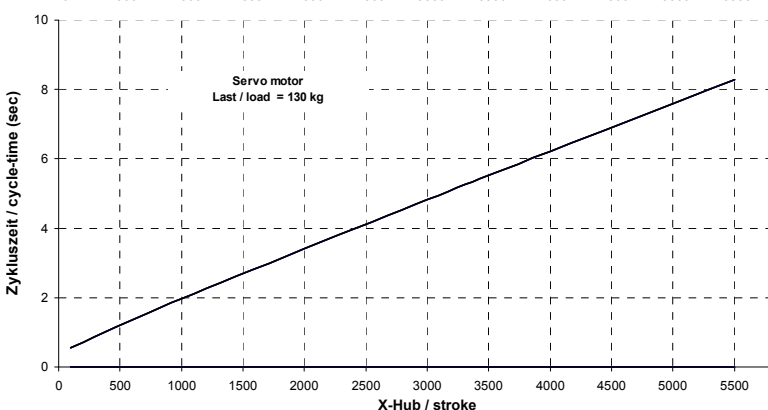
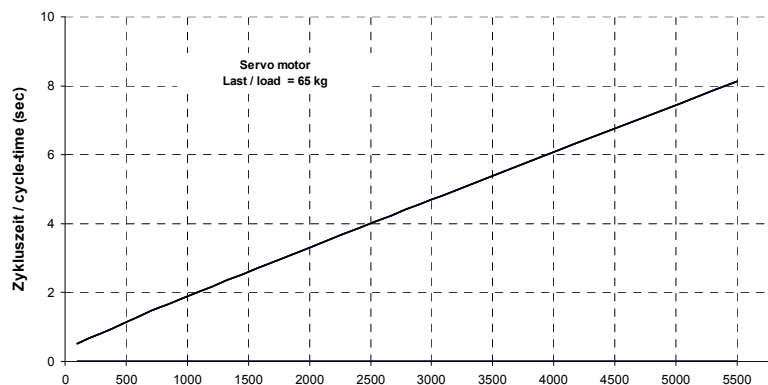
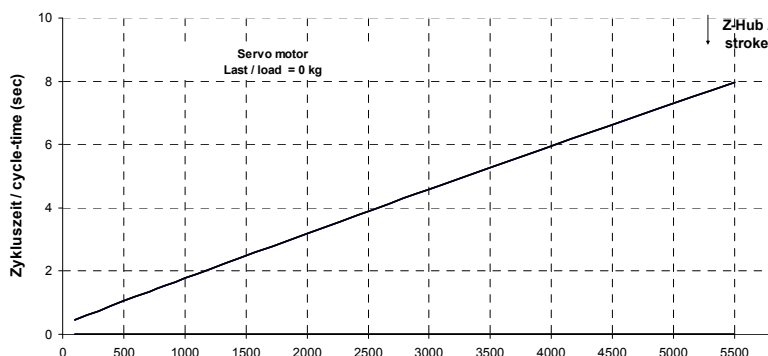
#### Cycle time determination:

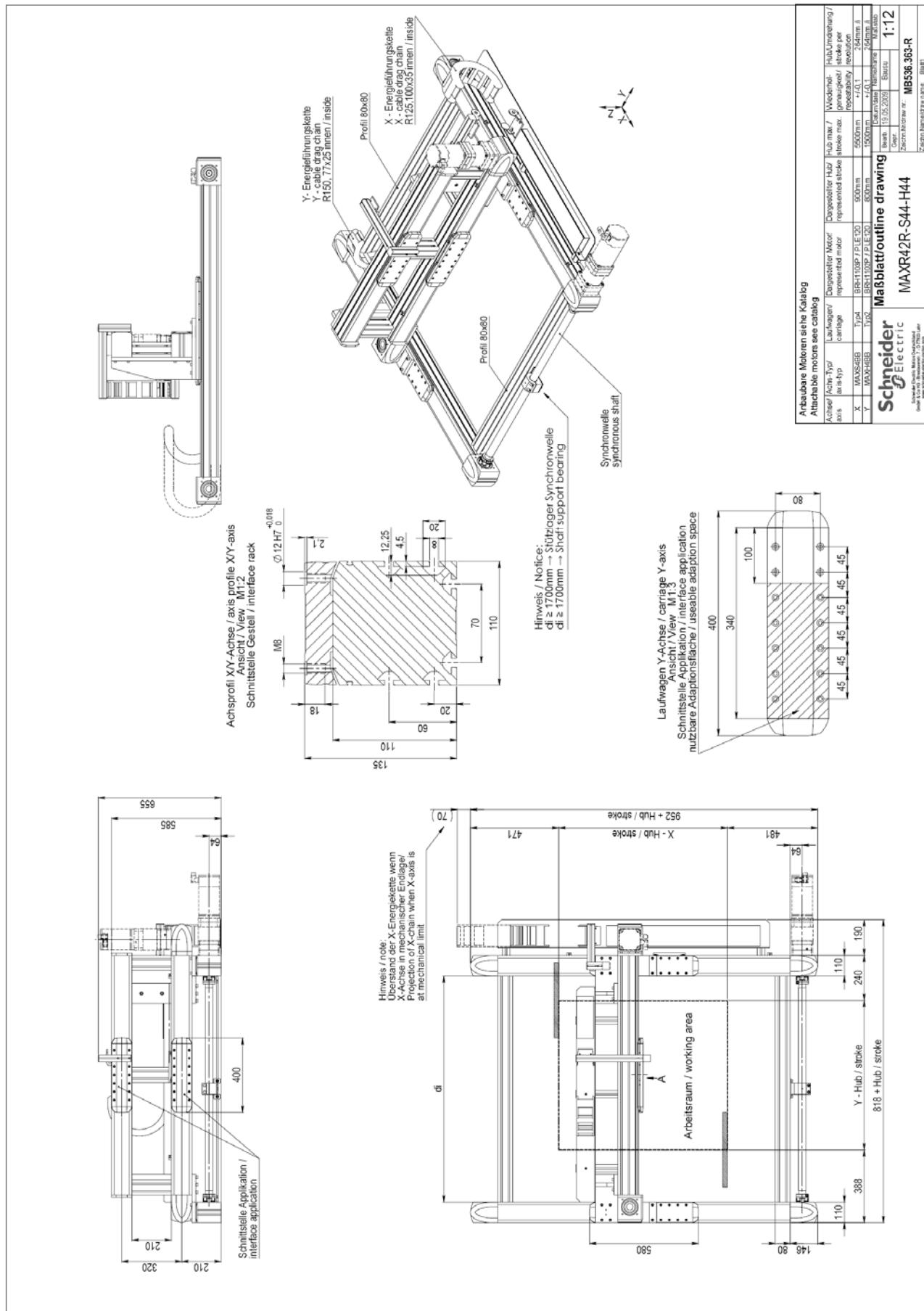
1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. The point of intersection shows the cycle time in seconds on the axis of ordinates.

#### Cycle time definition:



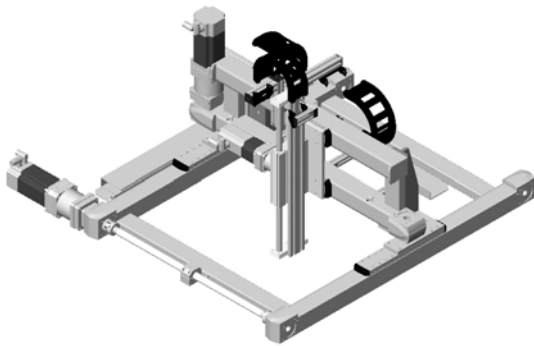
Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH1103P	PLE120 / 8:1
Y-Axis	BRH1102P	PLE120 / 8:1



