



THE THRUSTER
BUEL®

TRUST THE THRUSTERS BUEL®

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PINTSCH BUBENZER



BUEL[®]_H
HIGH SPEED

BUEL[®]_G
GREEN

BUEL[®]_S
STRONG

TRUST THE THRUSTERS

www.buel-bubenzner.com

more information: www.buel-bubbenzer.com

UNLIMITED POSSIBILITIES

BUEL® thrusters are operated with 3 phase voltages between 220 and 690V with 50 or 60 Hz

PROTECTION CLASS: IP 65 + IP 67

All electrical components of the BUEL® thrusters, are protected from the elements inside the BUEL®

FAST

BUEL® thrusters reach a set time of less than 100ms

PURE POWER

BUEL® thrusters have 25% more power than conventional thrusters

EASY

BUEL can replace conventional thrusters 1:1



BUEL®
HIGH SPEED

BUEL®
THE THRUSTER



BUEL®
G
GREEN



BUEL®
S
STRONG

SAVES ENERGY
BUEL® thrusters fulfill the requirements of DIN EN ISO 50001 „Energy Management Systems“

LONG LIFE AND LESS MAINTENANCE
BUEL® thrusters score high for least maintenance cycles

HYDRAULIC MEDIA
BUEL® Model S thrusters are filled with a high performance synthetic oil, type PENTOSIN CHF 11S. This oil insures a trouble-free operation in the entire temperature range, indicated above. Biodegradable oil is available as an option.

-50°C TO OVER +75°C

BUEL® thrusters have been developed on the basis of decades of experience in power transmission. Highest quality standards in each PINTSCH BUBENZER business unit is the basis for excellent reliability and safety.

Temperatures deviating from the standard range are possible after consultation.

Our experts will assist you to find your best solution with BUEL®.

more information: www.buel-bubbenzer.com



BUDEL[®]_H

HIGH SPEED

The BUDEL[®] Model H is a family member of the PINTSCH BUBENZER brand BUDEL[®]. BUDEL[®] thrusters are used for almost all kind of industrial applications. They are setting new industry standards for disk and drum brakes as well as wheel brakes. Our experts will assist you to find your best solution with BUDEL[®].

Electrical design

All BUEL® thrusters are operated with 3-phase voltages between 220 V to 690 V at 50 Hz or 60 Hz.

Protection class

All electric components of the BUEL® thrusters are located inside, for best protection against environmental influences. BUEL® thrusters are rated IP 65. As an option, protection class IP 67 is possible.

Operating modes (BL 35-5 to BL 600-8)

BUEL® thrusters are designed for intermittent duty, independent from the required operating mode of the associated drive. No limitation of the BUEL® thruster duty cycle is required, because after reaching full stroke, (brake released) the motor is switched off. If full stroke is not reached in 4 seconds, the internal thruster motor switches off.

Ambient temperature range

BUEL® thrusters are suitable for ambient temperatures between -30°C to +60°C*. For deviating ambient temperatures, please contact us for support.

Protection against moisture

For applications in maritime or tropic environments, the optional use of a small heater to protect the motor windings from moisture is recommended.

Heater voltages:

- > 110 to 120 V AC 50 Hz or 60 Hz
- > 220 to 240 V AC 50 Hz or 60 Hz

Hydraulic media

BUEL® Model H thrusters are filled with a high performance synthetic oil, type PENTOSIN CHF 11S. This oil insures a trouble-free operation in the entire temperature range, indicated above.

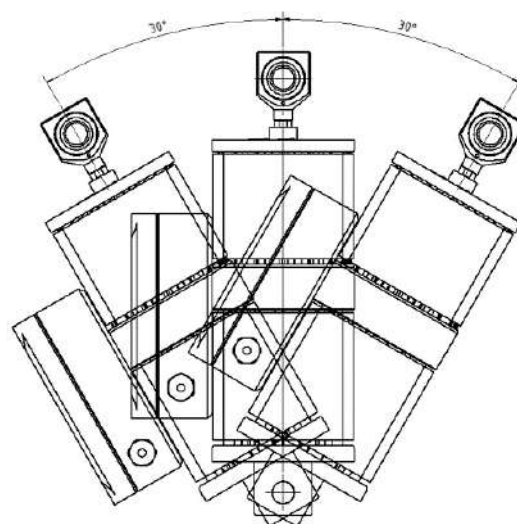
Biodegradable oil is available as an option.

Properties

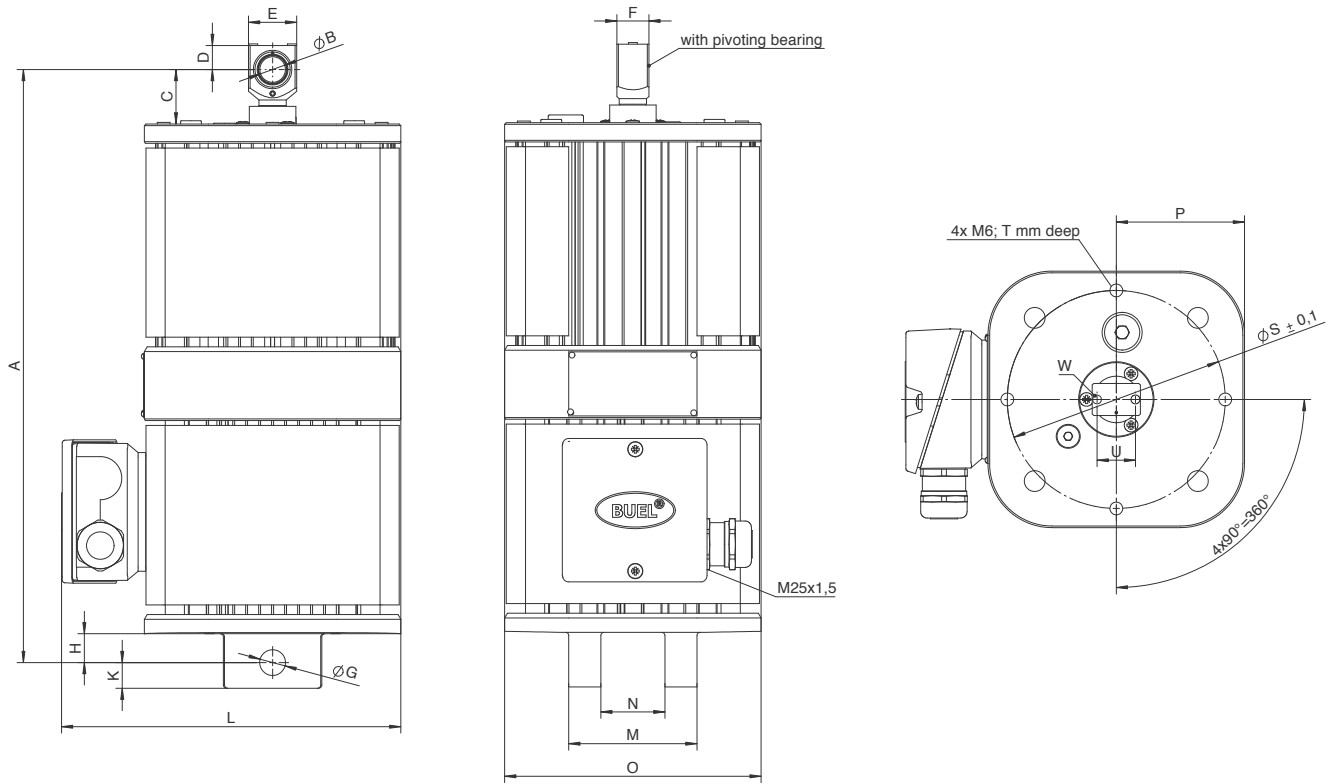
- > New technology
- > Pressure generation by centrifugal gear pump with high mechanical efficiency
- > Fast setting times
- > Energy saving by intermittent duty
- > Fail safe principle
- > Redundant valves
- > Terminal box with control board
- > Automatic pressure drop compensation
- > Low heat generation
- > Huge temperature range in standard execution
- > Little oil volume
- > Little ecologic risk
- > High protection category
- > Infinitely variable setting time
- > Swivel head for shear force and misalignment compensation
- > Unique design for the complete model range
- > Low weight, excellent mass/performance ratio

Installation positions

All BUEL® thrusters are preferably operated vertically (piston rod on top). A deviation of +/- 30° from the vertical axis is permitted. A horizontal installation is possible as an option (please indicate with the order).

