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**ELA -
Electromechanical
Linear Actuator**

Electromechanical Linear Actuators ELA

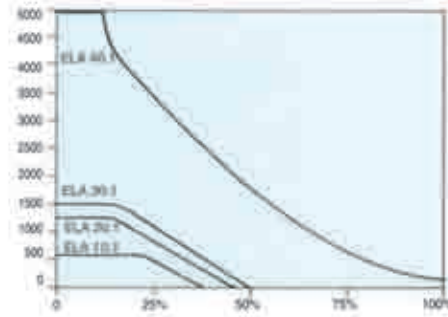
Electromechanical Linear Actuators (ELA) consist of trapezoidal or ball screws driven by an electric motor through worm gearing completely enclosed by an aluminium housing.

It is possible to install ELA's in any position and the thrust and guide mechanism is designed for both compressive and tensile loading. Other distinguishing features include robust construction and reliability giving ELA's a wide range of applications.

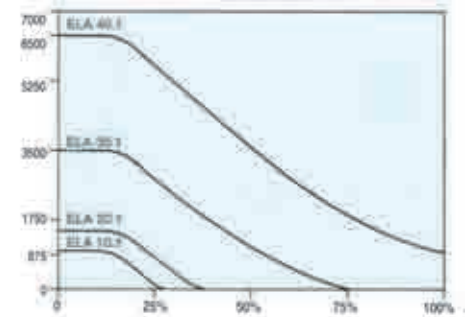


Duty cycle diagrams, ELA with trapezoidal spindle with three-phase motor:

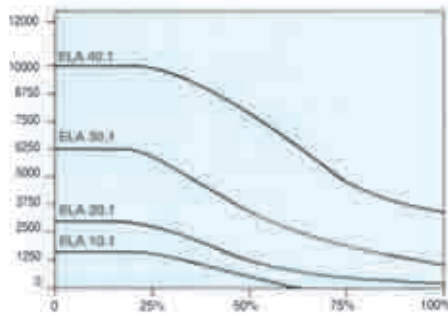
Reduction ratio H Fdyn (N)/duty ratio in % referring to 10 minutes



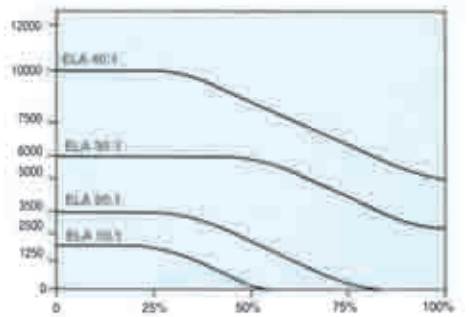
Reduction ratio V Fdyn (N)/duty ratio in % referring to 10 minutes



Reduction ratio N Fdyn (N)/duty ratio in % referring to 10 minutes



Reduction ratio L Fdyn (N)/duty ratio in % referring to 10 minutes



Selection table, series ELA, trapezoidal spindle Tr:

Trapezoidal spindle	Three-phase motor				A.C. motor				D.C. motor				
	10.1	20.1	30.1	40.1	10.1	20.1	30.1	40.1	10.1	20.1	30.1	40.1	
Size													
Max. axial force	F stat [N]	2500	4500	8000	13000	2500	4500	8000	13000	2500	4500	8000	13000
Spindle		12x3	16x4	22x5	22x5	12x3	16x4	22x5	22x5	12x3	16x4	22x5	22x5
Approx. weight	[kg]	6	10	15	20	6	10	15	20	6	10	15	20
Ratio H		4:1	4:1	2,78:1	6,75:1	4:1	4:1	2,78:1	6,75:1	4:1	4:1	2,78:1	6,75:1
Max. tension/compr. force	F [N] dyn.	550	1250	1500	5000	550	1200	1100	3500	700	1200	1100	3500
Lifting speed	v [mm/sec]	35	46,6	84	34,5	35	46,6	84	34,5	35	46,6	84	34,5
Motor power	P [Watt]	90	120	250 ¹⁾	550	90	120	250 ¹⁾	550	70	150	300 ¹⁾	500
Ratio V		6,5:1	6,5:1	5:1	10:1	6,5:1	6,5:1	5:1	10:1	6,5:1	6,5:1	5:1	10:1
Max. tension/compr. force	F [N] dyn.	900	1650	3500	6500	900	1600	2500	5300	1100	1600	2500	5300
Lifting speed	v [mm/sec]	22	31	46,6	23,3	22	31	46,6	23,3	22	31	46,6	23,3
Motor power	P [Watt]	90	120	250	550	90	120	250	550	70	150	300	500
Ratio N		15:1	15:1	10:1	20:1	15:1	15:1	10:1	20:1	15:1	15:1	10:1	20:1
Max. tension/compr. force	F [N] dyn.	1600	2750	6000	10000	1600	2300	4500	8500	1350	2300	4500	8500
Lifting speed	v [mm/sec]	9	13	23,3	11,5	9	13	23,3	11,5	10	13	23,3	11,5
Motor power	P [Watt]	90	120	250	550	90	120	250	550	70	150	300	500
Ratio L		25:1	25:1	20:1	25:1	25:1	25:1	20:1	25:1	25:1	25:1	20:1	25:1
Max. tension/compr. force	F [N] dyn.	2000	3500	6000	10000	2000	3500	6000	10000	2000	3500	6000	10000
Lifting speed	v [mm/sec]	5,5	7,5	11,7	9	5,5	7,5	11,7	9	5,5	7,5	11,7	9
Motor power	P [Watt]	90	120	250	550	90	120	250	550	70	150	300	500

¹⁾ Braking motor



Standard stroke lengths:

- Size 10.1: 100, 200, 300, 400 mm
- Size 20.1: 200, 400, 600 mm
- Size 30.1, 40.1: 200, 400, 600, 800 mm
- Special stroke lengths on request
- Comprehensive accessories (see dimension diagrams)

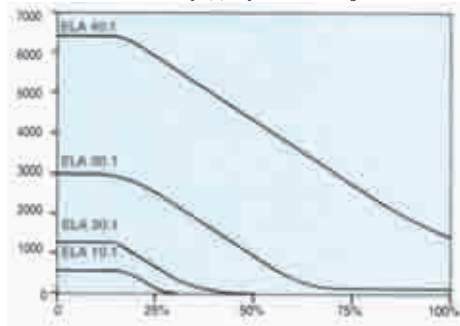
The standard models have the following design features:

- Maximum dynamic axial loads from 55 to 1,300 kg
- Lifting speeds from 6 mm/s to 84 mm/s (depending on load and duty ratio)
- Drive motors with IEC flange (B14), protection type IP 54, three-phase, alternating or direct current.
- With brake (optional)
- Self-locking via trapezoidal spindles
- Worm gear with various reduction ratios
- Lifetime lubrication by using high quality grease and an enclosed design.

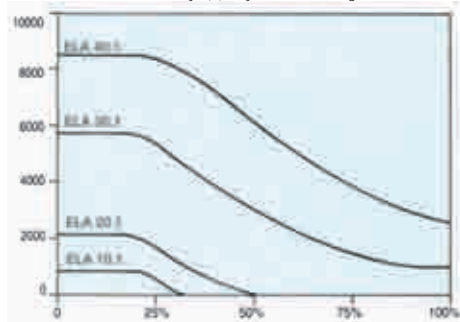


Duty cycle diagrams, ELA with ball screw with three-phase motor:

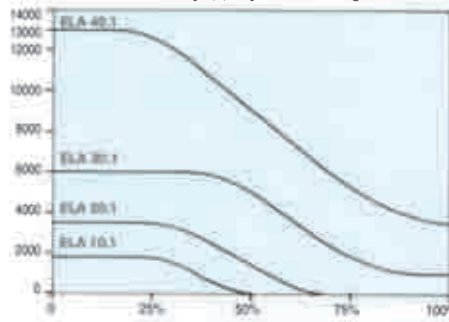
Reduction ratio H Fdyn (N)/duty ratio in % referring to 10 minutes