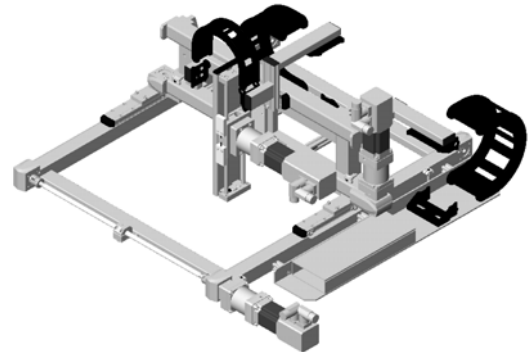


## MAXR●3

Portal robot 3 axes



Left version



Right version

### **MAXR13-S41-H41-C31**

Technical data  
Dimensional drawings

### **MAXR13-S41-H41-C41**

Technical data  
Dimensional drawings

### **MAXR23-S42-H42-C32**

Technical data  
Dimensional drawings

### **MAXR23-S42-H42-C42**

Technical data  
Dimensional drawings

### **MAXR33-S43-H43-C34**

Technical data  
Dimensional drawings

### **MAXR33-S43-H43-C43**

Technical data  
Dimensional drawings

### **MAXR43-S44-H44-C44**

Technical data  
Dimensional drawings

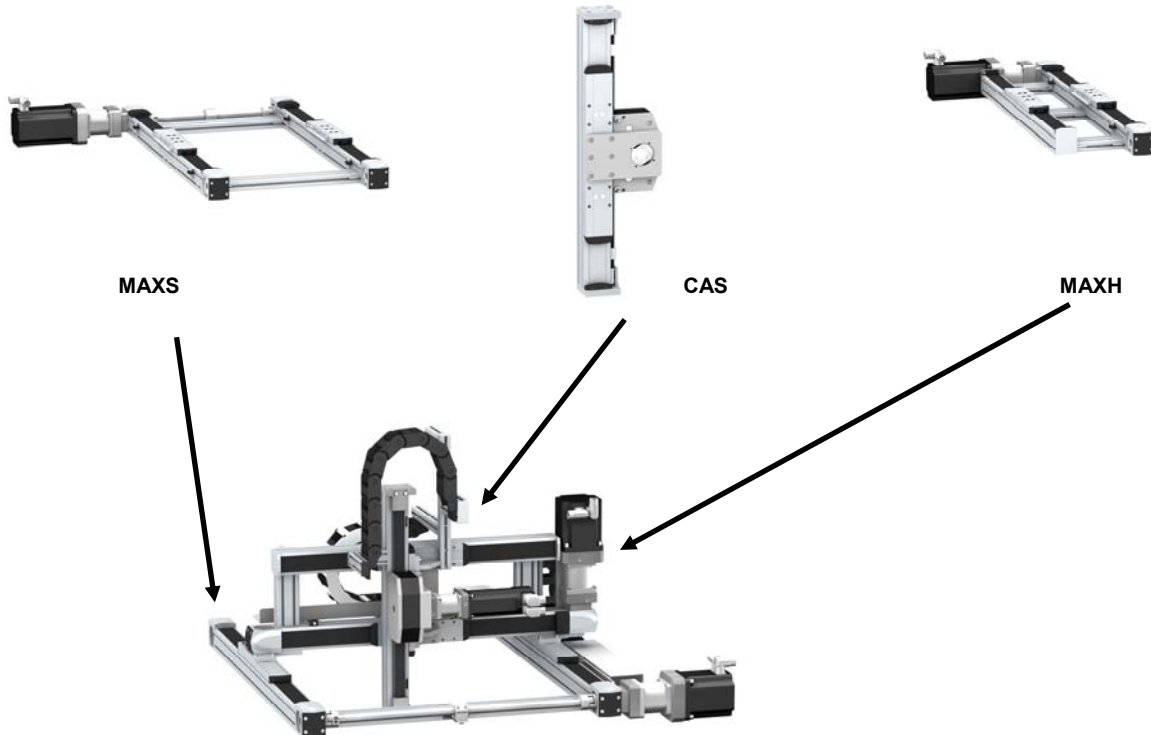
### **Type code**

Portal robot 2 axes  
Portal robot 3 axes

## MAXR•3

Portalroboter dreiachsig

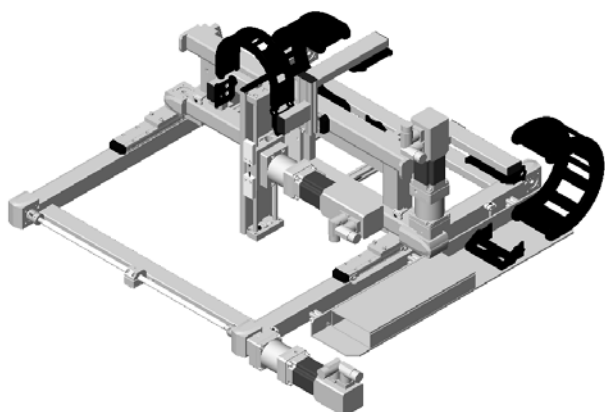
Modular designed, based on standard MAXS and MAXH-axes combinations and standard cantilever axes.



The space-saving 3 axes portal robot operates above the working area in X, Y and Z directions. The systems are designed for handling loads on long travel paths in X, Y directions and short travel paths in Z direction.

### Product overview

Type	Guide type	X-Axis		Y-Axis		Z-Axis		typ. Payload (kg)
		Type	max. stroke (mm)	Type	max. stroke (mm)	Type	max. stroke (mm)	
MAXR13-S41-H41-C31	Roller guide	MAXS1BR	3000	MAXH1BR	1200	CAS31BC	200	2
MAXR13-S41-H41-C41	Roller guide	MAXS1BR	3000	MAXH1BR	1200	CAS41BB	400	4
MAXR23-S42-H42-C32	Roller guide	MAXS2BR	5500	MAXH2BR	1500	CAS32BC	300	4
	Ball guide	MAXS2BB	5500	MAXH2BB	1500	CAS32BC	300	5
MAXR23-S42-H42-C42	Roller guide	MAXS2BR	5500	MAXH2BR	1500	CAS42BR	600	6
	Ball guide	MAXS2BB	5500	MAXH2BB	1500	CAS42BB	600	15
MAXR33-S43-H43-C34	Roller guide	MAXS3BR	5500	MAXH2BR	1500	CAS34BC	500	14
	Ball guide	MAXS3BB	5500	MAXH2BB	1500	CAS34BC	500	18
MAXR33-S43-H43-C43	Roller guide	MAXS3BR	5500	MAXH3BR	1500	CAS43BR	500	9
	Ball guide	MAXS3BB	5500	MAXH3BB	1500	CAS43BB	500	25
MAXR43-S44-H44-C44	Ball guide	MAXS4BB	5500	MAXH4BB	1500	CAS44BB	1200	50



### Three Axes Portal Robot

- Typ. payload 2 kg
- Roller guide
- Fast and dynamic small payload portal robot for pick & place - tasks
- Small till medium working area
- Z-Stroke till 200 mm

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXS1BR	Roller guide	3000	8	+/- 0,10	84	2
Y	MAXH1BR	Roller guide	1200	8	+/- 0,10	84	
Z	CAS31BC	Ball bearing	200	2	+/- 0,05	75	

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application measures.  
(Per example: payload and length of the synchronic shaft for X-stroke).

Greater stroke in X-Y and Z-direction on request.

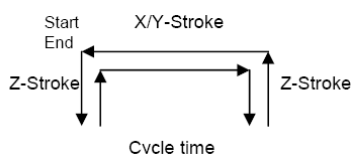
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.  
Based on the fact that with an X/Y positioning, the X axis has the biggest stroke and therefore the longest positioning time, X-stroke is put down on the horizontal diagram axis.

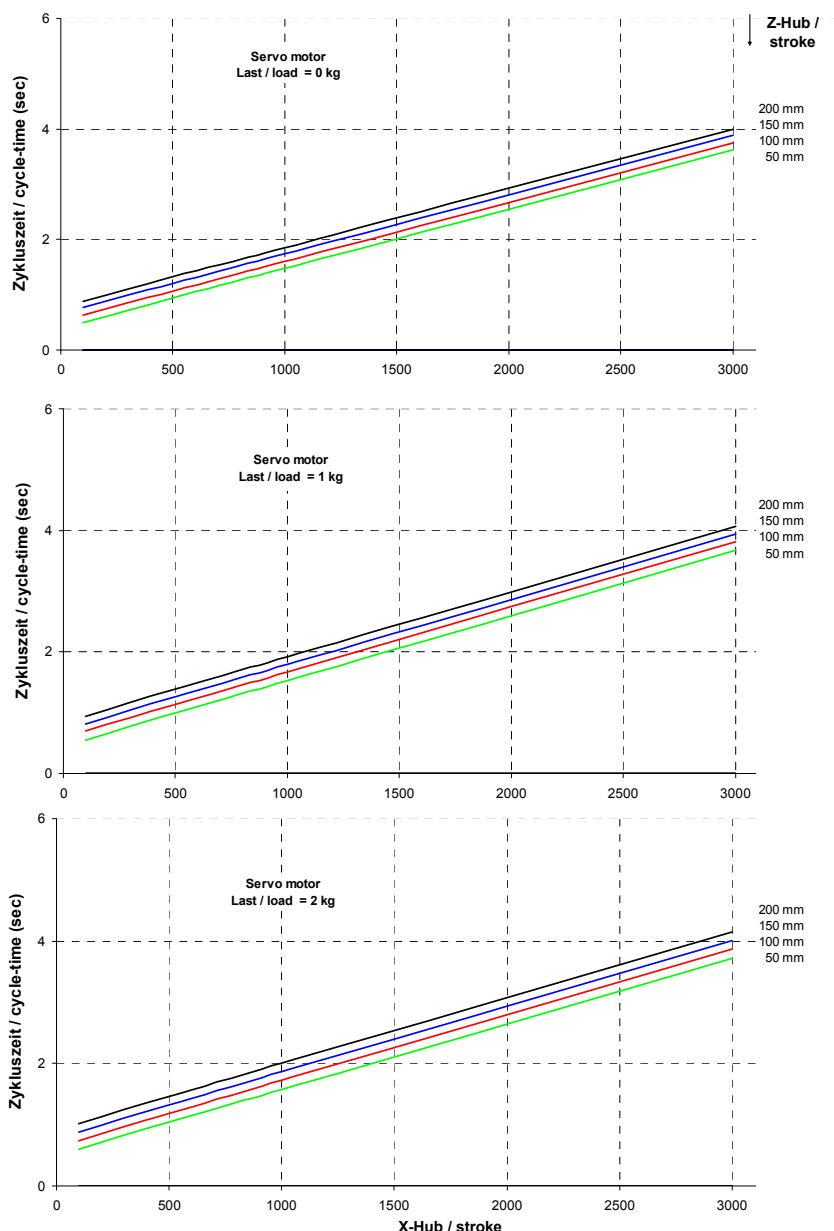
#### Cycle time determination:

1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. Pick the Z-stroke (mm) in the array of curves.
4. The point of intersection shows the cycle time in seconds on the axis of ordinates.

