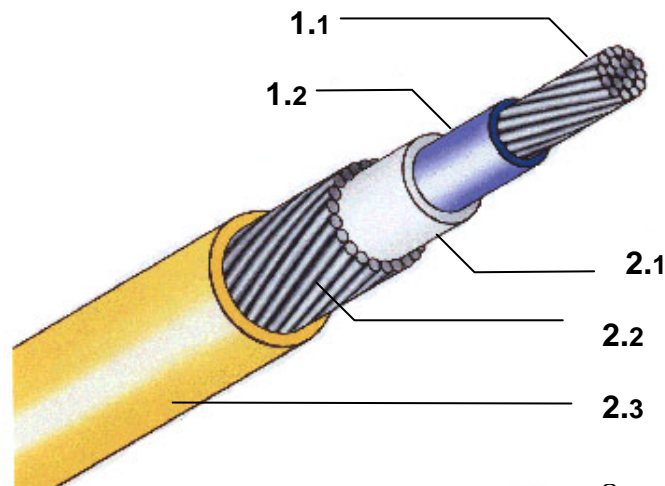


DURAFLEX® - Remote Controls

DURAFLEX® - Core 1



DURAFLEX® - Conduit

DURAFLEX® is a mechanical, flexible remote control cable for the transfer of pressure and tractive forces. The cable core **1** consists of a special pressure-stiff stranded cable **1.1** with a modified synthetic coating **1.2**.

The **DURAFLEX®** conduit **2** as a stress bearer consists of an acetal conduit inner lining **2.1**, which is reinforced with compression- and extension-resistant longitudinal continuous loop wires **2.2** and is extrusion coated with polyamide **2.3**

The ideal materials pairing of the cable core exterior **1.2**, the lining of the **DURAFLEX®** conduit **2.1**, and also the lining of the end armatures, guarantee optimal gliding properties, a high degree of durability, maintenance free function and resistance to cold.

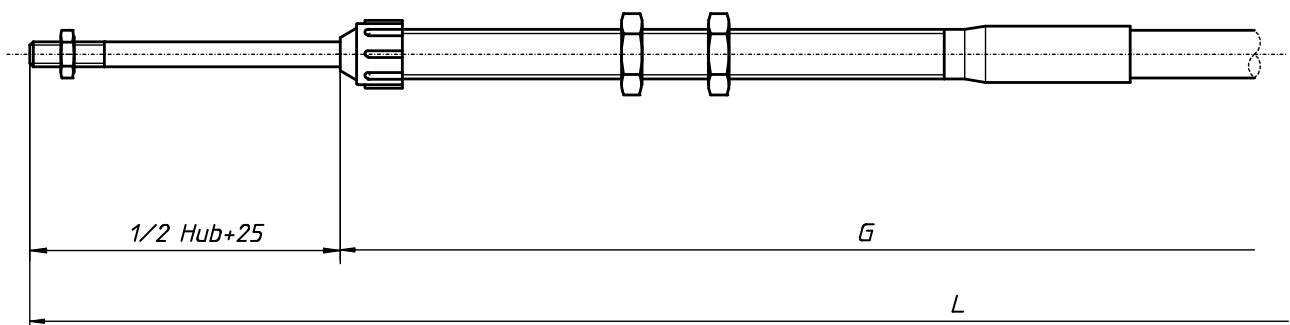
The advantages at a glance:

- Load capacity at push and pull functions up to max. 1500 N
 - Stroke up to 200 mm
- Three-dimensional installation for the smallest installation radius.
 - High degree of efficiency
- Temperature range -40° to $+100^{\circ}\text{C}$
 - Easy assembly