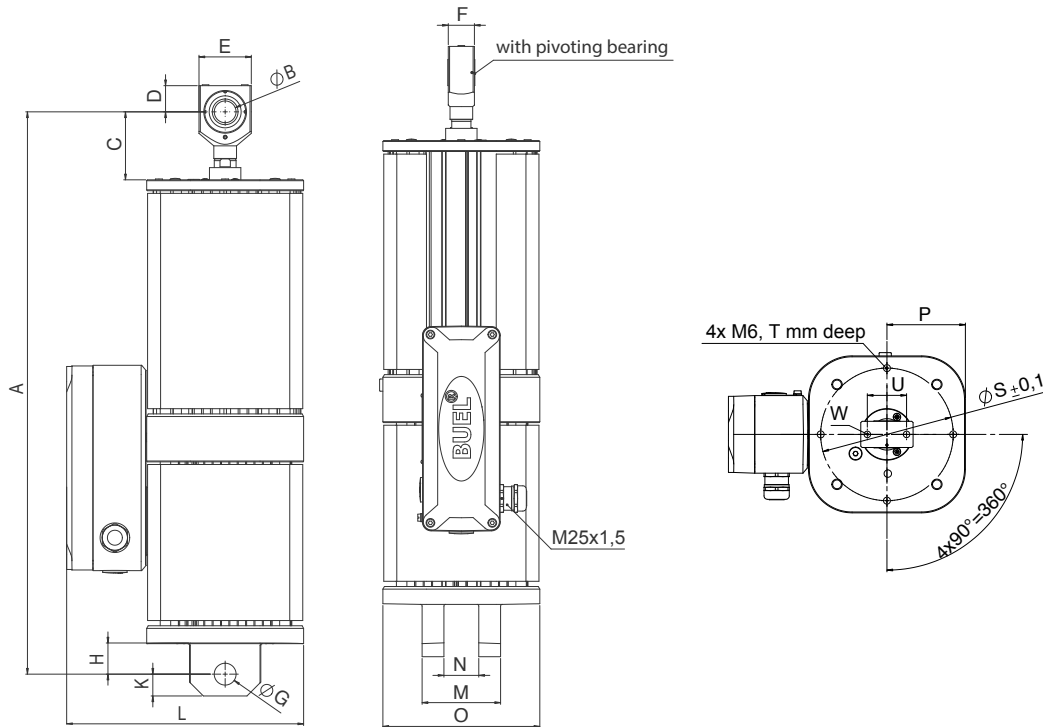


* At 400 V, 50 Hz.



BL	F max. (N)	max. power (kW) *	max. current consumton (A) *	operating mode S1 and S3 to (c/h)	weight with hydraulic medium (kg)
22-5**	400	0,15	0,4	1000	11
30-5**	450	0,16	0,4	1000	13
35-5	600	0,35	0,6	1000	16
50-6	900	0,45	0,7	1000	16
50-12	900	0,45	0,7	1000	16
80-6	2000	0,60	1,3	1000	21
80-12	2000	0,60	1,3	1000	21
125-6	2500	0,65	1,4	1000	24
125-12	2500	0,65	1,4	1000	24
200-6	3600	0,80	1,5	1000	24
200-12	3600	0,80	1,5	1000	24
300-6	5000	0,90	1,6	900	33
300-12	5000	0,90	1,6	900	33
400-8	5500	1,0	1,7	900	33
400-10	5500	1,0	1,7	900	33
440-8	6500	1,10	1,8	900	33
450-6	7000	1,20	2,0	900	33
450-8	7000	1,20	2,0	900	33
550-8	8000	1,25	2,1	900	33
600-8	8000	1,25	2,1	900	33

*At 400 V, 50 Hz. **At temperature -30°C to +50°C (lower, respectively higher temperatures are possible on request).



BL	F max.	A	B	C	D	E	F	G	H	K	L	M	N	O*	P	S	T	U	W
22-5	400 N	286	16	26	15	30	20	16	20	14	206	80	40	160	80	136	12	24	M4
30-5	450 N	370	16	34	15	30	20	16	18	16	210	80	40	160	80	136	12	24	M4
35-5	600 N	370	16	34	15	30	20	16	18	16	250	80	40	160	80	136	12	24	M4
50-6	900 N	435	20	94	25	50	25	20	23	22	250	120	60	160	80	136	12	35	M5
50-12	900 N	515	20	114	25	50	25	20	23	22	250	120	60	160	80	136	12	35	M5
80-6	2000 N	450	20	66	25	50	25	20	23	22	250	120	60	160	80	136	13	35	M5
80-12	2000 N	530	20	86	25	50	25	20	23	22	250	120	60	160	80	136	13	35	M5
125-6	2500 N	645	25	69	30	60	31	25	35	25	250	90	40	160	80	136	13	45	M5
125-12	2500 N	705	25	129	30	60	31	25	35	25	250	90	40	160	80	136	13	45	M5
200-6	3600 N	645	25	69	30	60	31	25	35	25	250	90	40	160	80	136	13	45	M5
200-12	3600 N	705	25	129	30	60	31	25	35	25	250	90	40	160	80	136	13	45	M5
300-6	5000 N	645	25	78	30	60	31	25	35	25	270	90	40	180	90	152	12,5	45	M5
300-12	5000 N	705	25	138	30	60	31	25	35	25	270	90	40	180	90	152	12,5	45	M5
400-8	5500 N	645	25	78	30	60	31	25	35	25	270	90	40	180	90	152	12,5	45	M5
400-10	5500 N	645	25	78	30	60	31	25	35	25	270	90	40	180	90	152	12,5	45	M5
440-8	6500 N	648	25	81	30	60	31	25	35	25	270	90	40	180	90	152	12,5	45	M5
450-6	7000 N	645	25	78	30	60	31	25	35	25	270	90	40	180	90	152	12,5	45	M5
450-8	7000 N	645	25	78	30	60	31	25	35	25	270	90	40	180	90	152	12,5	45	M5
550-8	8000 N	645	25	78	30	60	31	25	35	25	270	90	40	180	90	152	12,5	45	M5
600-8	8000 N	665	25	98	30	60	31	25	35	25	270	90	40	180	90	152	12,5	45	M5

*Data without pressure and temperature monitoring.

BL	BUEL® Thrusters Series
80 (Example)	Type/Size
6 (Example)	Stroke

A	Heater
B	Cover (protection against dust)
C	Increased corrosion protection
D	application in active brakes
EB	Proximity switch
G	Version with internal or external proportional valve
H	High speed execution
I	Protection class IP 67
M	For controlled braking system BB900
N	BOSS® anti snag system
P	Deviating mounting position
R	Reserve stroke indication
S	Lowering valve
T	Temperature monitoring
W	High temperature execution
X	Special external certificates like e.g. UL
Z	Two stage braking action
xxxV, yy Hz	Voltage, frequency



OPTION R (RESERVE STROKE INDICATOR BY LED)

Visual indication for „dropping below minimum permissible reserve stroke“, by two LED’s located on the terminal box. The option „reserve stroke indicator by LED“ makes it possible to monitor the lower threshold of the reserve stroke,

when the brake is set. When going below this threshold, the LED indicator changes from green light to red light. The LED’s are extremely bright. An indication even in direct sunlight is ensured (possible option for BL 125 and up).

CERTIFICATE OF COMPLIANCE

Certificate Number 20190228- E492639
Report Reference E492639-20170427
Issue Date 2019-FEBRUARY-28

Issued to: PINTSCH BUBENZER GMBH
Friedrichshuttenstr 1
57548 Kirchen-Wehbach GERMANY

This certificate confirms that
representative samples of

POWER CIRCUIT AND MOTOR-MOUNTED APPARATUS
USL, CNL – Enclosed Type electrical Brake thruster Series
BUEL, models BL 22-5, BL 30-5, BL 35-5, BL 50-6, BL 50-
12, BL 80-6, BL 80-12, BL 125-6,
BL 125-12, BL 200-6, BL 200-12, BL 300-6, BL 300-12, BL
400-8, BL 400-10, BL 440-8, BL 450-6, BL 450-8, BL 550-8,
BL 600-8 may be followed by A,B,C,G,K,M,N,O,P,S,U,Y,Z
or X or in any of these letter combination.

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.