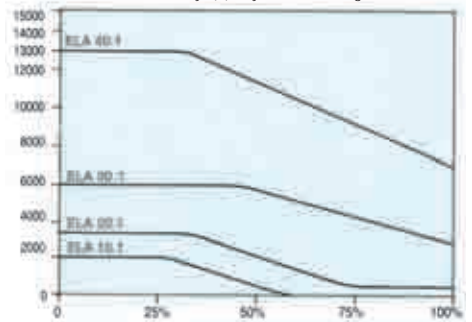
Reduction ratio V Fdyn (N)/duty ratio in % referring to 10 minutes



Reduction ratio N Fdyn (N)/duty ratio in % referring to 10 minutes



Reduction ratio L Fdyn (N)/duty ratio in % referring to 10 minutes



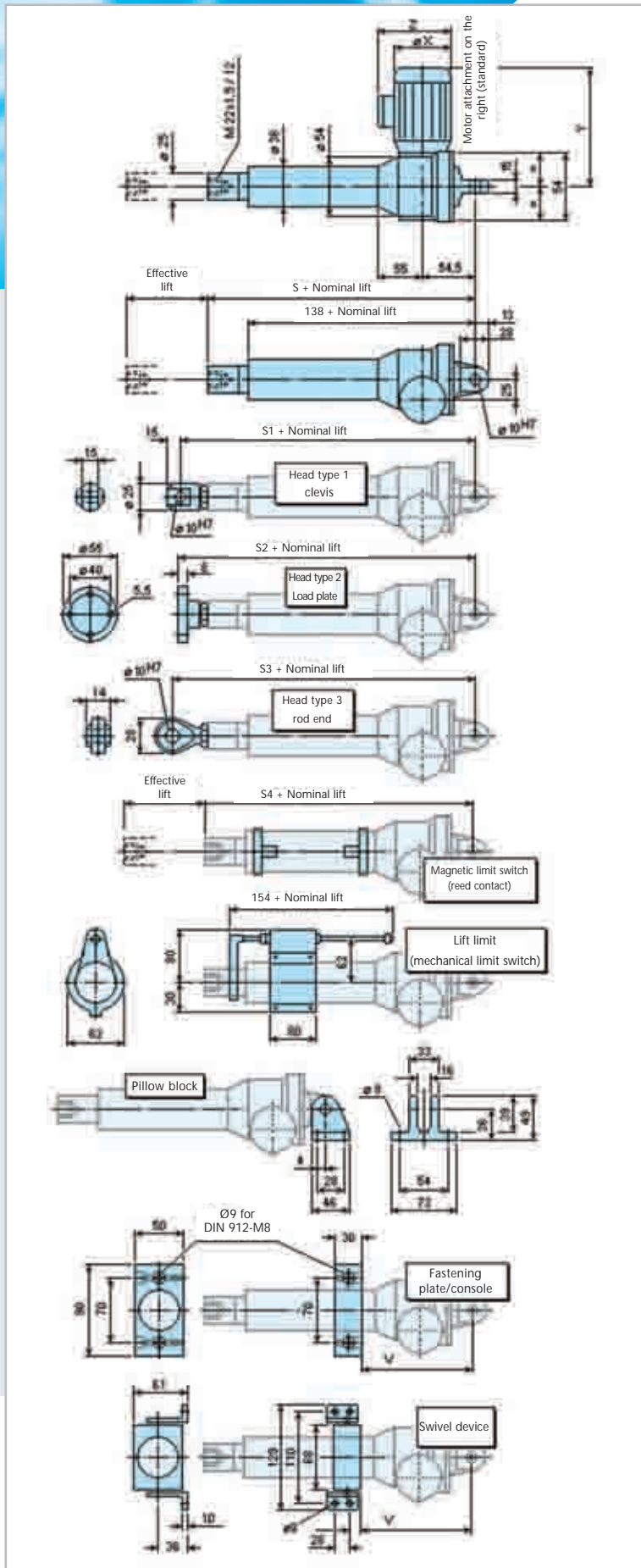
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Selection table, series ELA, ball-screw spindle Ku:

Ball-screw spindle	Three-phase motor				A.C. motor				D.C. motor				
	10.1	20.1	30.1	40.1	10.1	20.1	30.1	40.1	10.1	20.1	30.1	40.1	
Size	10.1	20.1	30.1	40.1	10.1	20.1	30.1	40.1	10.1	20.1	30.1	40.1	
Max. axial force	F stat [N]	2500	4500	8000	13000	2500	4500	8000	13000	2500	4500	8000	13000
Spindle		12x5	16x5	20x5	25x6	12x5	16x5	20x5	25x6	12x5	16x5	20x5	25x6
Approx. weight	[kg]	6	10	15	20	6	10	15	20	6	10	15	20
Ratio H		4:1	4:1	2,78:1	6,75:1	4:1	4:1	2,78:1	6,75:1	4:1	4:1	2,78:1	6,75:1
Max. tension/compr. force	F [N] dyn.	600	1350	3000	6550	700	1250	2200	5500	750	1250	2200	5500
Lifting speed	v [mm/sec]	59	58	84	42	59	58	84	42	59	58	84	42
Motor power	P [Watt]	90 ¹⁾	120 ¹⁾	250 ¹⁾	550 ¹⁾	90 ¹⁾	120 ¹⁾	250 ¹⁾	550 ¹⁾	90 ¹⁾	150 ¹⁾	300 ¹⁾	500 ¹⁾
Ratio V		6,5:1	6,5:1	5:1	10:1	6,5:1	6,5:1	5:1	10:1	6,5:1	6,5:1	5:1	10:1
Max. tension/compr. force	F [N] dyn.	950	2150	5800	8500	1000	2000	4200	7500	1150	2000	4200	7500
Lifting speed	v [mm/sec]	36	37	47	28	36	37	47	28	38	37	47	28
Motor power	P [Watt]	90 ¹⁾	120 ¹⁾	250 ¹⁾	550 ¹⁾	90 ¹⁾	120 ¹⁾	250 ¹⁾	550 ¹⁾	70 ¹⁾	150 ¹⁾	300 ¹⁾	500 ¹⁾
Ratio N		15:1	15:1	10:1	20:1	15:1	15:1	10:1	20:1	15:1	15:1	10:1	20:1
Max. tension/compr. force	F [N] dyn.	1900	3500	6000	13000	2000	3500	4500	13000	1500	3500	4500	13000
Lifting speed	v [mm/sec]	16	15,6	23,3	14	16	15,6	23,3	14	15	15,6	23,3	14
Motor power	P [Watt]	90 ¹⁾	120 ¹⁾	250 ¹⁾	550 ¹⁾	90 ¹⁾	120 ¹⁾	250 ¹⁾	550 ¹⁾	70 ¹⁾	150 ¹⁾	300 ¹⁾	500 ¹⁾
Ratio L		25:1	25:1	20:1	25:1	25:1	25:1	20:1	25:1	25:1	25:1	20:1	25:1
Max. tension/compr. force	F [N] dyn.	2500	3500	6000	13000	2500	3500	6000	13000	2500	3500	6000	13000
Lifting speed	v [mm/sec]	9	9	11,7	11	9	9	11,7	11	9	9	11,7	11
Motor power	P [Watt]	90 ¹⁾	120 ¹⁾	250 ¹⁾	550 ¹⁾	90 ¹⁾	120 ¹⁾	250 ¹⁾	550 ¹⁾	70 ¹⁾	150 ¹⁾	300 ¹⁾	500 ¹⁾

¹⁾ Braking motor

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Dimensions ELA 10.1:

	Tr spindle	Ku spindle
Size	12x3	12x5
S	169	184
S 1	203	218
S 2	196	211
S 3	200	215
S 4	196	217

Nominal stroke	Effective stroke	
for mechanical limit switch		
100	100	85
200	200	185
300	300	285
400	400	385

Nominal stroke	Effective stroke	
with magnetic limit switch (reed contact)		
100	73	53
200	173	153
300	273	253
400	373	353

	Mechanical limit switch	Magnetic limit switch (reed contact)
V	110	142

Three-phase motor 400 VAC, 90 W		
X	110	110
Y	195	-
Y (with brake)	220	220
Z	155	155

A.C. motor 230 V~, 90 W		
X	110	110
Y	195	-
Y (with brake)	220	220
Z	155	155

D.C. motor 24 VDC, 70 W		
X	60	60
Y	164	-
Y (with brake)	210	210
Z	80	80

Available for delivery upon request:

- Head Type 1, 2 or 3
- Mechanical limit switch, connecting cable 4 x 0.5 mm², 1 m length, 2 x NC contact
- Magnetic limit switch (reed contact), connecting cables, each 2 x 0.5 mm², 2 m length, NC contact
- Pillow block
- Fastening plate/console
- Swivel device
- Motor attachment on the left
- Housing eye rotatable through 90°
- Anti-turn device is not available
- Second shaft end on the gear is not available

Only the most recent dimensional drawings are valid.