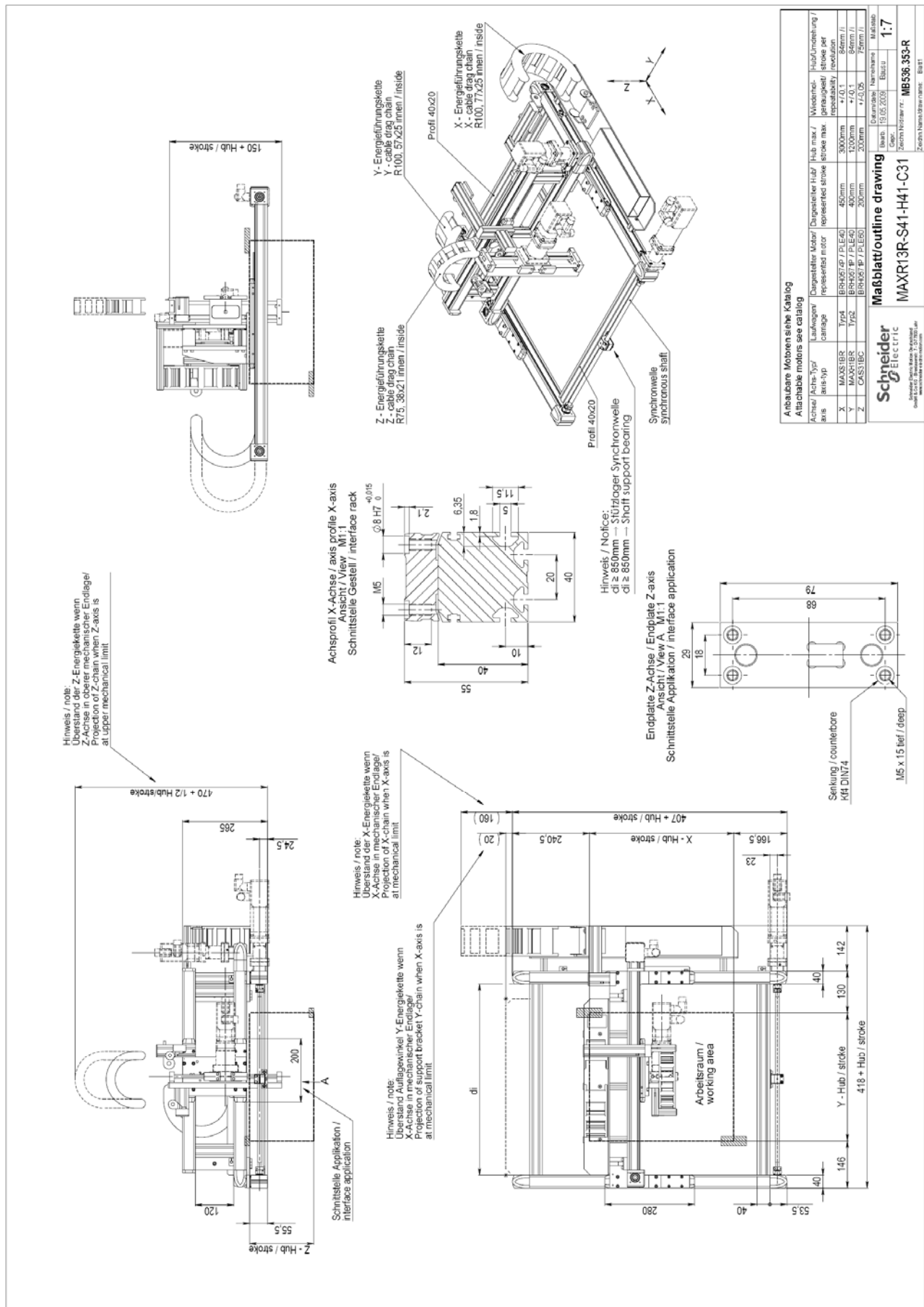
#### Cycle time definition:

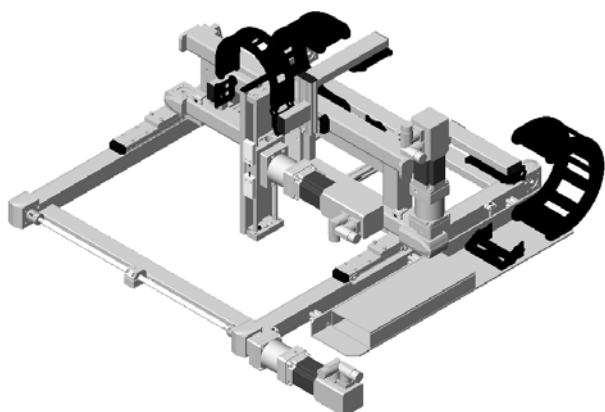


Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH0574P	PLE40 / 3:1
Y-Axis	BRH0571P	PLE40 / 3:1
Z-Axis	BRH0571P	PLE40 / 3:1









### Three Axes Portal Robot

- Typ. payload 4 kg
- Roller guide
- Fast and dynamic small payload portal robot for pick & place - tasks
- Small till medium working area
- Z-Stroke till 400 mm

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXS1BR	Roller guide	3000	8	+/- 0,10	84	4
Y	MAXH1BR	Roller guide	1200	8	+/- 0,10	84	
Z	CAS41BR	Roller guide	400	2	+/- 0,05	84	

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application measures.  
(Per example: payload and length of the synchronic shaft for X-stroke).

Greater stroke in X-Y and Z-direction on request.

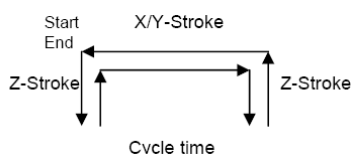
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.  
Based on the fact that with an X/Y positioning, the X axis has the biggest stroke and therefore the longest positioning time, X-stroke is put down on the horizontal diagram axis.

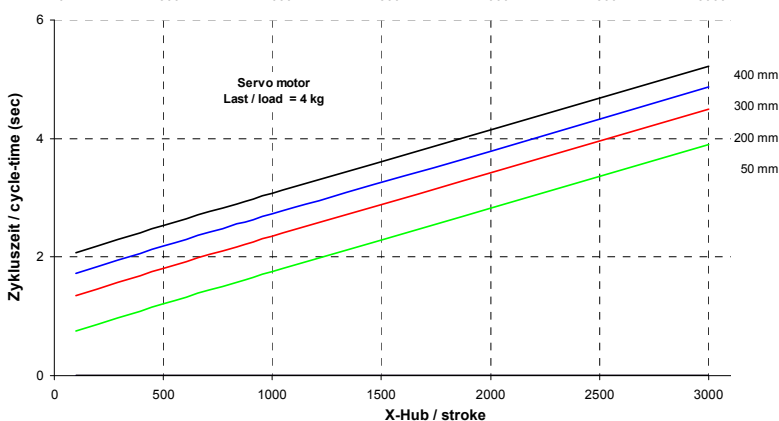
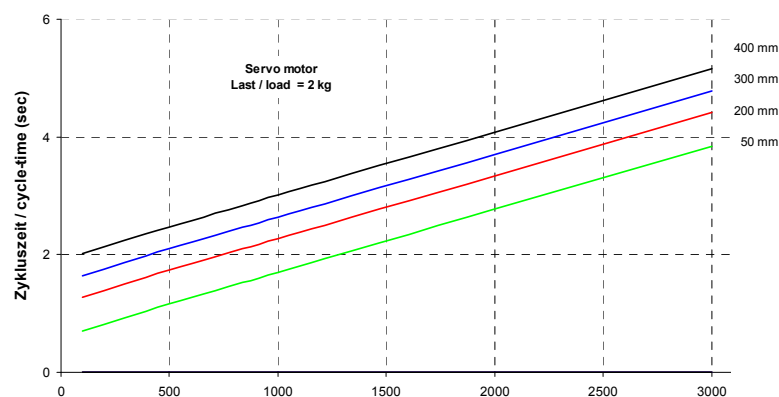
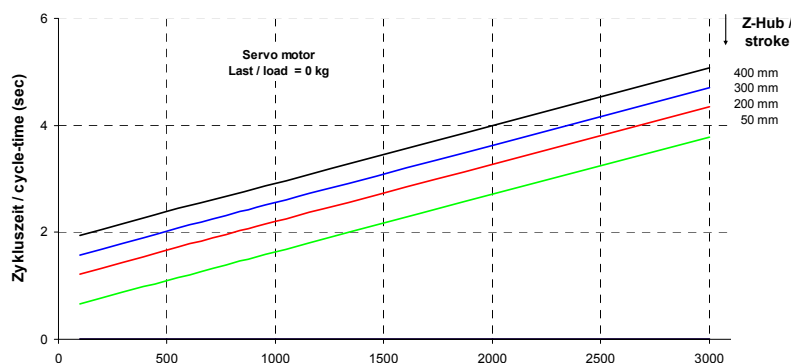
#### Cycle time determination:

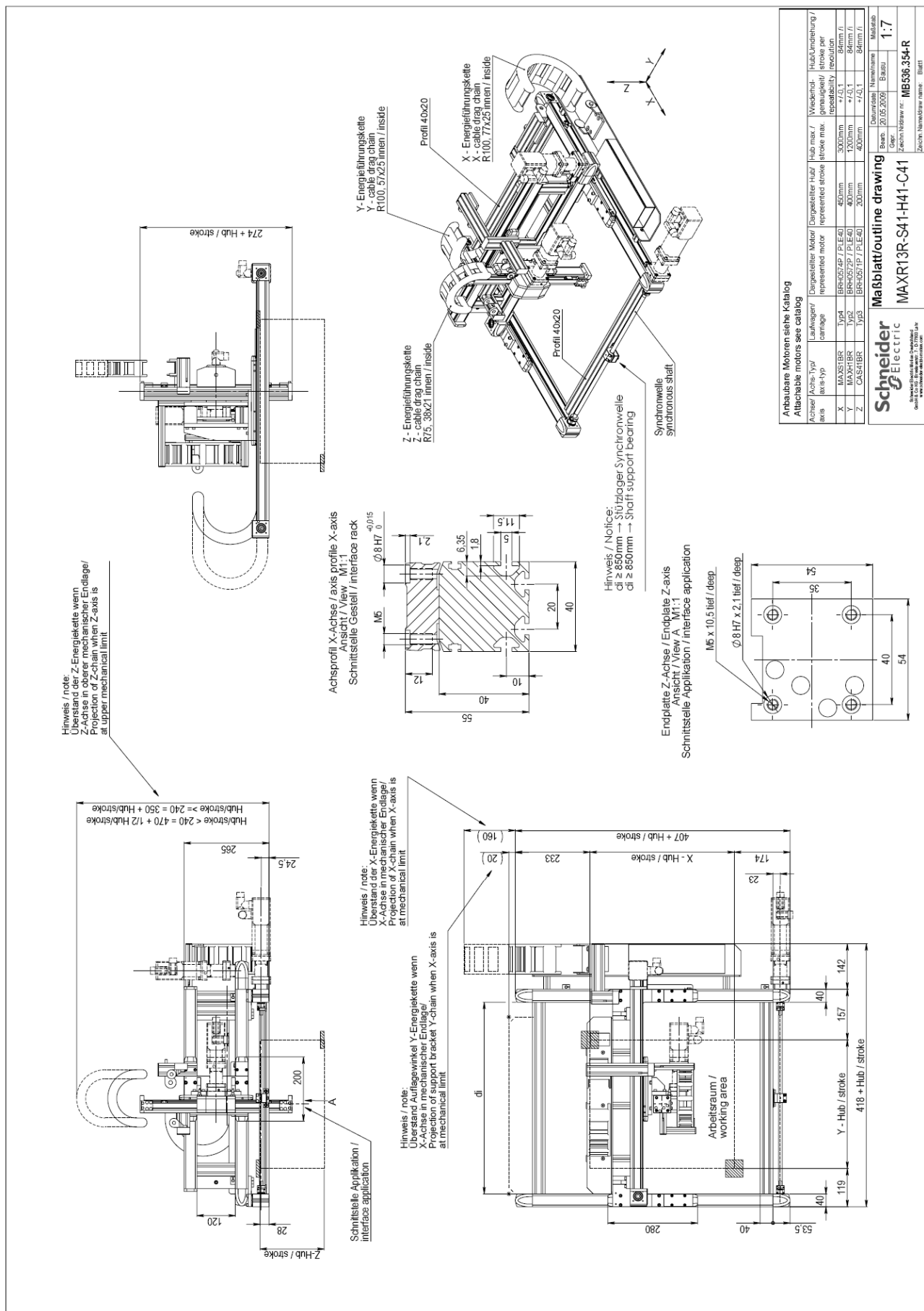
1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. Pick the Z-stroke (mm) in the array of curves.
4. The point of intersection shows the cycle time in seconds on the axis of ordinates.