Standard(s) for Safety: UL 508 and CSA 22.2 No. 14-13 Industrial Control
Equipment

Additional Information: See the UL Online Certifications Directory at
<https://iq.ulprospector.com> for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Mark. Only the UL Follow-Up
Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's
Follow-Up Services.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

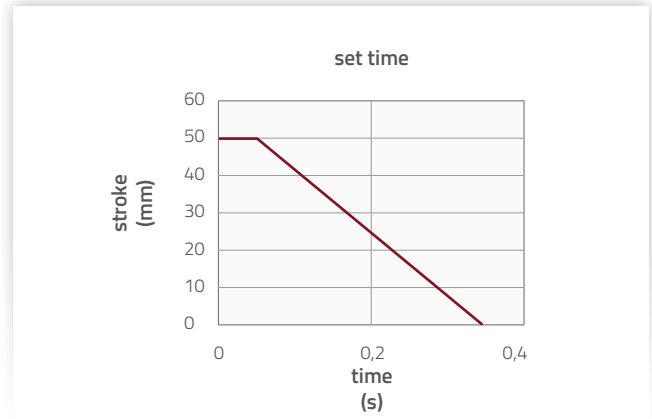
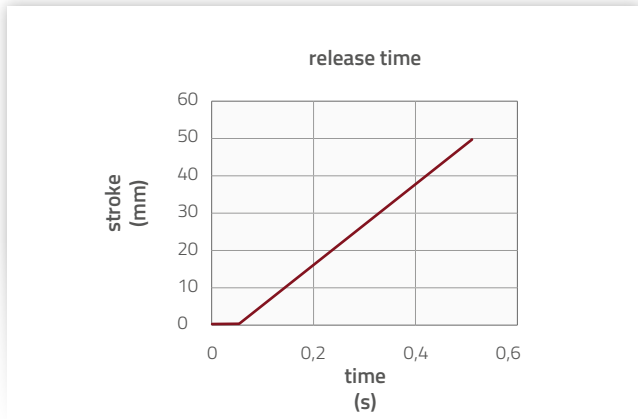
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contact a local UL Customer Service Representative at <https://ul.com/aboutus/contact>



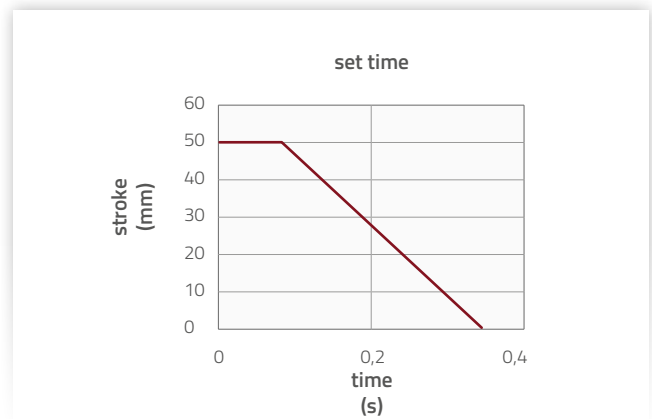
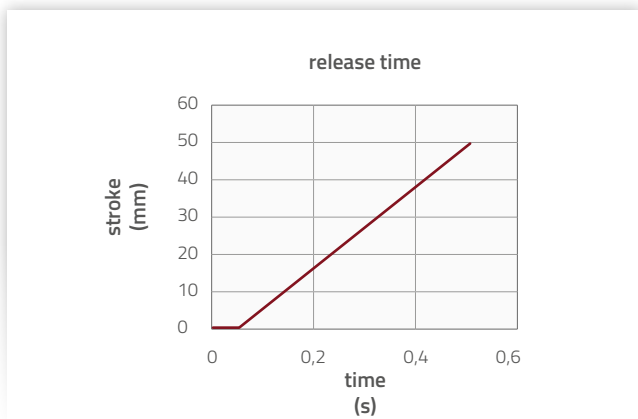
CERTIFICATE OF COMPLIANCE

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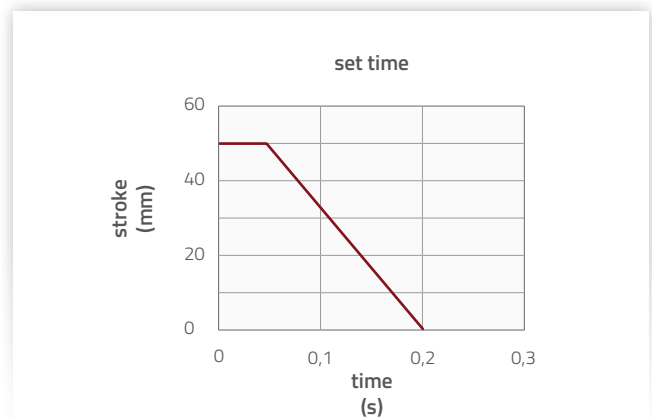
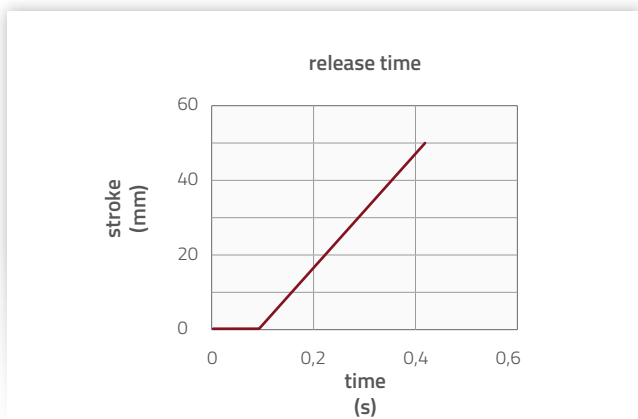
BL 22-5



BL 30-5

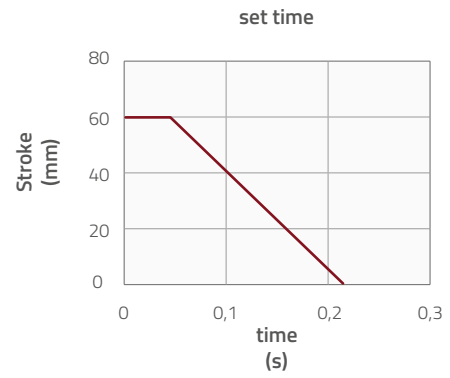
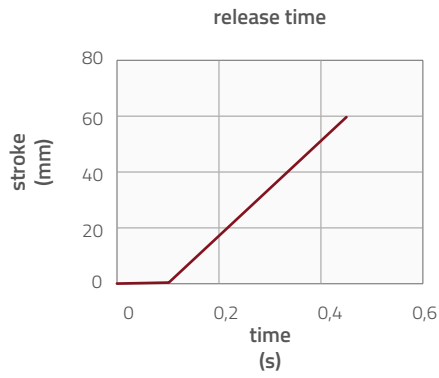


BL 35-5

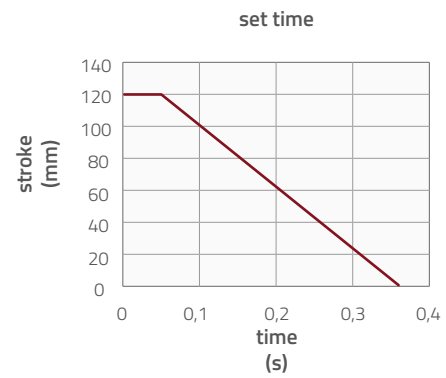
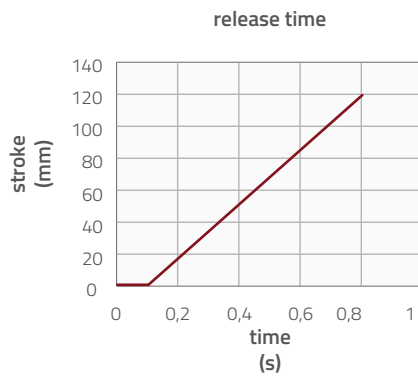


* Weight load (N) according to BUEL® type/ size according to DIN 15430 or based on DIN 15430 Example: BL 80-6 - weight load 800 N (= 80 kp).