Dimensions ELA 20.1:

	Tr spindle	Ku spindle
Size	16x4	16x5
S	190	211
S 1	215	236
S 2	210	231
S 3	230	251
S 4	230	236

Nominal stroke	Effective stroke	
for mechanical limit switch		
200	200	184
400	400	384
600	600	584

Nominal stroke	Effective stroke	
with magnetic switch (reed contact)		
200	190	180
400	390	380
600	590	580

Installation dimension of add-on items for	A	B	C
mechanical limit switch	175	171	192
magnetic limit switch (reed contact)	259	255	277

Three-phase motor 400 VAC, 120 W		
X	110	110
Y	213	-
Y (with brake)	257	257
Z	163	163

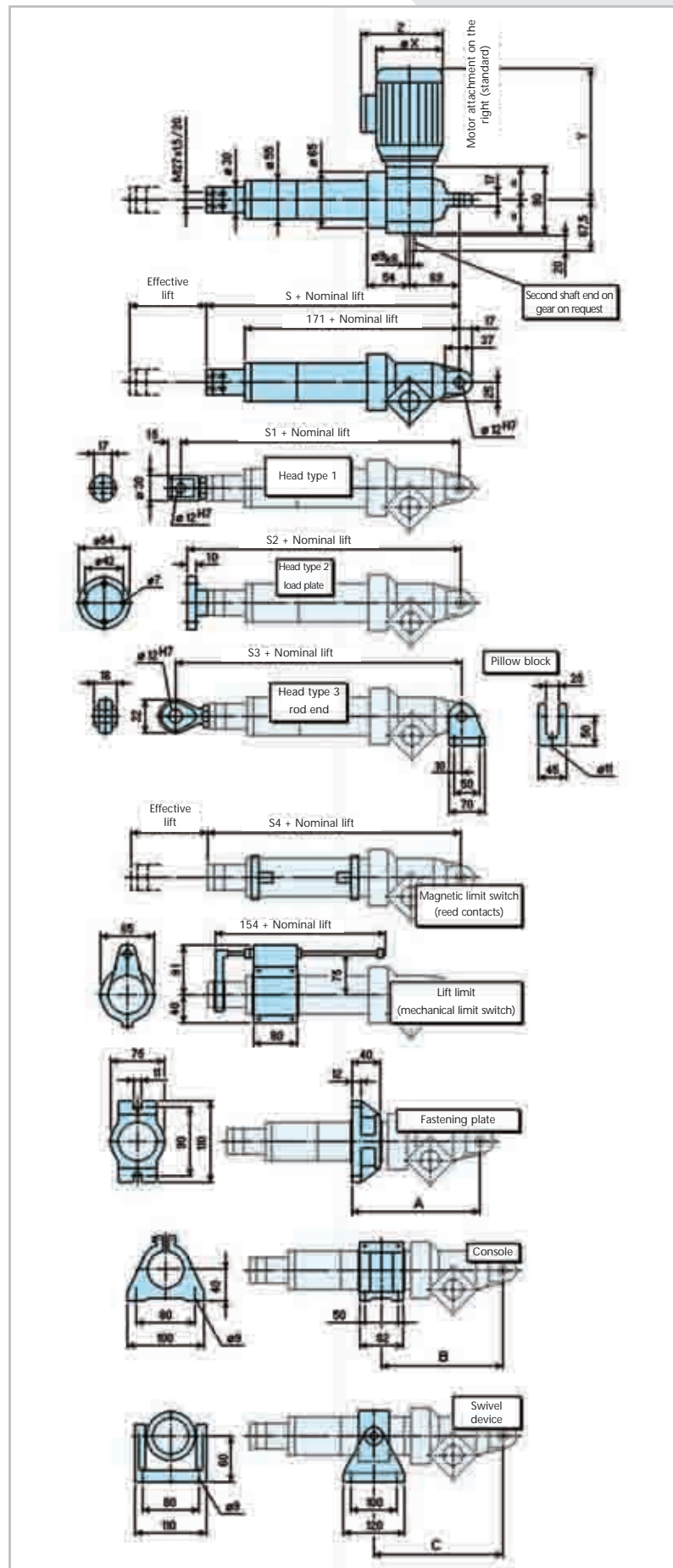
A.C. motor 230 V~, 120 W		
X	110	110
Y	213	-
Y (with brake)	257	257
Z	163	163