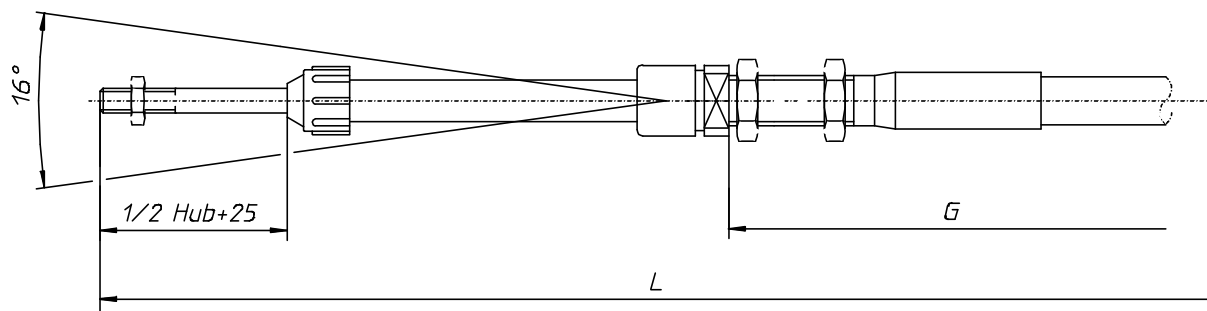
DURAFLEX® - End armatures

Available as standard in the two types shown below (special models and models with telescopic pipe reinforcement can also be made following consultation).

I. Guiding bushing



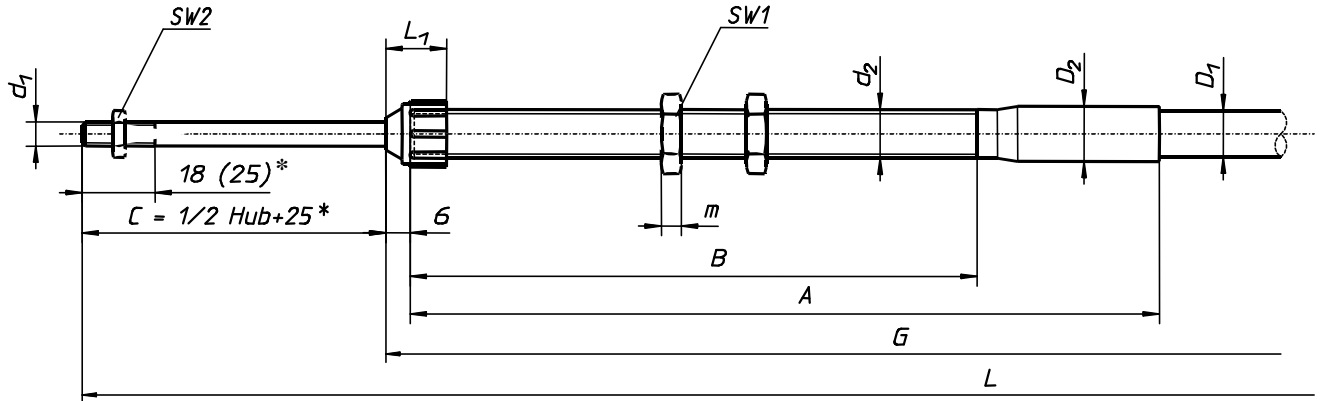
II. Swivel bulkhead end



The end fittings can be combined with each other, i.e. DURAFLEX® cable can be manufactured with a guiding bushing on one side and a swivel bulkhead end on the other.

The information in the following table of measurements refers to “**Operational stroke in central position**”. For length values, the reference edges of the “**G**” and “**L**” measurements are to be noted. (For cable / control lever combinations, the reference edges of each of the lever data sheets are to be noted).