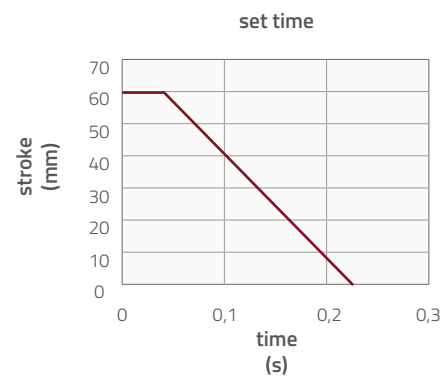
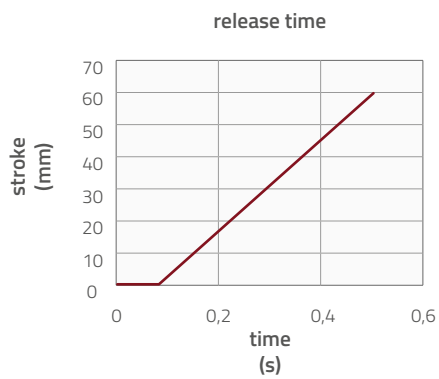
BL 50-6



BL 50-12

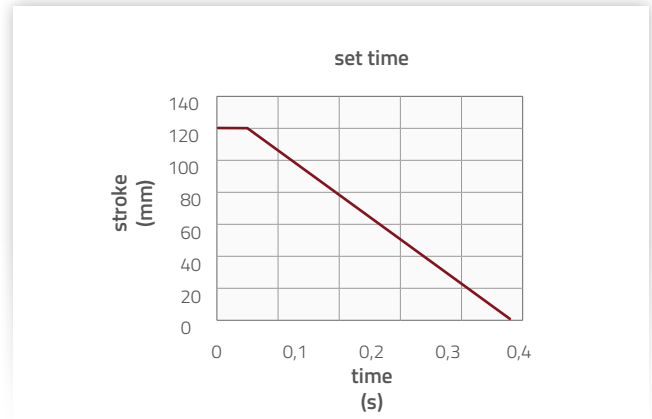
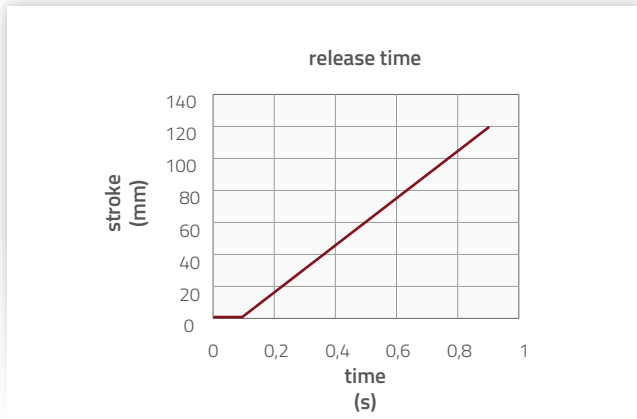


BL 80-6

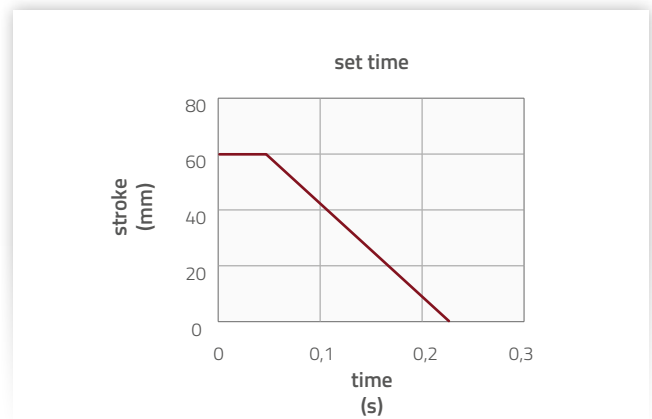
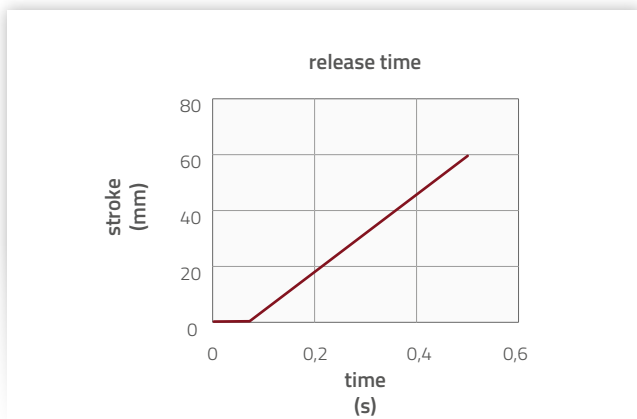


* Weight load (N) according to BUEL® type/ size according to DIN 15430 or based on DIN 15430 Example: BL 80-6 - weight load 800 N (= 80 kp).

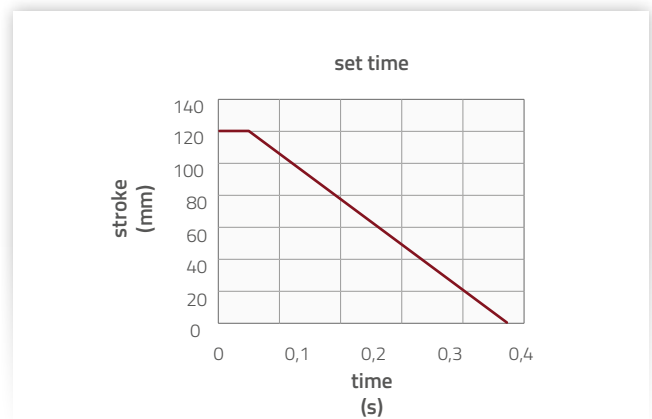
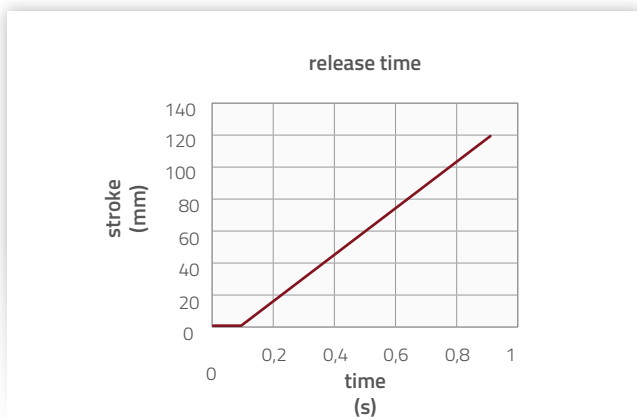
BL 80-12



BL 125-6

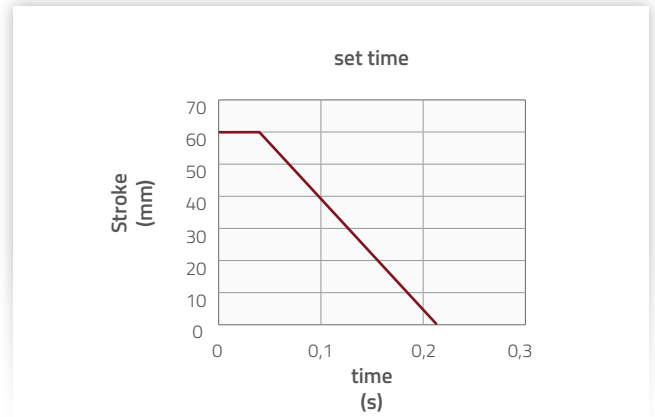
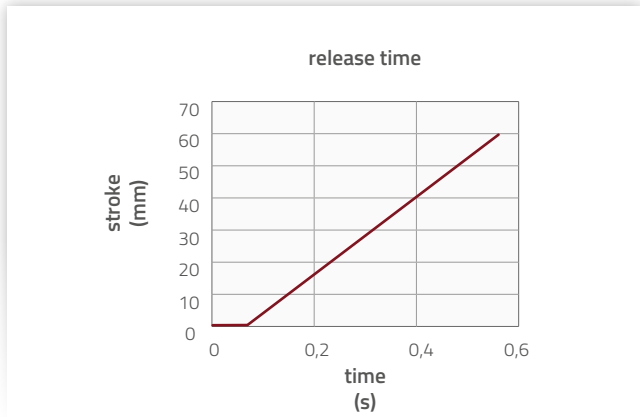


BL 125-12

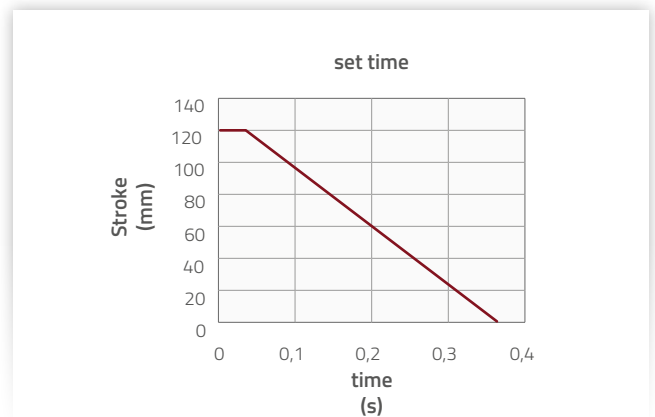
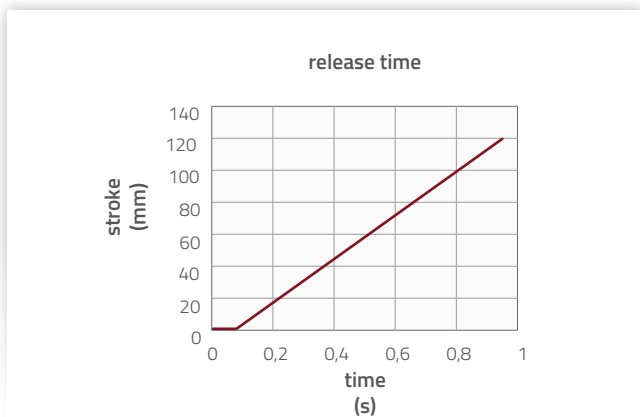


* Weight load (N) according to BUEL® type/ size according to DIN 15430 or based on DIN 15430 Example: BL 80-6 - weight load 800 N (= 80 kp).