D.C. motor 24 VDC, 150 W		
X	85	85
Y	180	-
Y (with brake)	210	210
Z	121	121

Available for delivery upon request:

- Head Type 1, 2 or 3
- Mechanical limit switch, connecting cable 4 x 0.5 mm², 1 m length, 2 x NC contact
- Magnetic limit switch (reed contact), connecting cables, each 2 x 0.5 mm², 2 m length, NC contact
- Pillow block
- Fastening plate
- Console
- Swivel device
- Motor attachment on the left
- Housing eye rotatable through 90°
- Anti-turn device
- Second shaft end on the gear

Only the most recent dimensional drawings are valid.



Electromechanical Linear Actuator

Dimensions ELA 30.1:

	Tr spindle	Ku spindle
Size	22x5	20x5
S	220	230
S 1	245	255
S 2	240	250
S 3	265	275
S 4	230	240

Nominal stroke	Effective stroke	
for mechanical limit switch		
200	200	190
400	400	390
600	600	590
800	800	790

Nominal stroke	Effective stroke	
with magnetic limit switch (reed contact)		
200	180	170
400	380	370
600	580	570
800	780	770

Installation dimension of add-on items for	A	B	C
mechanical limit switch	197	193	214
magnetic limit switch (reed contact)	281	277	299

Three-phase motor 400 VAC, 250 W		
X	126	126
Y	246	-
Y (with brake)	295	295
Z	172	172

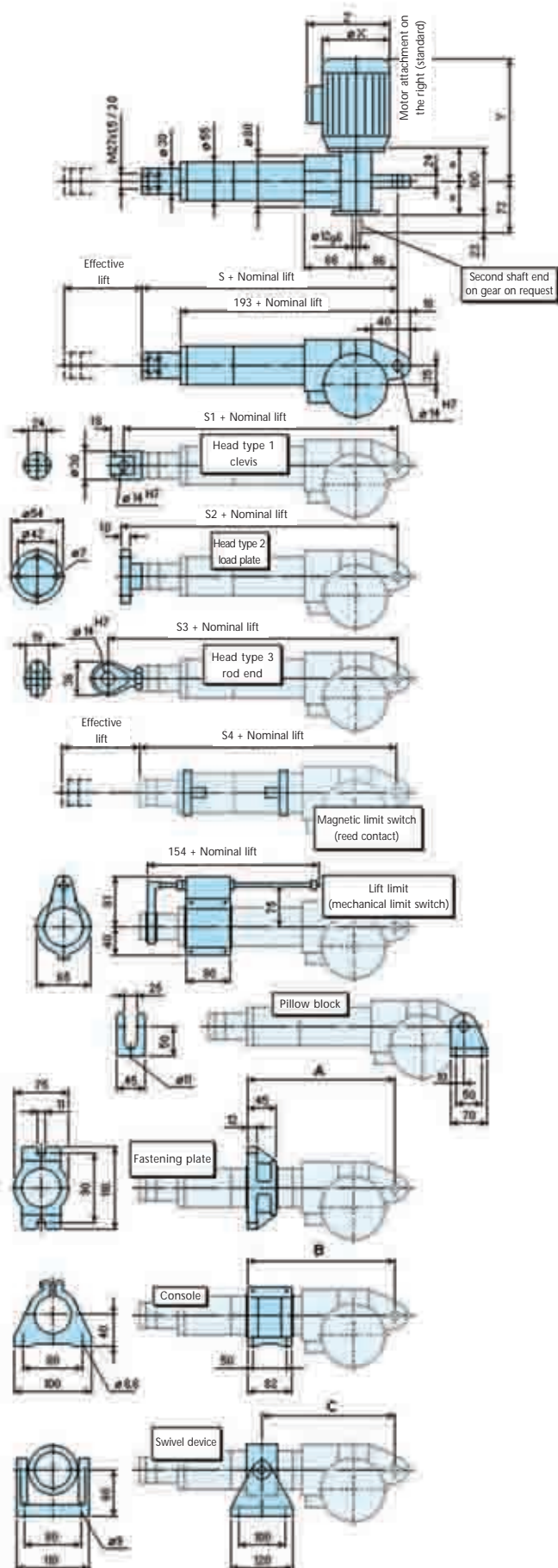
A.C. motor 230 V~, 250 W		
X	126	126
Y	242	-
Y (with brake)	301	301
Z	172	172