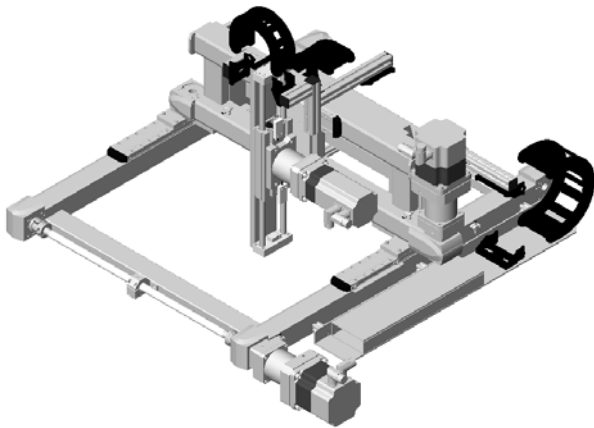
#### Cycle time definition:



Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH0574P	PLE40 / 3:1
Y-Axis	BRH0572P	PLE40 / 3:1
Z-Axis	BRH0571P	PLE40 / 5:1







### Three Axes Portal Robot

- Typ. payload  
with roller guide 4kg  
with ball guide 5kg
- Dynamic medium payload portal robot  
for pick & place - tasks
- Huge working area
- Z-stroke till 300 mm

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXS2BR	Roller guide	5500	8	+/- 0,10	155	4
Y	MAXH2BR	Roller guide	1500	8	+/- 0,10	155	
Z	CAS32BC	Ball bearing	300	2	+/- 0,05	100	
X	MAXS2BB	Ball guide	5500	5	+/- 0,10	155	5
Y	MAXH2BB	Ball guide	1500	5	+/- 0,10	155	
Z	CAS32BC	Ball bearing	300	2	+/- 0,05	100	

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application measures.  
(Per example: payload and length of the synchronic shaft for X-stroke).

Greater stroke in X-Y and Z-direction on request.

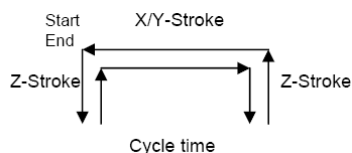
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.  
Based on the fact that with an X/Y positioning, the X axis has the biggest stroke and therefore the longest positioning time, X-stroke is put down on the horizontal diagram axis.

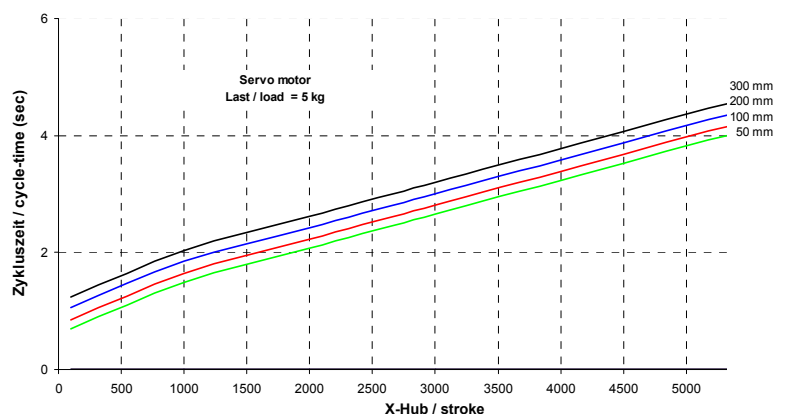
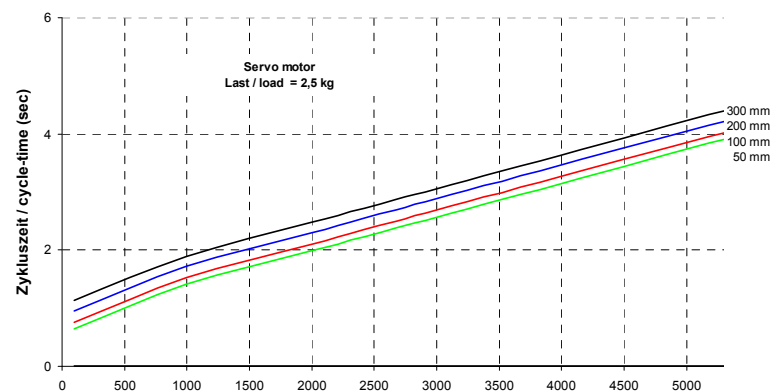
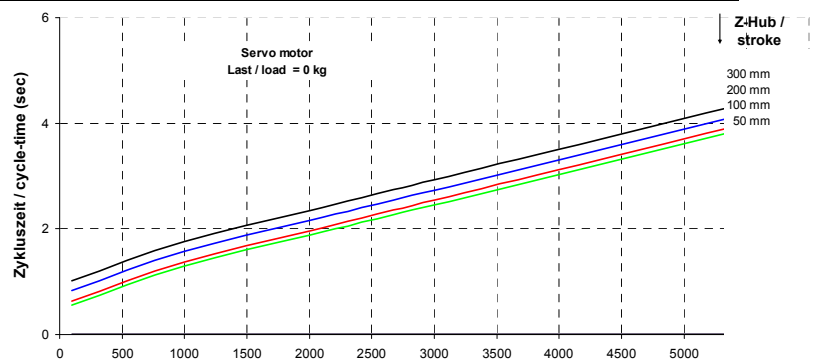
#### Cycle time determination:

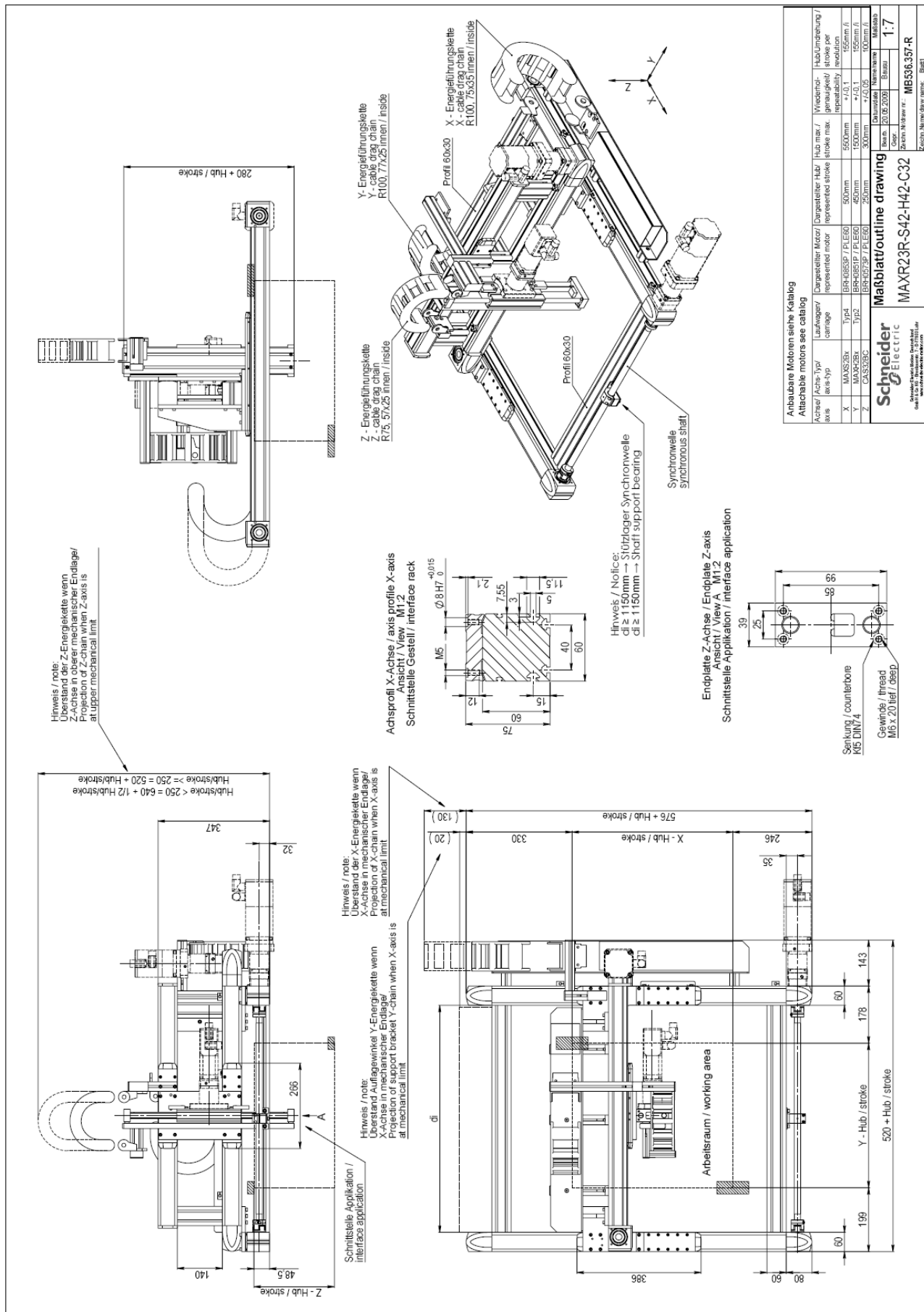
1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. Pick the Z-stroke (mm) in the array of curves.
4. The point of intersection shows the cycle time in seconds on the axis of ordinates.