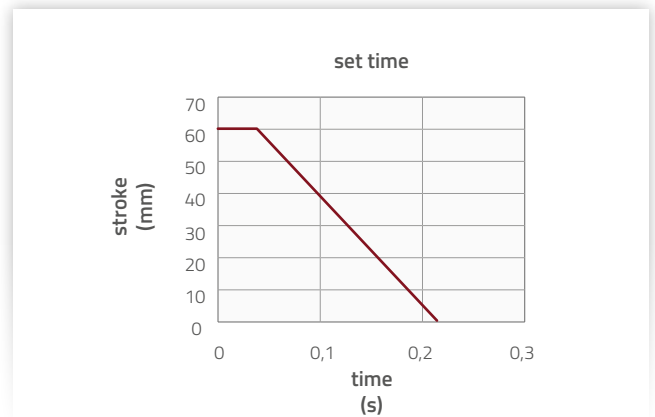
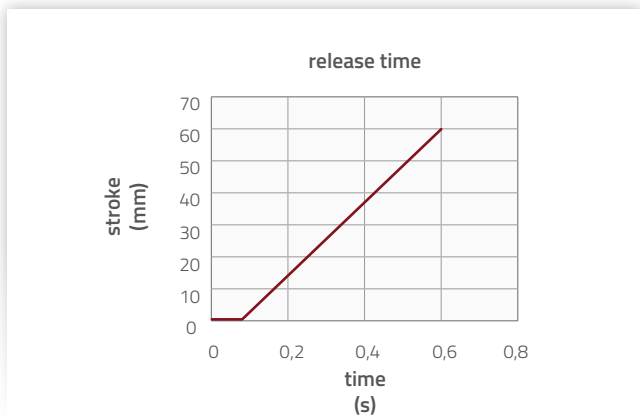
BL 200-6



BL 200-12

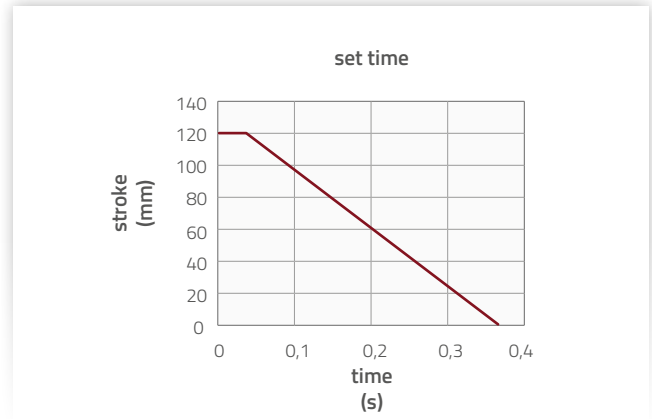
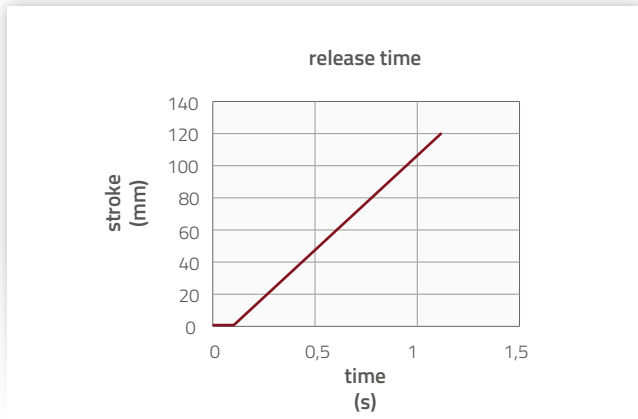


BL 300-6

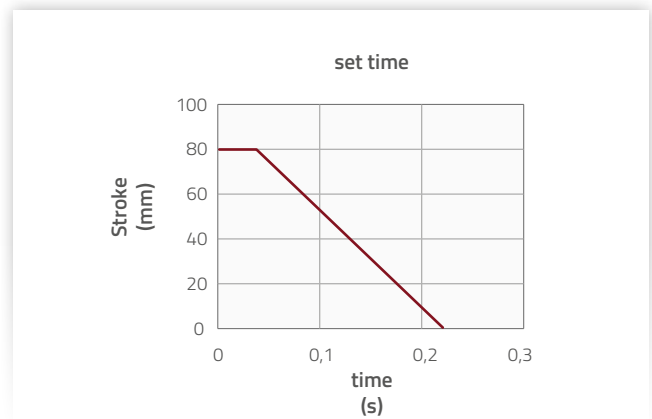
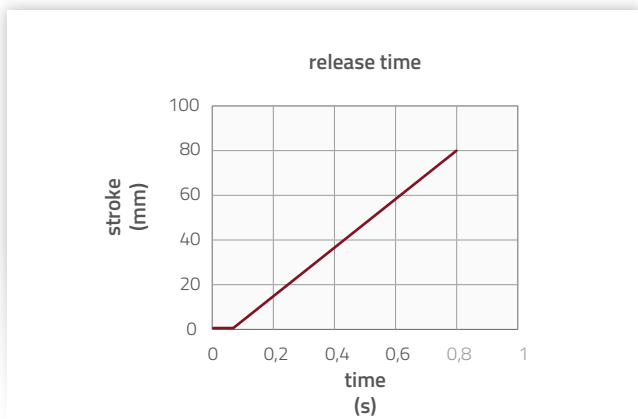


* Weight load (N) according to BUEL® type/ size according to DIN 15430 or based on DIN 15430 Example: BL 80-6 - weight load 800 N (= 80 kp).

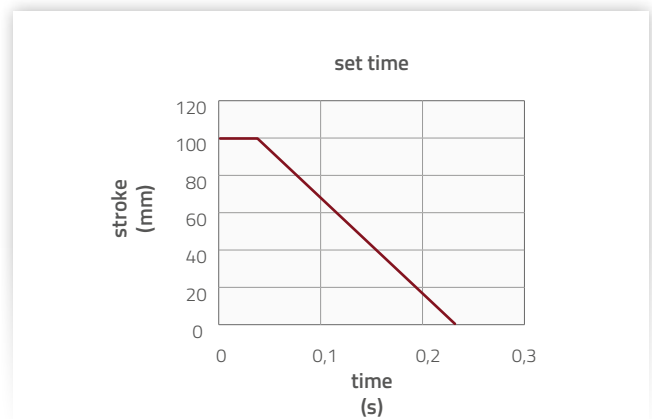
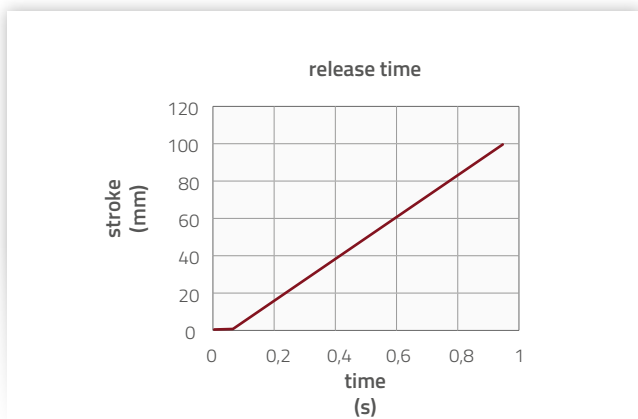
BL 300-12