Guiding bushing

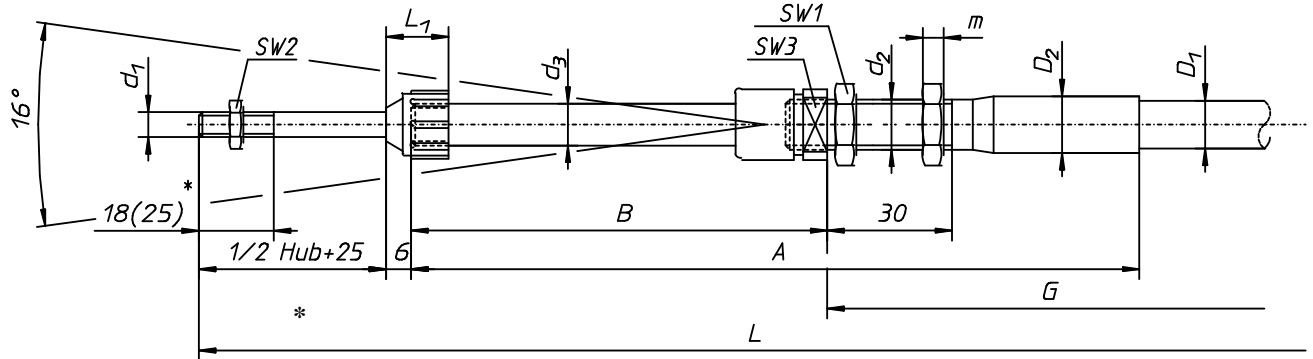


* Length of thread 25 for type 8 only

Type	Stroke	A ≈	B	D1	D2	d1	d2	L1	m	width across flats1	width across flats2	Operational pressure [N] max.			Minimum installation radius
												Stroke	Pressure	Traction	
4	-25	115	65	∅ 8	∅ 10	M 5	M 10x1	14	4	14	8	-25	500	500	80
	-50	140	90									-50	500		
	-75	165	115									-75	300		
	-100	190	140									-100	150		
5	-25	115	65	∅ 10	∅ 12.1	M 5	M 10x1	14	4	14	8	-25	600	800	80
	-50	140	90									-50	600		
	-75	160	115									-75	400		
	-100	190	140									-100	200		
	-125	215	165									-125	150		
	-150	240	190									-150	150		
6	-25	115	65	∅ 11.5	∅ 13.6	M 6	M 12x1	15	5	17	10	-25	700	1000	100
	-50	140	90									-50	700		
	-75	165	115									-75	500		
	-100	190	140									-100	300		
	-125	215	165									-125	200		
	-150	240	190									-150	200		
8	-25	115	65	∅ 14	∅ 16	M 8	M 14x1	15	7	19	13	-25	800	1500	150
	-50	140	90									-50	800		
	-75	165	115									-75	600		
	-100	190	140									-100	400		
	-125	215	165									-125	300		
	-150	240	190									-150	300		
	-175	265	215	-175	250										
	-200	290	240	-200	250										

For special constructions or higher payloads, please consult our consulting service.