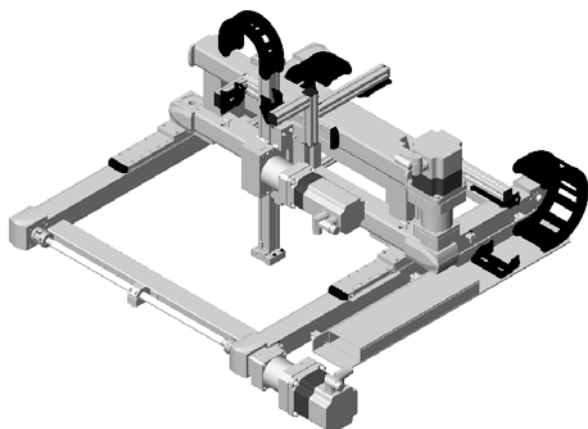
#### Cycle time definition:



Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH0853P	PLE60 / 5:1
Y-Axis	BRH0851P	PLE60 / 5:1
Z-Axis	BRH0573P	PLE60 / 3:1







### Three Axes Portal Robot

- Typ. payload  
with roller guide 6 kg  
with ball guide 15 kg
- Dynamic small payload portal robot  
for pick & place - tasks
- Huge working area
- Z-stroke till 600 mm

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXS2BR	Roller guide	5500	8	+/- 0,10	155	6
Y	MAXH2BR	Roller guide	1500	8	+/- 0,10	155	
Z	CAS42BR	Roller guide	600	5	+/- 0,05	155	
X	MAXS2BB	Ball guide	5500	5	+/- 0,10	155	15
Y	MAXH2BB	Ball guide	1500	5	+/- 0,10	155	
Z	CAS42BB	Ball guide	600	5	+/- 0,05	155	

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application measures.  
(Per example: payload and length of the synchronic shaft for X-stroke).

Greater stroke in X-Y and Z-direction on request.

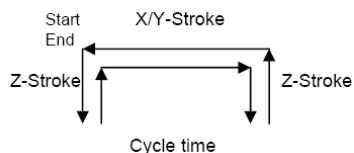
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.  
Based on the fact that with an X/Y positioning, the X axis has the biggest stroke and therefore the longest positioning time, X-stroke is put down on the horizontal diagram axis.

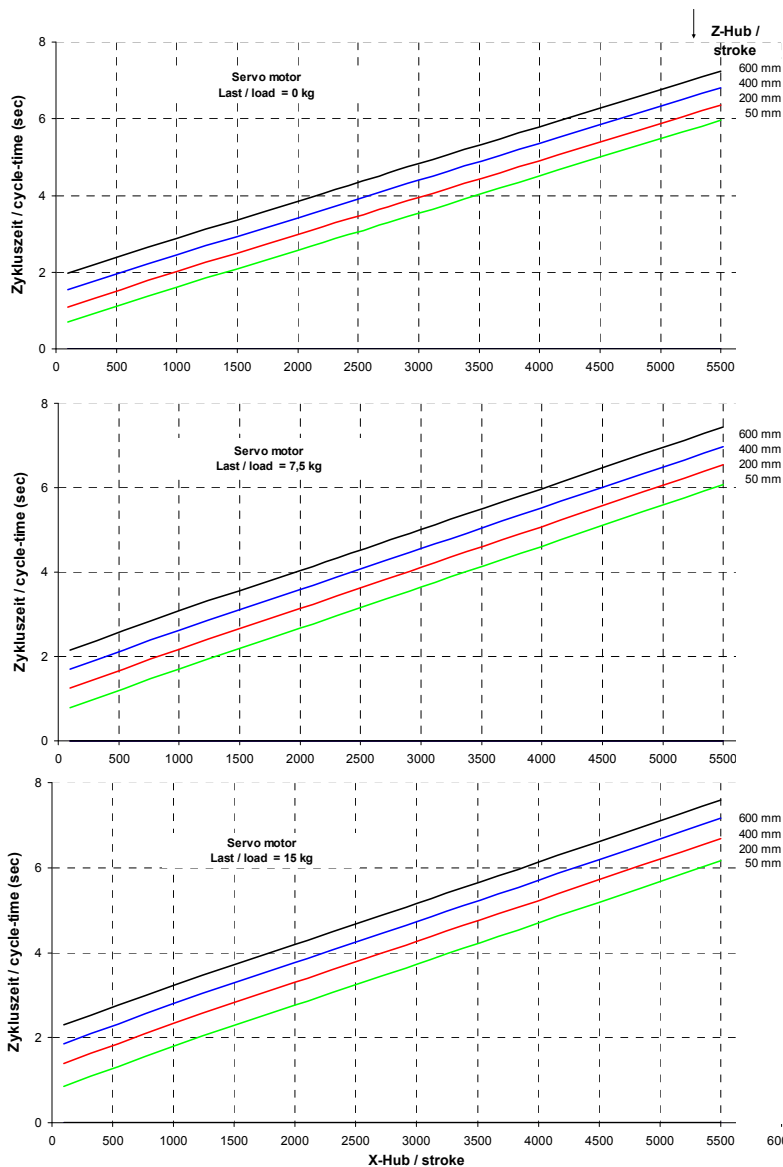
#### Cycle time determination:

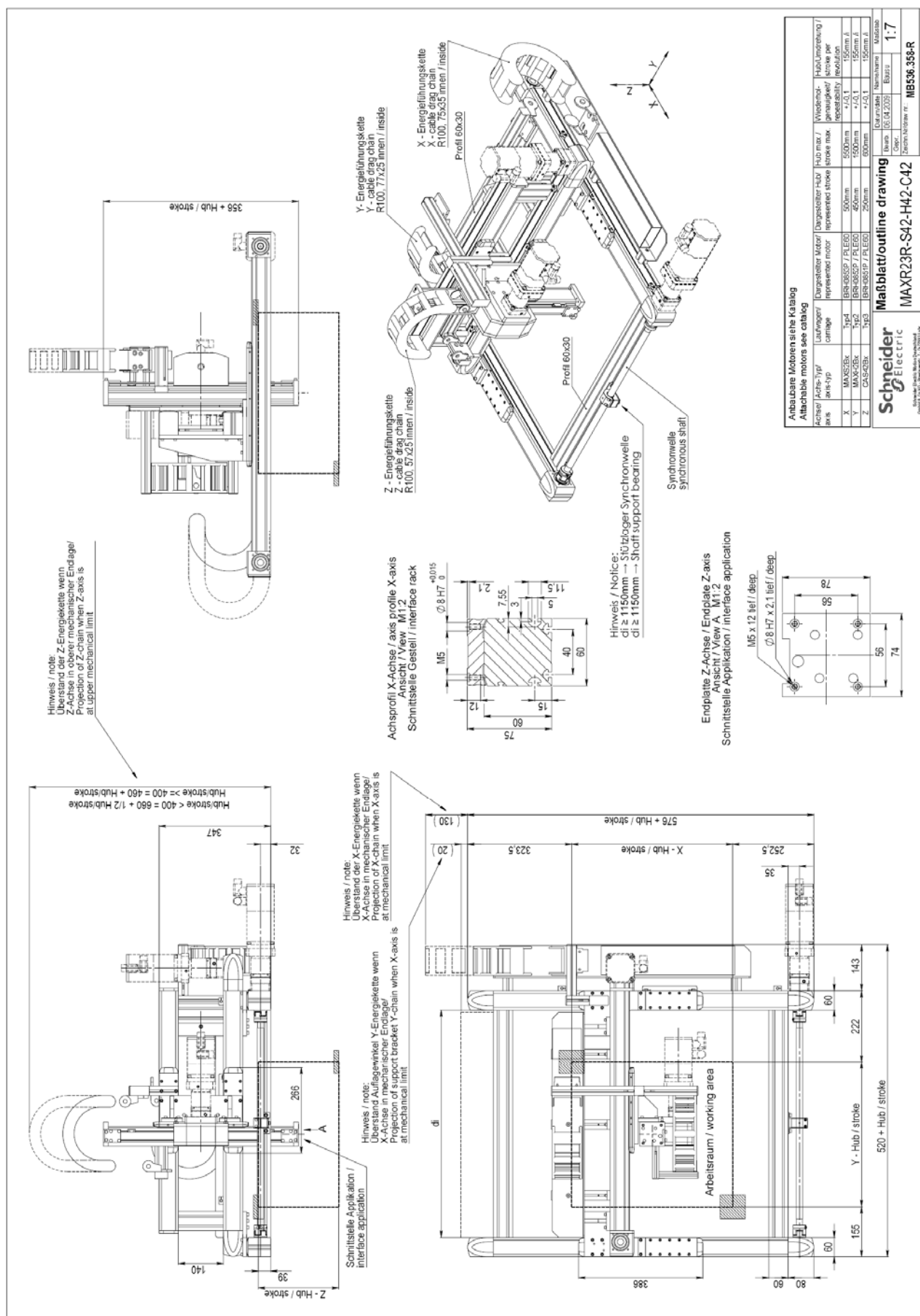
1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. Pick the Z-stroke (mm) in the array of curves.
4. The point of intersection shows the cycle time in seconds on the axis of ordinates.