BL 400-8

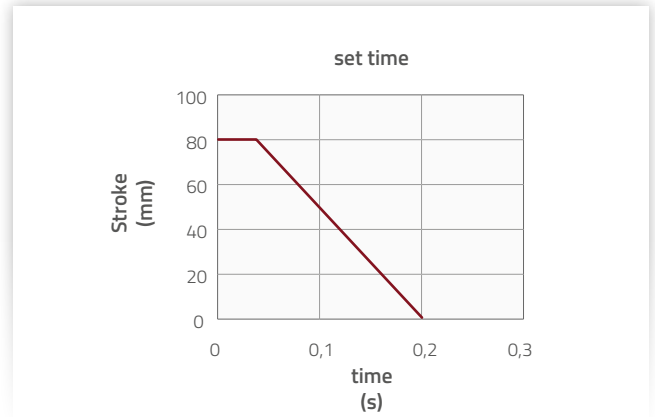
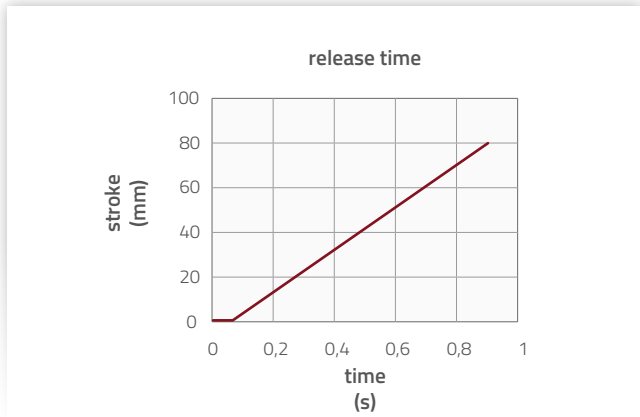


BL 400-10

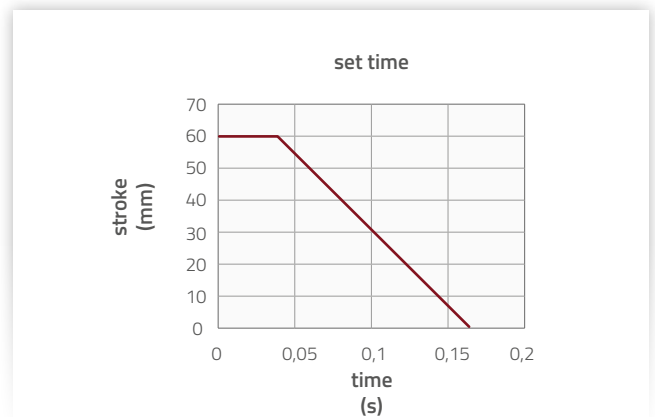
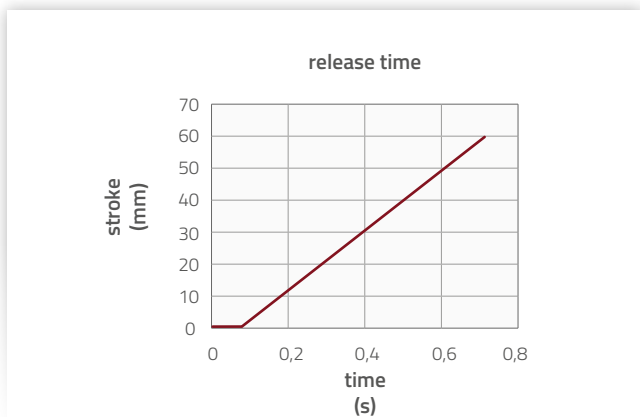


* Weight load (N) according to BUEL® type/ size according to DIN 15430 or based on DIN 15430 Example: BL 80-6 - weight load 800 N (= 80 kp).

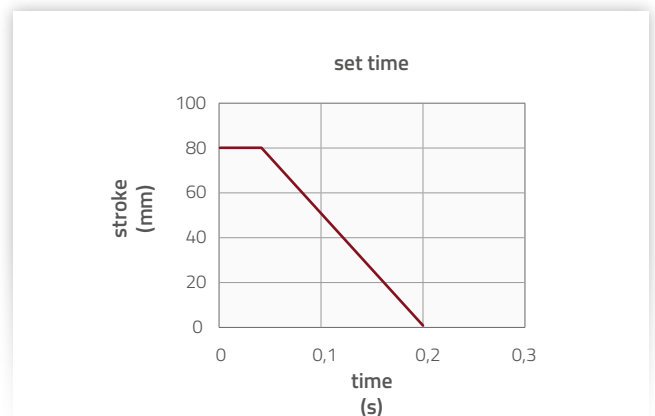
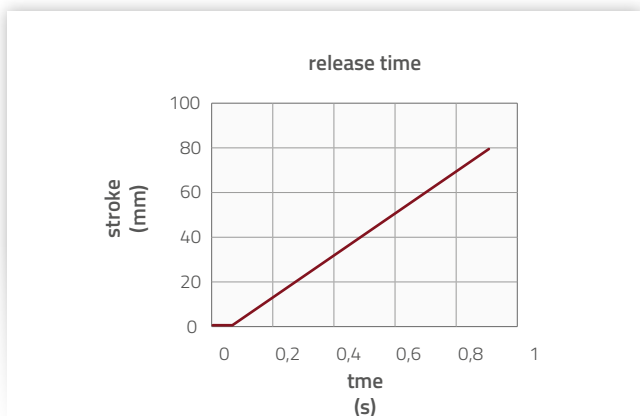
BL 440-8



BL 450-6

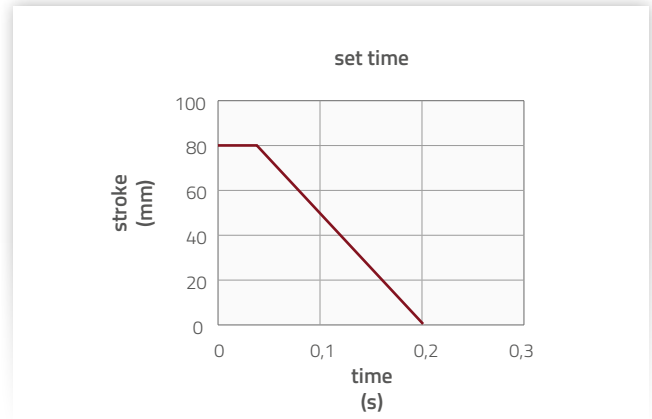
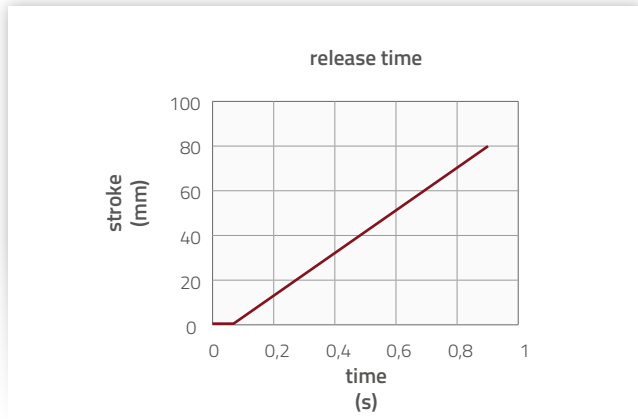


BL 450-8

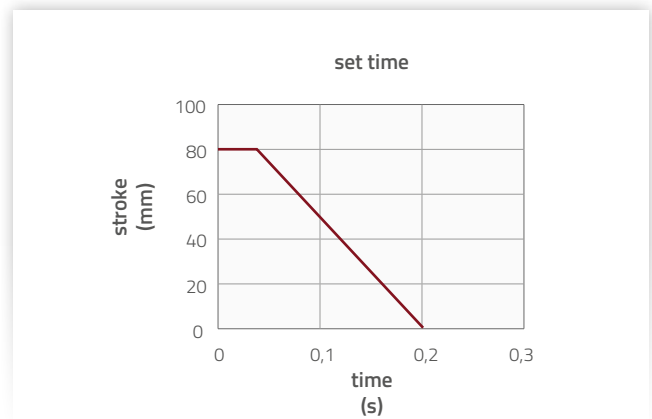
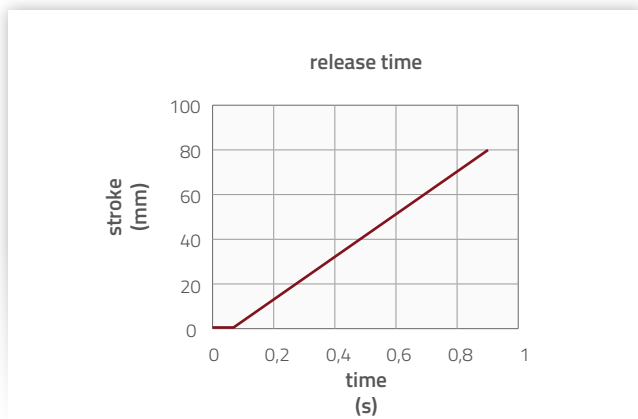


* Weight load (N) according to BUEL® type/ size according to DIN 15430 or based on DIN 15430 Example: BL 80-6 - weight load 800 N (= 80 kp).