Swivel bulkhead end

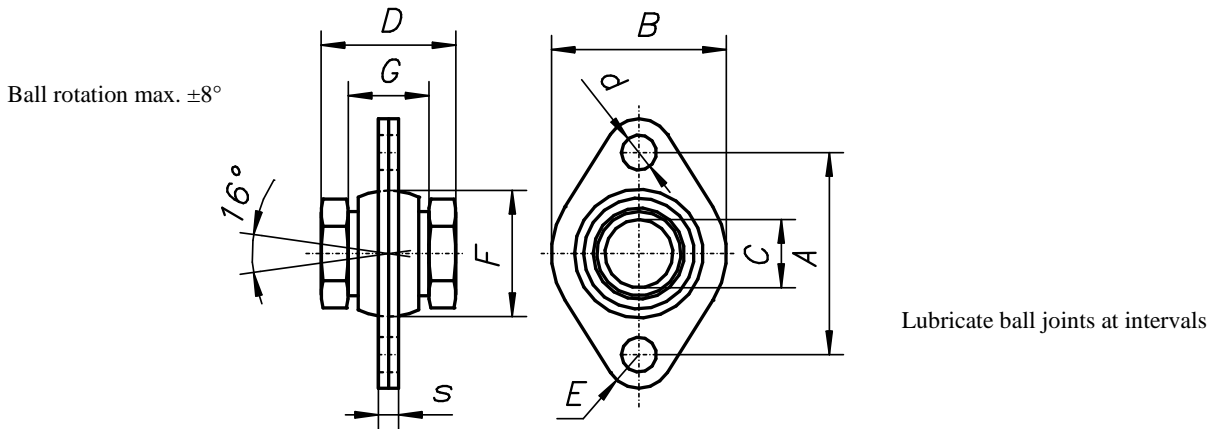


* Length of thread 25 for type 8 only

Type	Stroke	A ≈	B	D1	D2	d1	d2	d3	L1	m	width across flats1	width across flats2	width across flats3	Working load [N] max.			Minimum installation radius
														Stroke	Pressure	Traction	
4	-25	175	100	ø 8	ø 10	M 5	M 10x1	ø 8	14	4	14	8	15	-25	500	500	80
	-50	200	125											-50	500		
	-75	225	150											-75	300		
	-100	250	175											-100	150		
5	-25	175	100	ø 10	ø 12.1	M 5	M 10x1	ø 8	14	4	14	8	15	-25	600	800	80
	-50	200	125											-50	600		
	-75	225	150											-75	400		
	-100	250	175											-100	200		
	-125	275	200											-125	150		
	-150	300	225											-150	150		
	-175	325	250											-175	100		
-200	350	275	-200	100													
6	-25	175	100	ø 11.5	ø 13.6	M 6	M 12x1	ø 10	15	5	17	10	15	-25	700	1000	100
	-50	200	125											-50	700		
	-75	225	150											-75	500		
	-100	250	175											-100	300		
	-125	275	200											-125	200		
	-150	300	225											-150	200		
	-175	325	250											-175	150		
-200	350	275	-200	150													
8	-25	175	100	ø 14	ø 16	M 8	M 14x1	ø 12	15	7	19	13	17	-25	800	1500	150
	-50	200	125											-50	800		
	-75	225	150											-75	600		
	-100	250	175											-100	400		
	-125	275	200											-125	300		
	-150	300	225											-150	300		
	-175	325	250											-175	250		
-200	350	275	-200	250													

For special constructions or higher payloads, please consult our advisory service.

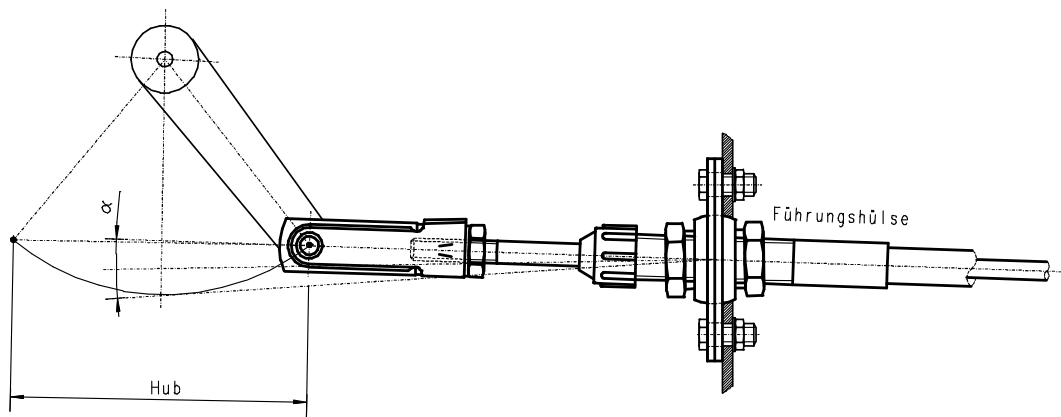
Ball joint



For Type	A	B	C	d	D	F	G	E	s	Width across flats	Order no.
4 & 5	30	26	10.1	5.2	20	19.5	12	5	3	14	1128 001 A24
6	40	30	12.1	6.4	26	25	16	7	4	17	1128 001 B24
8	40	31	14.1	6.4	32	26	16	7	4	22	1128 001 C24

Ball joints are available for all DURAFLEX® types. For models with guiding bushing, they swing out the possible amplitude of the lever in question (see draft below).