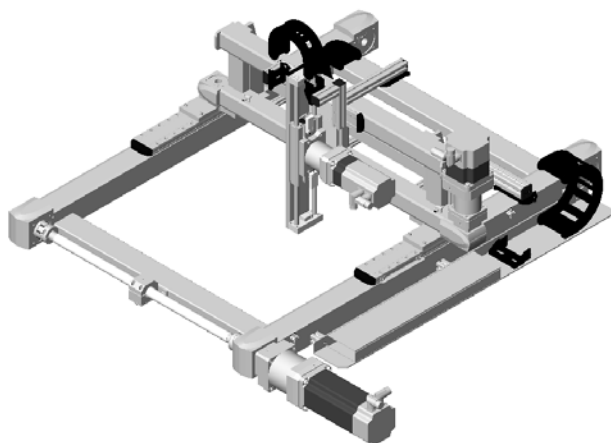
#### Cycle time definition:



Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH0853P	PLE60 / 5:1
Y-Axis	BRH0852P	PLE60 / 5:1
Z-Axis	BRH0851P	PLE60 / 5:1







### Three Axes Portal Robot

- Typ. payload  
with roller guide 14kg  
with ball guide 18kg
- Dynamic small payload portal robot for pick & place - tasks
- Huge working area
- Z-stroke till 500 mm

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXS3BR	Roller guide	5500	8	+/- 0,10	205	14
Y	MAXH3BR	Roller guide	1500	8	+/- 0,10	205	
Z	CAS34BC	Ball bearing	500	2	+/- 0,05	100	
X	MAXS3BB	Ball guide	5500	5	+/- 0,10	205	18
Y	MAXH3BB	Ball guide	1500	5	+/- 0,10	205	
Z	CAS34BC	Ball bearing	500	2	+/- 0,05	100	

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application measures.  
(Per example: payload and length of the synchronic shaft for X-stroke).

Greater stroke in X-Y and Z-direction on request.

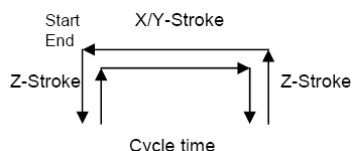
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.  
Based on the fact that with an X/Y positioning, the X axis has the biggest stroke and therefore the longest positioning time, X-stroke is put down on the horizontal diagram axis.

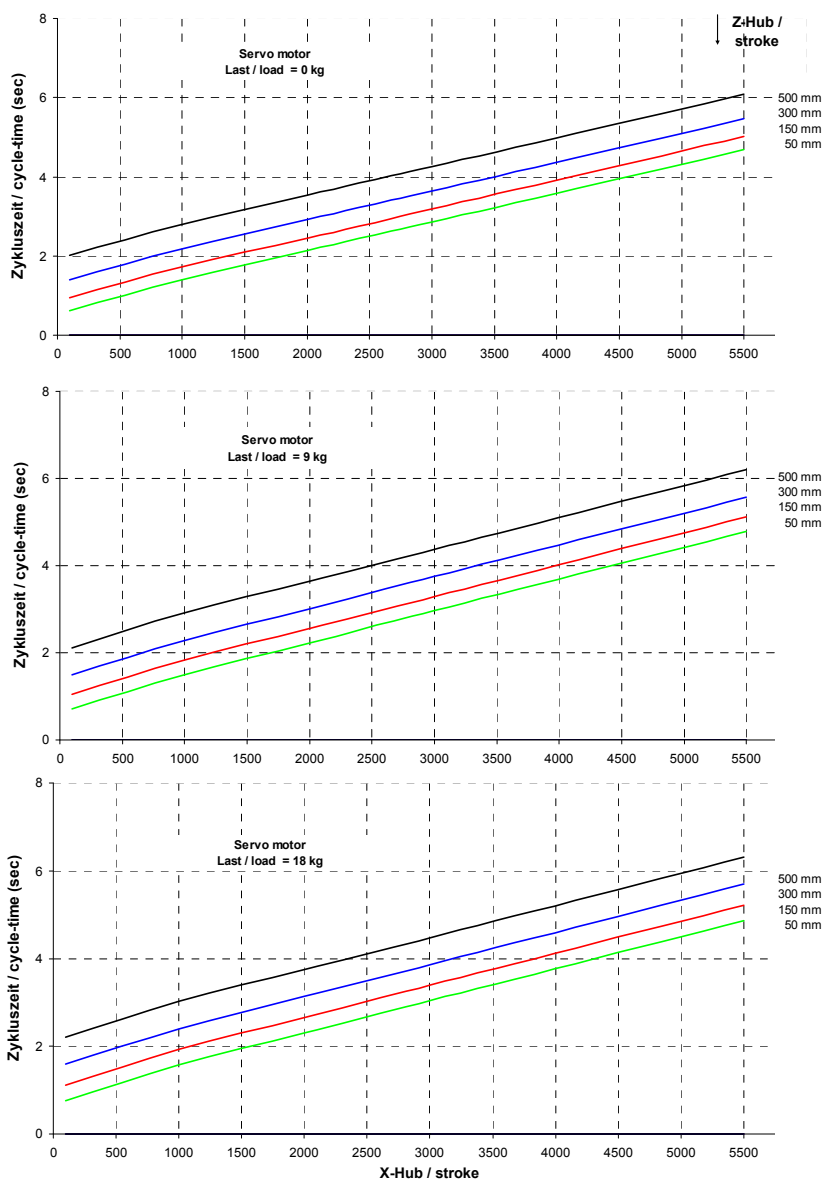
#### Cycle time determination:

1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. Pick the Z-stroke (mm) in the array of curves.
4. The point of intersection shows the cycle time in seconds on the axis of ordinates.

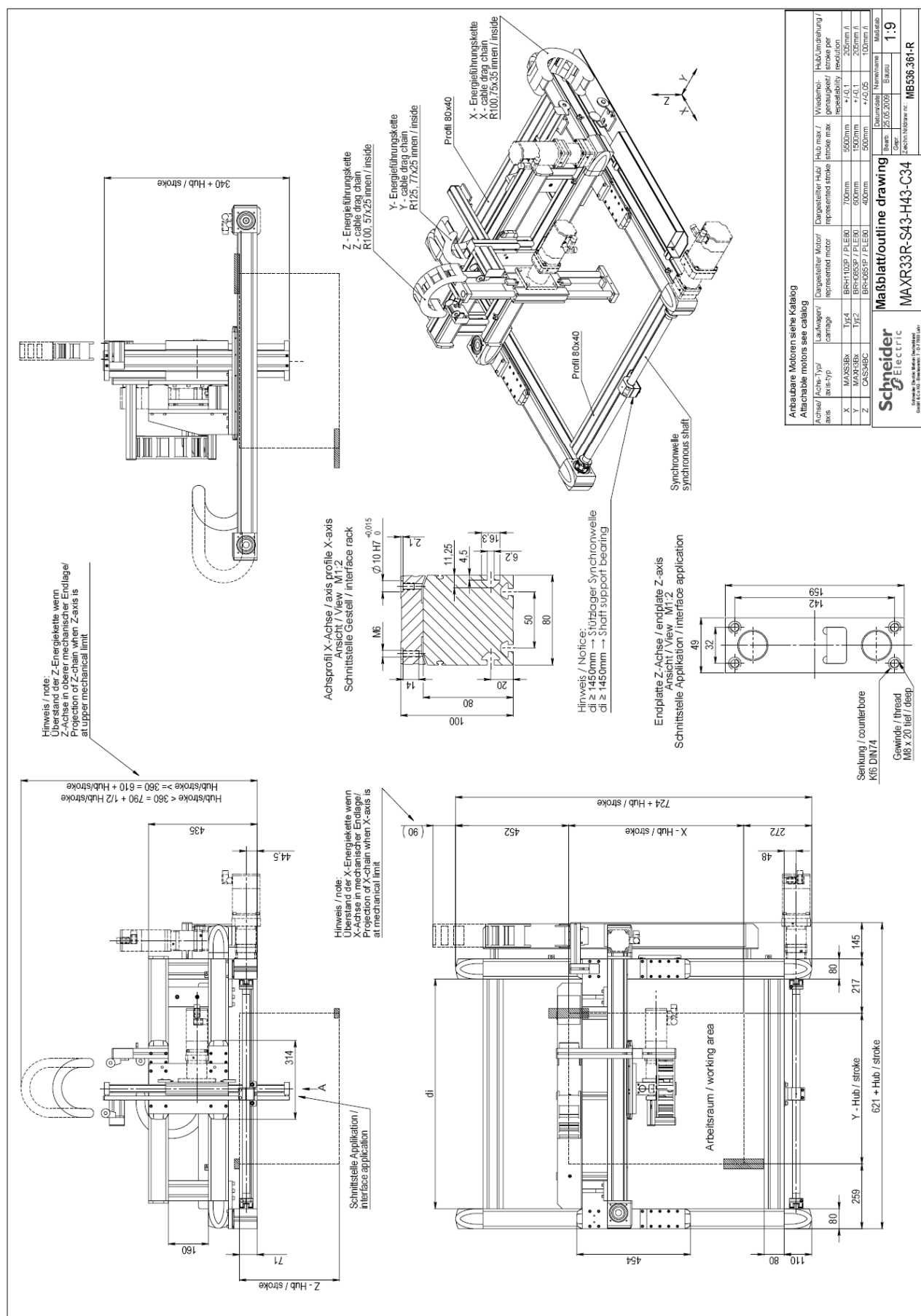
#### Cycle time definition:

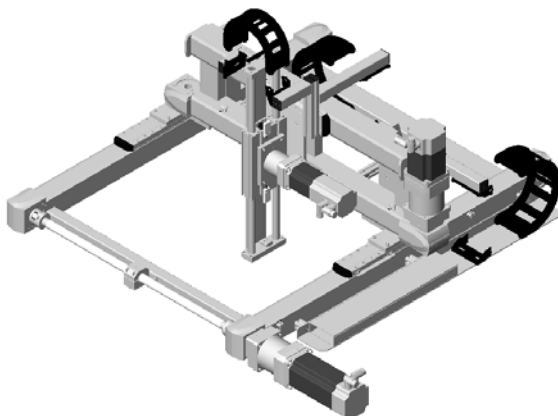


Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH1102P	PLE80 / 5:1
Y-Axis	BRH0853P	PLE80 / 5:1
Z-Axis	BRH0851P	PLE80 / 5:1









### Three Axes Portal Robot

- Typ. payload  
with roller guide 9kg  
with ball guide 25kg
- Dynamic medium payload portal robot
- Huge working area
- Z-stroke till 800 mm

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXS3BR	Roller guide	5500	8	+/- 0,10	205	9
Y	MAXH3BR	Roller guide	1500	8	+/- 0,10	205	
Z	CAS43BR	Roller guide	800	2	+/- 0,05	205	
X	MAXS3BB	Ball guide	5500	5	+/- 0,10	205	25
Y	MAXH3BB	Ball guide	1500	5	+/- 0,10	205	
Z	CAS43BB	Ball guide	800	2	+/- 0,05	205	

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application measures.  
(Per example: payload and length of the synchronic shaft for X-stroke).