BL 550-8



BL 600-8



* Weight load (N) according to BUEL® type/ size according to DIN 15430 or based on DIN 15430 Example: BL 80-6 - weight load 800 N (= 80 kp).

more information: www.buel-bubbenzer.com



BUHEL[®]
G
GREEN

The BUHEL[®] Model G is a new family member of the PINTSCH BUBENZER brand BUHEL[®]. It is a compact thruster to feed active or passive hydraulic brakes and emergency brakes. It is also suitable for small capacity hydraulic cylinders. Operational pressure can be up to 250 bar. Our experts will assist you to find your best solution with BUHEL[®].

Electrical design

All BUEL® thrusters are operated with 3-phase voltages between 220 V to 690 V at 50 Hz or 60 Hz.

Protection class

All electric components of the BUEL® thrusters are located inside, for best protection against environmental influences. BUEL® thrusters are rated IP 65. Protection class IP 67 is possible as an option.

Operating modes

BUEL® thrusters are designed for intermittent duty, independent from the required operating mode of the associated drive. No limitation of the BUEL® thruster duty cycle is required, because after reaching full stroke, (brake released) the motor is switched off. If full stroke is not reached in 4 seconds, the internal thruster motor switches off.

Ambient temperature range

BUEL® thrusters are suitable for ambient temperatures between -30°C to +60°C*. For deviating ambient temperatures, please contact us for support.

Protection against moisture

For applications in maritime or tropic environments, the optional use of a small heater to protect the motor windings from moisture is recommended.

Heater voltages:

- > 110 to 120 V AC 50 Hz or 60 Hz
- > 220 to 240 V AC 50 Hz or 60 Hz

Hydraulic media

BUEL® Model G thrusters are filled with a high performance synthetic oil, type PENTOSIN CHF 11S. This oil insures a trouble-free operation in the entire temperature range, indicated above.

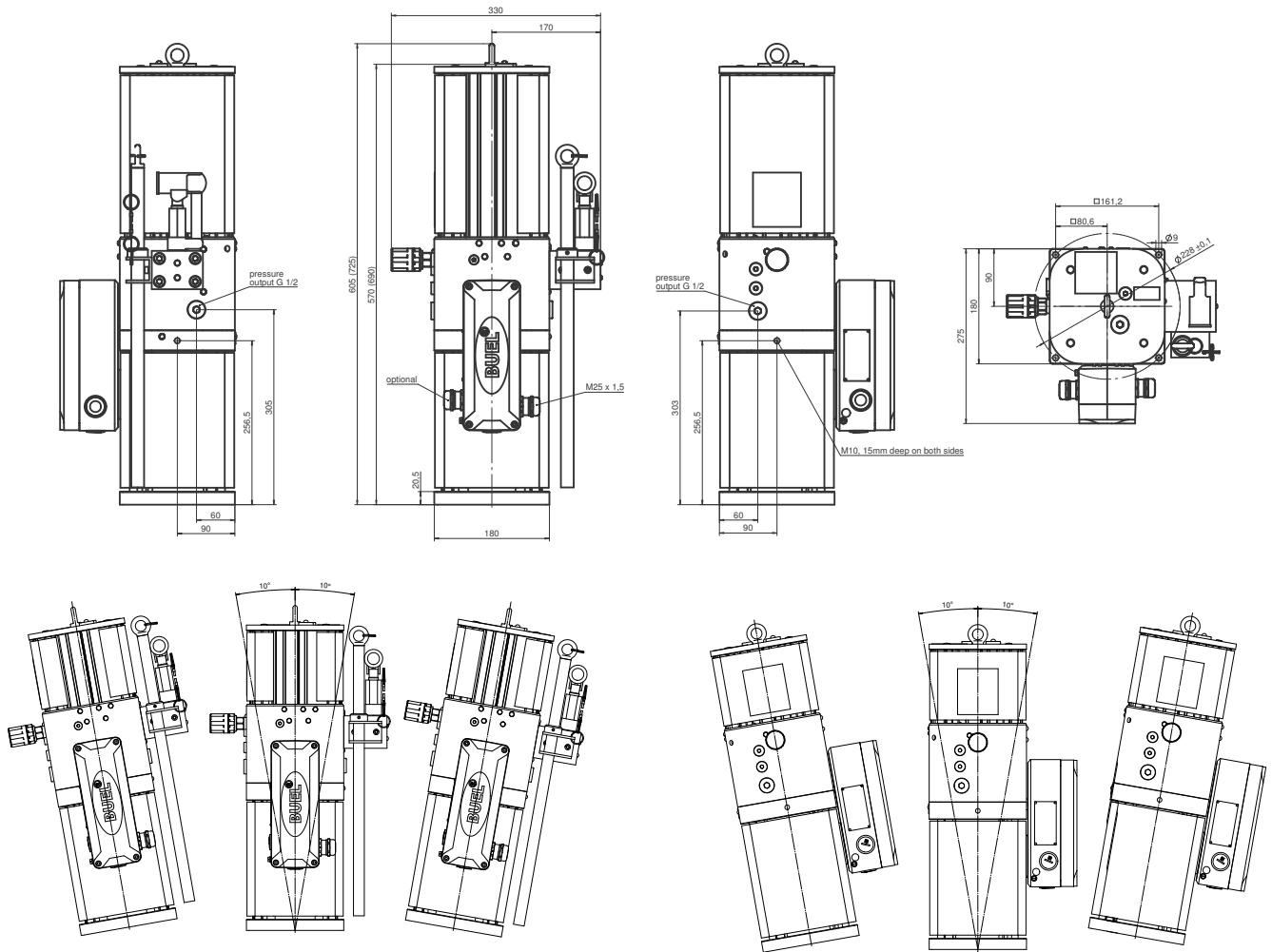
Biodegradable oils can be used as an option.

Properties

- > Compact design
- > Fail safe principle
- > Variable tank capacity, small filling quantity
- > Use of bio-degradable oils possible
- > Redundant valve system
- > Energy saving by limited duty cycle
- > Automatic compensation of pressure losses, by short time actuation
- > Hydraulic parts protected inside the housing
- > 2 pressure outlets
- > Internal generation of the control voltage for valves and sensors
- > Overload protection by monitoring of the working pressure
- > External manual release incl. "dead-man-handle"
- > Integrated bursting pressure protection
- > Options for additional functions and monitoring

BUEL® G	Max. pressure (bar)	Max. power (kW)	Max. current consumption (A)	Max. flow rate (l/min.)	Weight with oil (kg)	Mode of operation (c/h)
100	100	1,7	4,4	6	39	180
210	210	3,2	6,0	6	39	180
240	240	3,8	6,5	6	39	180
100L	100	1,7	4,4	6	42	180
210L	210	3,2	6,0	6	42	180
240L	240	3,8	6,5	6	42	180

* Technical data relates to 3 phase 400 V, 50 Hz.



Installation positions

BUEL® Model G thrusters have to be operated in vertical position (tank on top). A deviation of +/- 10° from the vertical axis is permitted.

Brake type	Model G size	No. of calipers	Body size
SF 10	210	2	Standard
SF 10		4	Standard
SF 15	210	2	Standard
SF 15		4	Standard
SF 24	210	2	Standard
SF 24		4	„L” Version
SF 30	240	2	„L” Version
SF 30		4	„L” Version
SF 40	240	2	„L” Version
SF 40		4	„L” Version
SF 50	240	4	„L” Version



G	Type
210	Max. working pressure (bar)
A	Heater
C	Increased corrosion protection
D	Pressure monitoring
I	Protection class IP67
L	Big tank housing
M	Shut-off valve latching, non-latching
N	Level monitoring
O	Optical status control
R	Reserve stroke indication
T	Temperature monitoring
V	SOS/BOSS® application
W	High temperature execution
X	Special external certificates
xxx V, yy Hz	Voltage, frequency



OPTION O (VISUAL CONDITION MONITORING)

Visual indication for „operating pressure reached“.
All BUEL® Model G can be equipped with a visual condition monitoring, which makes it possible to monitor the operating pressure.