D.C. motor 24 VDC, 300 W		
X	85	85
Y	290	-
Y (with brake)	331	331
Z	121	121

Available for delivery upon request:

- Head 1, 2 or 3
- Mechanical limit switch, connecting cable 4 x 0.5 mm², 1 m length, 2 x NC contact
- Magnetic limit switch (reed contact), connecting cables, each 2 x 0.5 mm², 2 m length, NC contact
- Pillow block
- Fastening plate
- Console
- Swivel device
- Motor attachment on the left
- Housing eye rotatable through 90°
- Anti-turn device
- Second shaft end on the gear

Only the most recent dimensional drawings are valid.



Dimensions ELA 40.1:

	Tr spindle	Ku spindle
Size	22x5	25x6
S	275	280
S 1	305	310
S 2	297	302
S 3	328	333
S 4	310	310

Nominal stroke	Effective stroke	
for mechanical limit switch		
200	200	190
400	400	390
600	600	590
800	800	790

Nominal stroke	Effective stroke	
with magnetic limit switch (reed contact)		
200	190	190
400	390	390
600	590	590
800	790	790

Three-phase motor 400 VAC, 550 W		
X	140	140
Y	287	-
Y (with brake)	339	339
Z	191	191

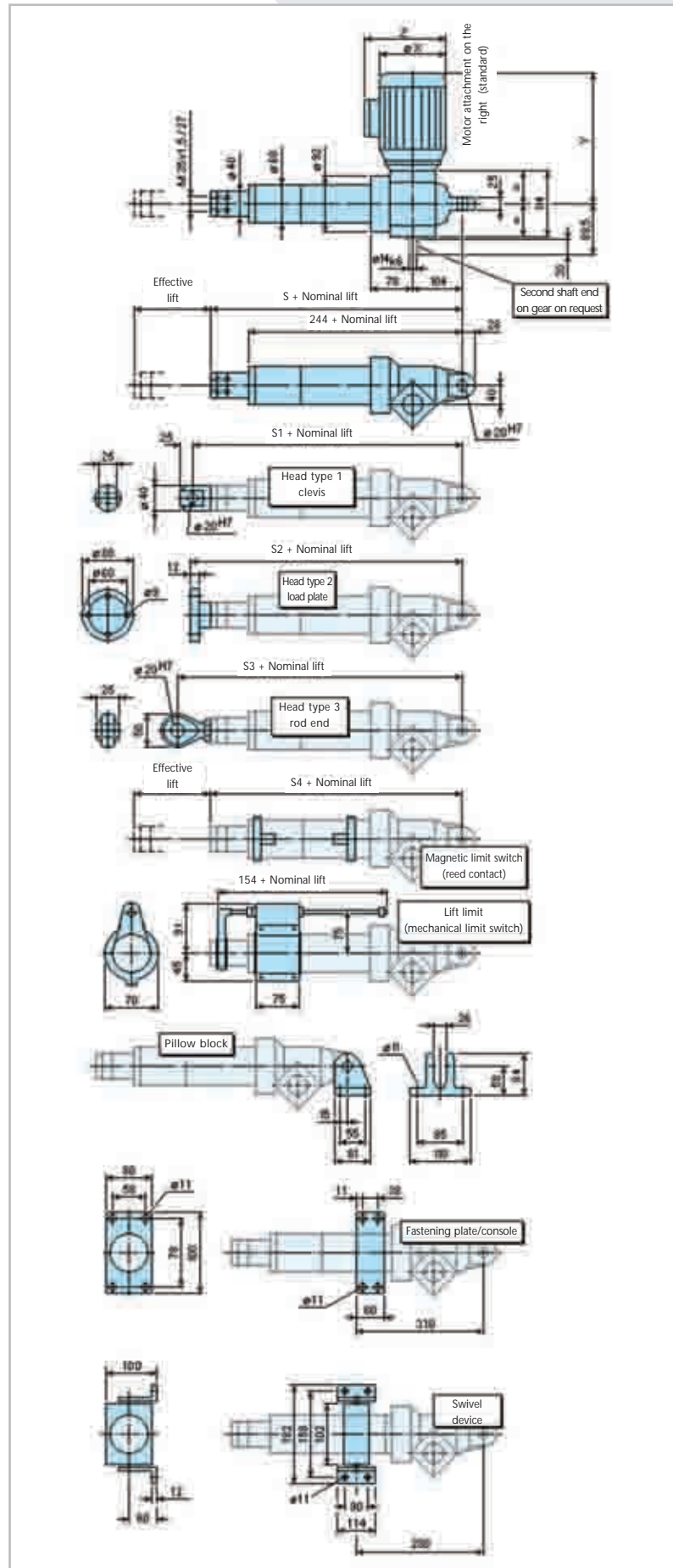
A.C. motor 230 V-, 550 W		
X	140	140
Y	287	-
Y (with brake)	339	339
Z	191	191