Greater stroke in X-Y and Z-direction on request.

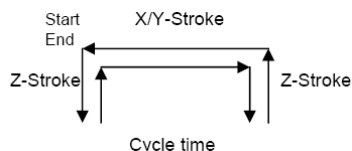
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.  
Based on the fact that with an X/Y positioning, the X axis has the biggest stroke and therefore the longest positioning time, X-stroke is put down on the horizontal diagram axis.

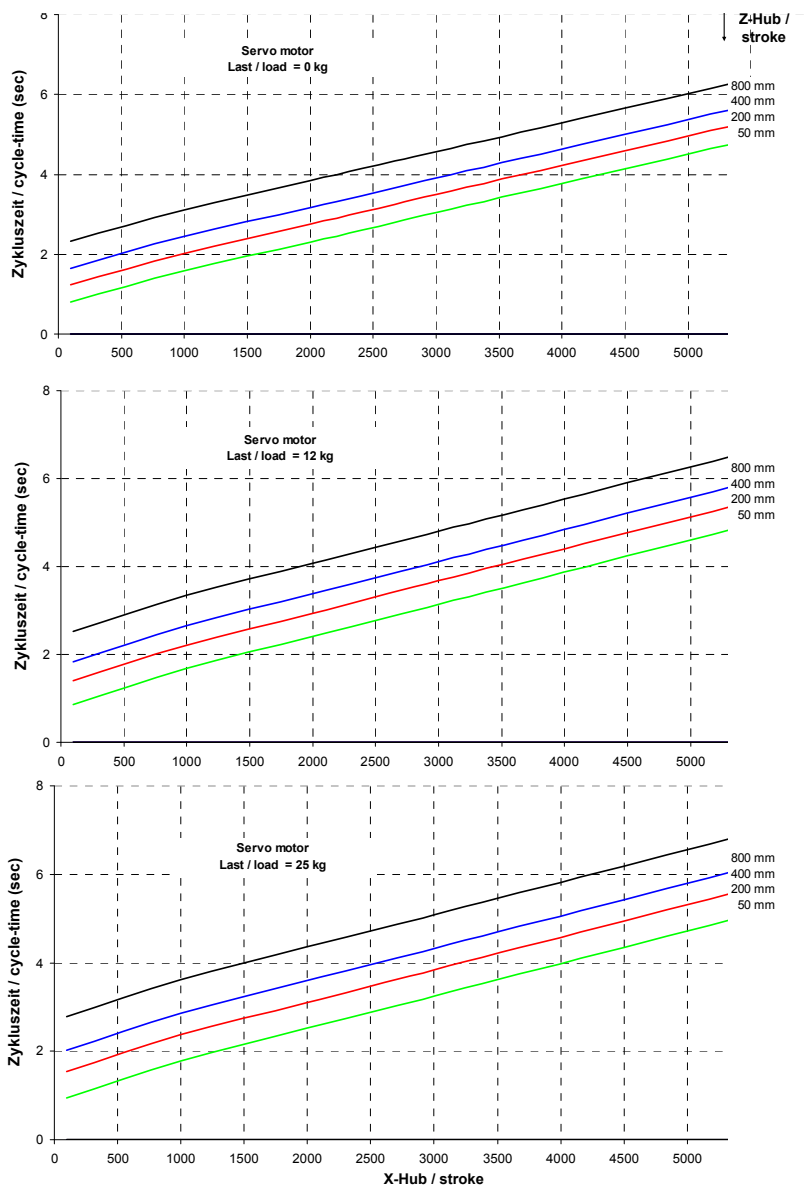
#### Cycle time determination:

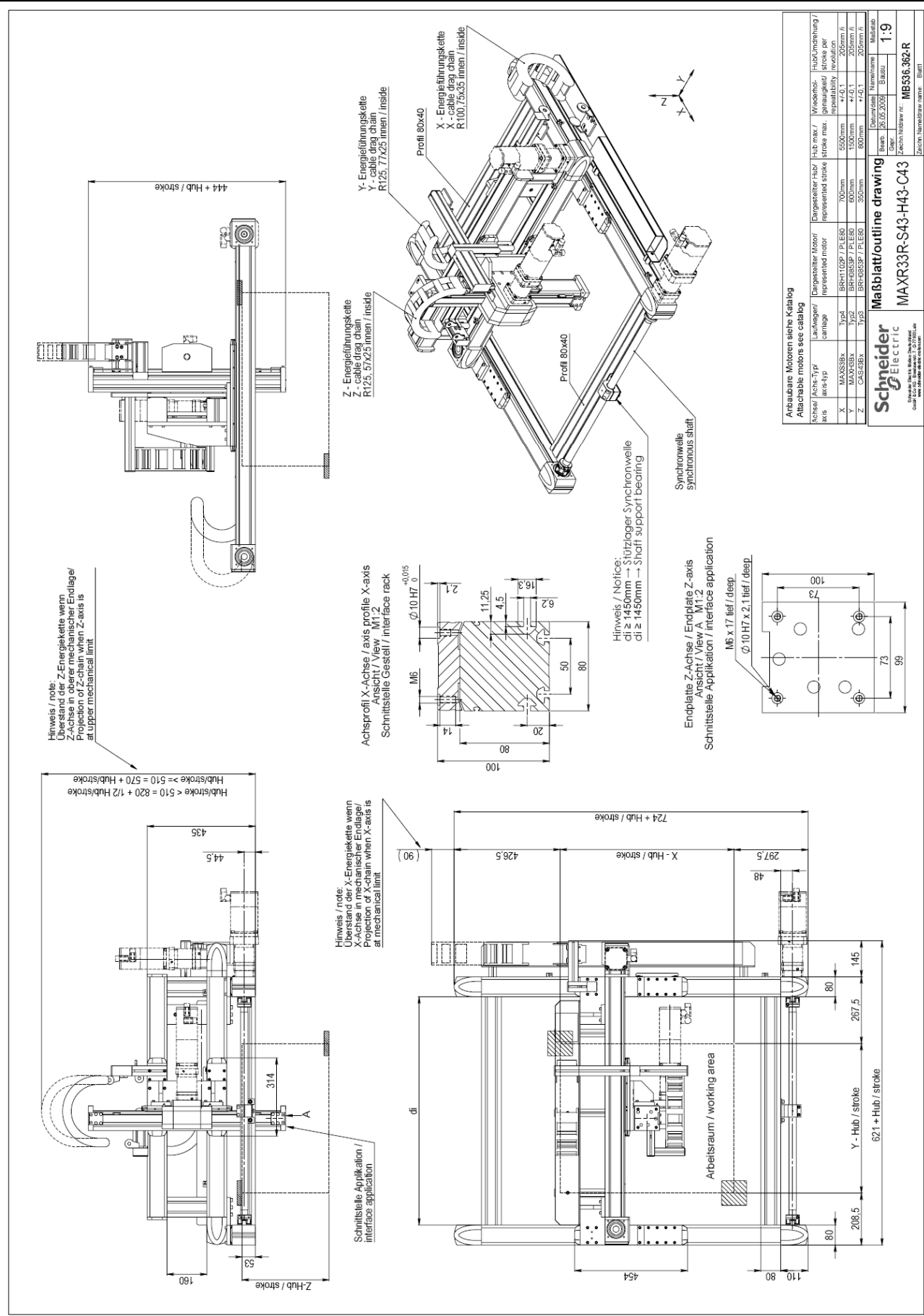
1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. Pick the Z-stroke (mm) in the array of curves.
4. The point of intersection shows the cycle time in seconds on the axis of ordinates.

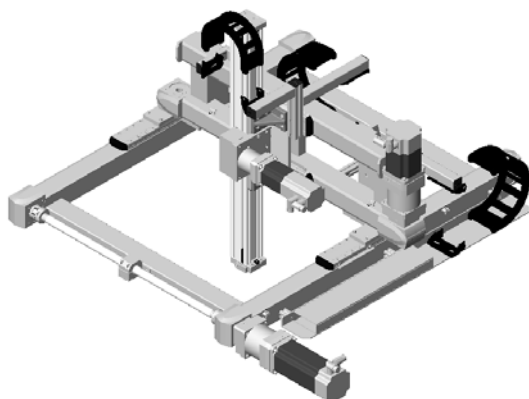
#### Cycle time definition:



Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH1102P	PLE80 / 5:1
Y-Axis	BRH0853P	PLE80 / 5:1
Z-Axis	BRH0853P	PLE80 / 5:1







### Three Axes Portal Robot

- Typ. payload 50kg
- with ball guide
- Dynamic medium payload portal robot
- Huge working area
- Z-stroke till 1200 mm

Axis direction	Basis axes	Guide type	max. stroke (mm)	max. speed (m/s) *	Repeat accuracy (mm) *	Drive constant (mm)	typ. Payload (kg)
X	MAXS4BB	Ball guide	5500	5	+/- 0,10	264	50
Y	MAXH4BB	Ball guide	1500	5	+/- 0,10	264	
Z	CAS44BB	Ball guide	1200	5	+/- 0,05	264	

#### \* Comments

The repeat accuracy and the maximum speed of the total system are depending on the application measures.  
(Per example: payload and length of the synchronic shaft for X-stroke).