> red: Operating pressure not reached
> green: Operating pressure reached
The LED's are extremely bright.
An indication even in direct sunlight is ensured.

CERTIFICATE OF COMPLIANCE

Certificate Number 20190228- E492639
Report Reference E492639- 20181005
Issue Date 2019-FEBRUARY-28

Issued to: PINTSCH BUBENZER GMBH
Friedrichshuttenstr 1
57548 Kirchen-Wehbach GERMANY

**This certificate confirms that
representative samples of**

POWER CIRCUIT AND MOTOR-MOUNTED APPARATUS
USL, CNL – Enclosed Type electrical Brake thruster Series
BUEL G, models Buel G 100 Buel G 210 and Buel G 240
may be followed by A, C, D, K, M, N, R, T, V or X or in any
of these combination.

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 508 and CSA 22.2 No. 14-13 Industrial Control
Equipment

Additional Information: See the UL Online Certifications Directory at
<https://iq.ulprospector.com> for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Mark. Only the UL Follow-Up
Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's
Follow-Up Services.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please
contact a local UL Customer Service Representative at <http://ul.com/aboutus/localoffice>



CERTIFICATE OF COMPLIANCE

www.buel-bubenzner.com

more information: www.buel-bubenzner.com



BUEL[®]
STRONG **S**

The BUEL[®] Model S is a brand new family member of the PINTSCH BUBENZER brand BUEL[®]. It is designed for wheel brakes on rail mounted cranes, where high pulling forces for mechanical wheel brakes are required. The patented cylinder system generates pulling forces up to 40.000 N. It has a robust, but also compact design for rough environmental conditions. Our experts will assist you to find your best solution with BUEL[®].

Electrical design

All BUEL® Model S units are operated with 3-phase voltages between 220 V to 690 V at 50 Hz or 60 Hz.

Protection class

The electric components of the BUEL® Model S thrusters are located inside, for best protection against environmental influences. BUEL® thrusters are rated IP 65. Protection class IP 67 is available as an option.

Operating modes

BUEL® thrusters are designed for intermittent duty, independent from the required operating mode of the associated drive. No limitation of the BUEL® thruster duty cycle is required, because after reaching full stroke, (brake released) the motor is switched off. If full stroke is not reached in 4 seconds, the internal thruster motor switches off.

Ambient temperature range

BUEL® Model S thrusters are suitable for ambient temperatures between -30°C to +60°C*. For deviating ambient temperatures, please contact us for support.

Protection against moisture

For applications in maritime or tropic environments, the optional use of a small heater to protect the motor windings from moisture is recommended.

Heater voltages:

- > 110 to 120 V AC 50 Hz or 60 Hz
- > 220 to 240 V AC 50 Hz or 60 Hz

Hydraulic media

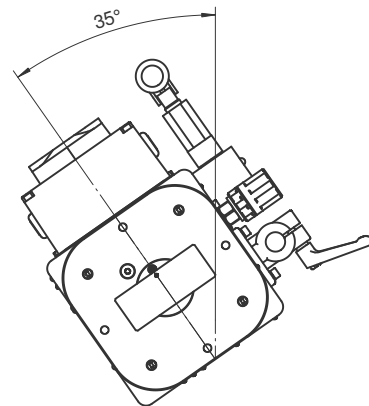
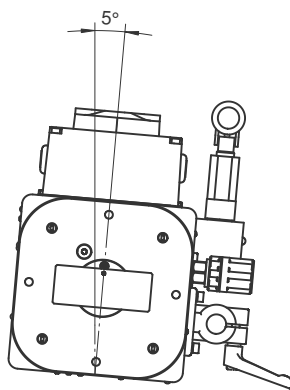
BUEL® Model S thrusters are filled with a high performance synthetic oil, type PENTOSIN CHF 11S. This oil insures a trouble-free operation in the entire temperature range, indicated above.

Biodegradable oil is available as an option.

Features

- > Pressure generation by centrifugal gear pump
- > Energy saving by intermittent duty
- > Fail safe principle
- > Redundant valves
- > Terminal box with control board
- > Automatic pressure drop compensation
- > Low heat generation
- > Huge temperature range in standard execution
- > Little oil volum
- > Little ecologic risk
- > High protection category
- > Infinitely variable setting time
- > Hand pump with shut-off valve
- > Low weight, excellent mass/performance ratio
- > Limit switch release control off the shelf

* Technical data relates to 3-phase 400 V, 50 Hz.

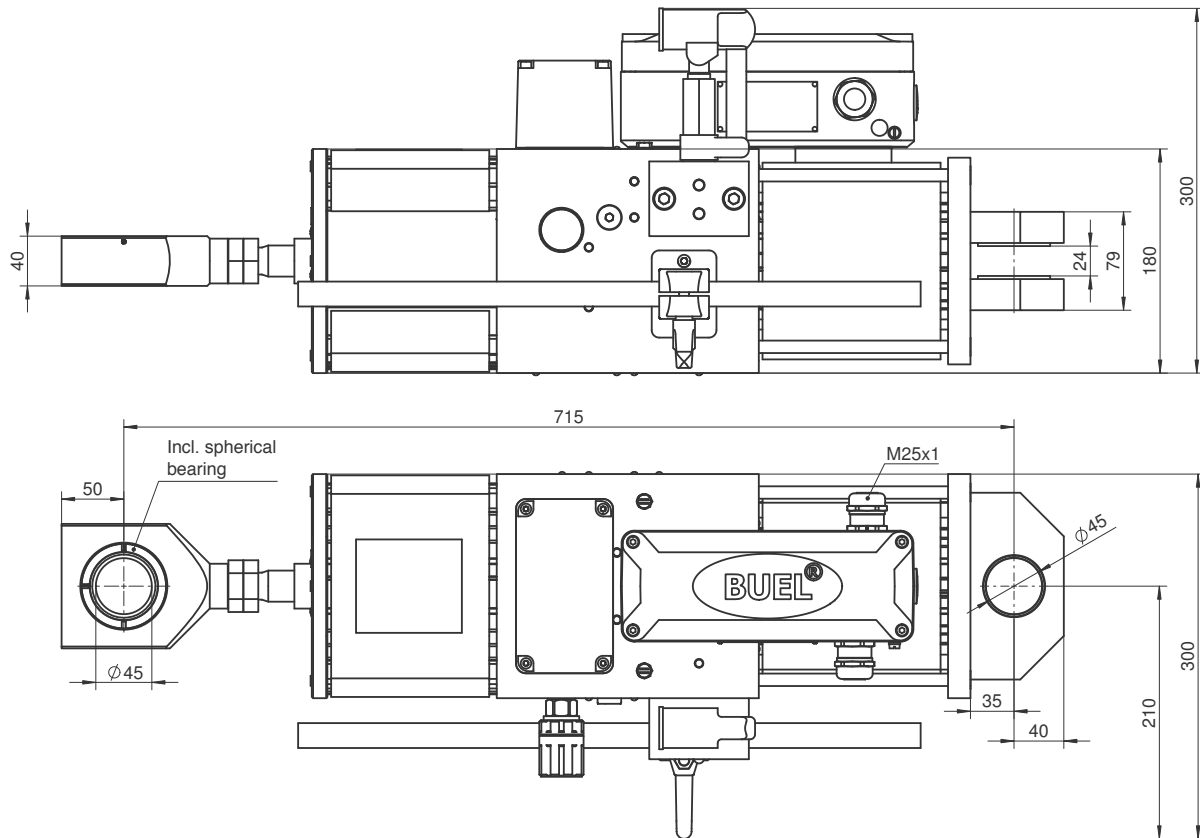


Installation positions

BUEL® Model S units are preferably operated in horizontal position. A deviation of +/- 2° from the horizontal plane is permitted. A rotation of 35° / 5° from the normal position is permitted.

Model S	Model S	Reset force (N)	Stroke (mm)	Max. power (KW)	Max. power consumption (A)	Mode of operation (c/h)	Weight with oil (kg)
3500-28	BRBe 70	35000	28	1,0	1,7	120	52
4000-28	BRBe 90	40000	28	1,1	1,8	120	52

Technical data relates to 3-phase 400 V, 50 Hz.



S	Type
3500	Max. pulling force in dN

Options	Type
A	Heater
C	Increased corrosion protection
I	Protection class IP67
M	Shut-off valve latching, non-latching
R	Shut-off valve latching
xxx V, yy Hz	Voltage, frequency



EVOLUTION BRAKING UNLIMITED

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