D.C. motor 24 VDC, 500 W		
X	85	85
Y	395	-
Y (with brake)	435	435
Z	121	121

Available for delivery upon request:

- Head 1, 2 or 3
- Mechanical limit switch, connecting cable 4 x 0.5 mm², 1 m length, 2 x NC contact
- Magnetic lift limit switch (reed contact), connecting cables, each 2 x 0.5 mm², 2 m length, NC contact
- Pillow block
- Fastening plate/console
- Swivel device
- Motor attachment on the left
- Housing eye rotatable through 90°
- Anti-turn device
- Second shaft end on the gear

Only the most recent dimensional drawings are valid.





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United Kingdom

Pfaff-silberblau Ltd.
Prenton Way
North Cheshire Trading Estate
Prenton Wirral CH43 3DU
United Kingdom
Phone +44-(0)151-6 09 00 99
Fax +44-(0)151-6 09 08 52
actuator@pfaff-silberblau.co.uk

The Netherlands

Elsto Aandrijftechniek B.V.
Loosterweg 7
2215 TL Voorhout
Netherlands
Phone +31-(0)252-21 91 23
Fax +31-(0)252-23 16 60
info@elsto.nl

Austria

Pfaff-silberblau
Winden und Hebezeuge Ges.m.b.H.
Aumühlweg 21/1/B 121
2544 Leobersdorf
Austria
Phone +43-(0)2256-8 15 15
Fax +43-(0)2256-8 15 80
office@pfaff-silberblau.at

Switzerland

Pfaff-silberblau
Winden und Hebezeuge AG
Furtbachstraße 32
8107 Buchs/ZH
Switzerland
Phone +41-(0)1-8 44 14 66
Fax +41-(0)1-8 44 11 71
pfaff@pfaff-silberblau.ch

Hungary

Pfaff-silberblau Hungária
Csörlök és Emelőeszközök Kft.
Dózsa György u. 84
2220 Vecsés
Hungary
Phone +36-(0)29-35 64 33
Fax +36-(0)29-35 64 34
pfaff@pfaff-silberblau.hu

Pfaff-silberblau
Hebezeugfabrik GmbH & Co.
Äußere Industriestrasse 18
D-86316 Friedberg/Derching
GERMANY

Phone: +49 (0) 8 21 78 01-0
Fax: +49 (0) 8 21 78 01-299

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