Material: Ball CuZn40Al2, ball socket CuZn37F44

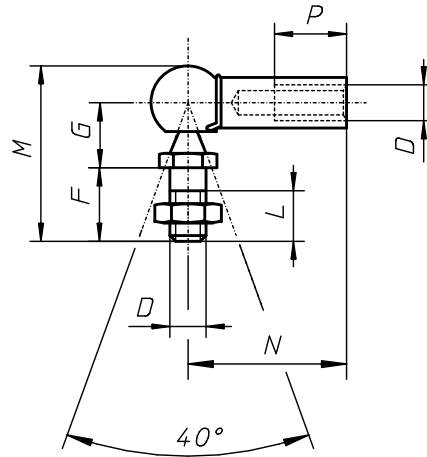


Assembly instruction:

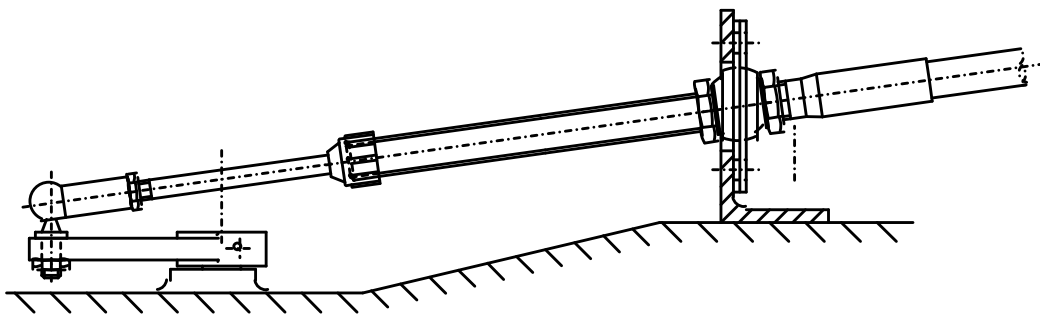
The position of the ball joint at the abutment should be mediated with the lever amplitude. Angle amplitude of the guiding bushing = $\alpha/2$, but not more than $\alpha = \pm 8^\circ$ (see draft).

Secure ball joint of the guiding bushing as far to the back of the thread end as possible, to achieve the least possible out swing.

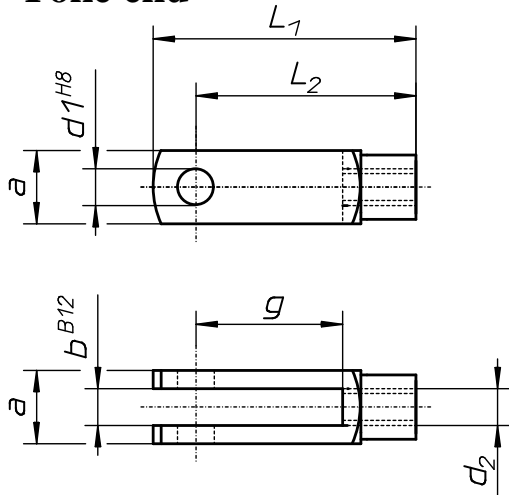
Angle joint



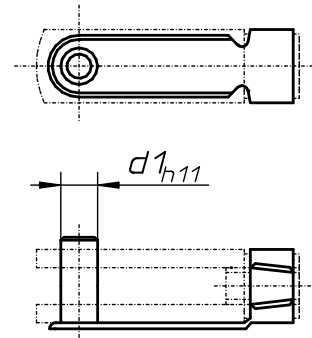
For Type	D	F	G	L	M	N	P	Order no.
4 & 5	M5	10.2	9	7	25.2	22	10.2	1750 001 A10
6	M6	12.5	11	8	30.2	25	11.5	1750 001 B10
8	M8	16.5	13	12	39.5	30	14	1750 003 B10