Greater stroke in X-Y and Z-direction on request.

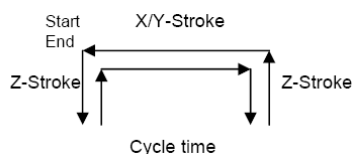
#### Cycle time diagram:

The shown diagram gives approximately the reachable cycle time depending on stroke and payload.  
Based on the fact that with an X/Y positioning, the X axis has the biggest stroke and therefore the longest positioning time, X-stroke is put down on the horizontal diagram axis.

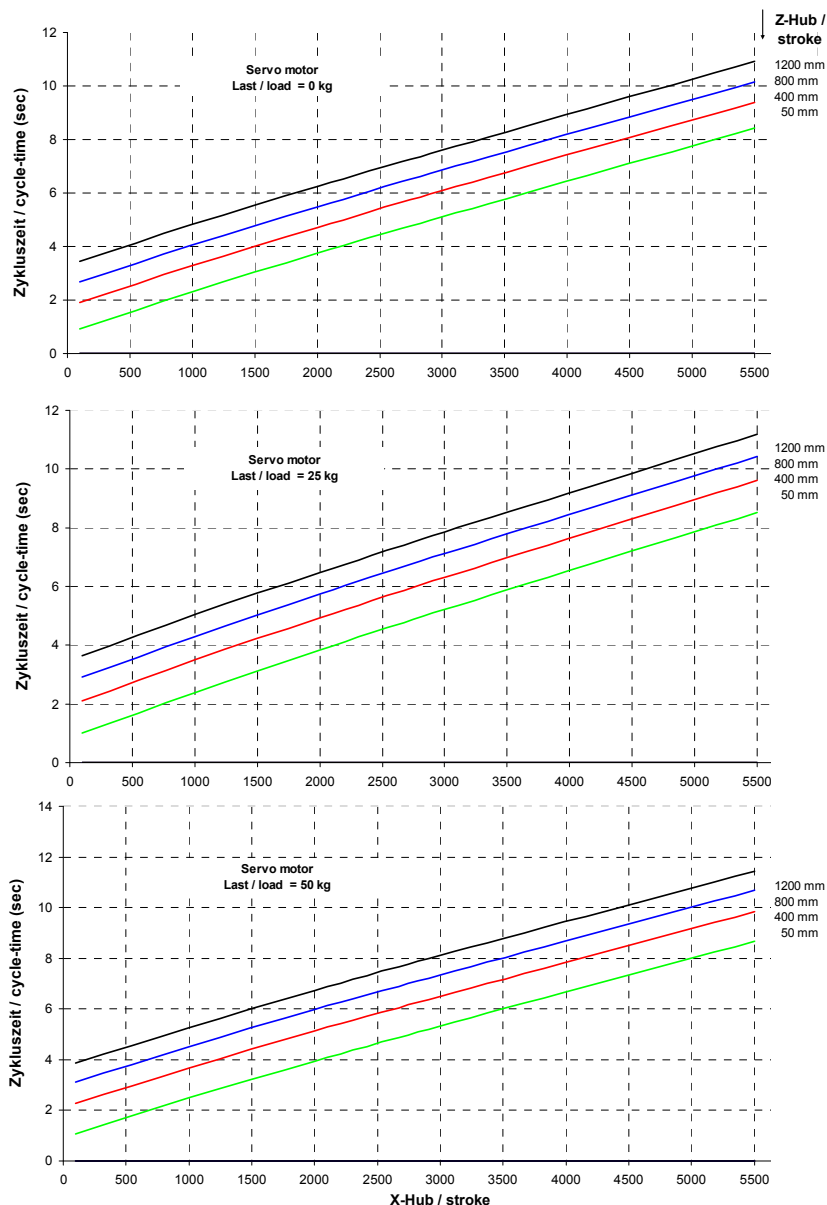
#### Cycle time determination:

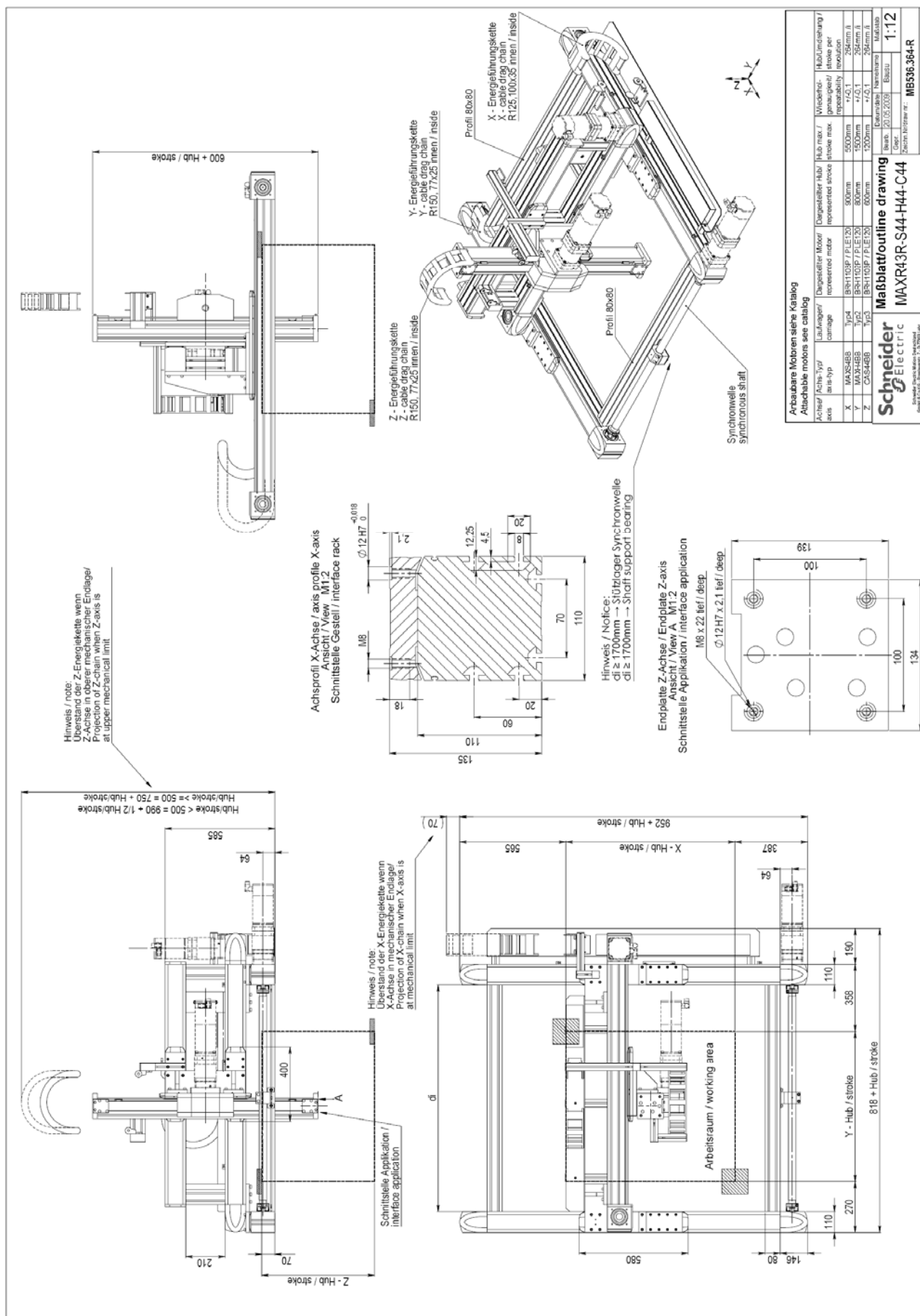
1. Choose the right diagram according to the payload.
2. Select the X-stroke (mm) in the axis of abscissas.
3. Pick the Z-stroke (mm) in the array of curves.
4. The point of intersection shows the cycle time in seconds on the axis of ordinates.

#### Cycle time definition:



Motor base for diagrams		
Axis direction	Servo motors	Gearboxes
X-Axis	BRH1103P	PLE120 / 8:1
Y-Axis	BRH1102P	PLE120 / 8:1
Z-Axis	BRH1103P	PLE120 / 5:1





## References (1)

To order a Lexium MAX R●2 portal robot, complete each reference by replacing the “●” as required (3):

**Example: MAX R 1 2 R – S41 B R 3000 – H41 B R 1200 (3)**

MAX R • 2 • - ••• B • •••• - ••• B • ••••

[illegible]

(1) All the technical data for Lexium MAX R●2 portal robots is available on the documentation CD-ROM supplied with this catalogue.

(2) Each axis is supplied with 2 PNP output sensors, NC contact, with a 100 mm cable equipped with an M8 connector.

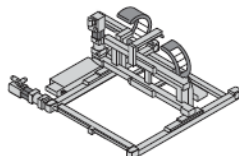
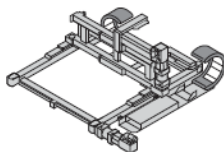
(3) Since the combination of drive elements is specific to each application, you will need to contact your Customer Care Centre.

(4) The maximum length depends on the profile cross-section. Please refer to the characteristics table on page 61511/3.

(5) Interface types for the drive element:

MAX R•2R – ...

MAX R●2L - ...



## References (1)

To order a Lexium MAX R●3 portal robot, complete each reference by replacing the “●” as required (3):

Example: MAX R 13 R – S41 B R 3000 – H41 B R 1200 – C31 B C 1200    MAX R • 3 • – ••• B • •••• – ••• B • •••• – ••• B • ••••

[illegible]

(1) All the technical data for Lexium MAX R●3 portal robots is available on the documentation CD-ROM supplied with this catalogue.

(2) Each axis is supplied with 2 PNP output sensors, NC contact, with a 100 mm cable equipped with an M8 connector.

(3) Since the combination of drive elements is specific to each application, you will need to contact your Customer Care Centre.

(4) The maximum length depends on the profile cross-section. Please refer to the characteristics table on page 61511/3.

(5) Interface types for the drive element:

MAX R•3R – ...

MAX R•3L - ...