Yoke end

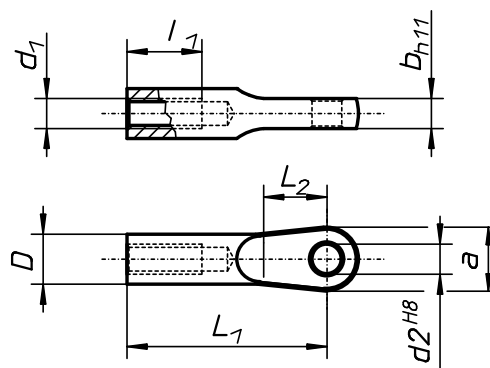


ES pins



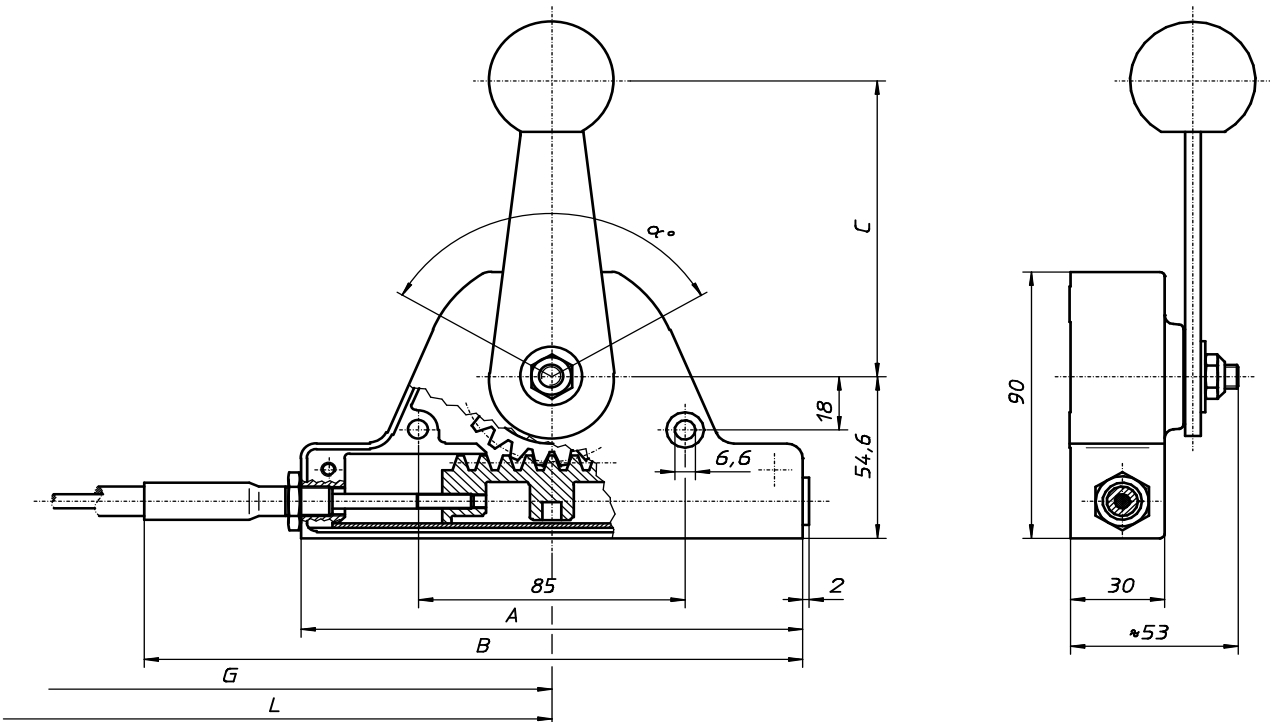
For Type	a	b	d ₁	d ₂	g	L ₁	L ₂	Yoke end (DIN 71752)			ES-Pin	
								Order desc.	Order no. without ES pins.	Order no. with ES pins.	Order desc.	Order no.
4 & 5	10	5	5	M5	10	26	20	G 5x10	1741 001 A10	1741 101 A10	ESN01 5x10	1742 001 A10
								G 5x20	1741 002 A10	1741 102 A10	ESN01 5x20	1742 002 A10
6	12	6	6	M6	12	31	24	G 6x12	1741 001 B10	1741 101 B10	ESN01 6x12	1742 001 B10
								G 6x24	1741 002 B10	1741 102 B10	ESN01 6x24	1742 002 B10
8	16	8	8	M8	16	42	32	G 8x16	1741 005 B10	1741 105 B10	ESN01 8x16	1742 003 B10
								G 8x32	1741 007 B10	1741 107 B10	ESN01 8x32	1742 004 B10

Ring eye



For Type	a	b	d ₁	d ₂	D	l ₁	L ₁	L ₂	Order no.
4 & 5	10	5	M5	5	8	15	35	10	1023 001 A14
6	12	6	M6	6	10	20	40	8	1023 001 B14
8	16	8	M8	8	12	20	46	14	1023 027 B14

Control lever



Types available:

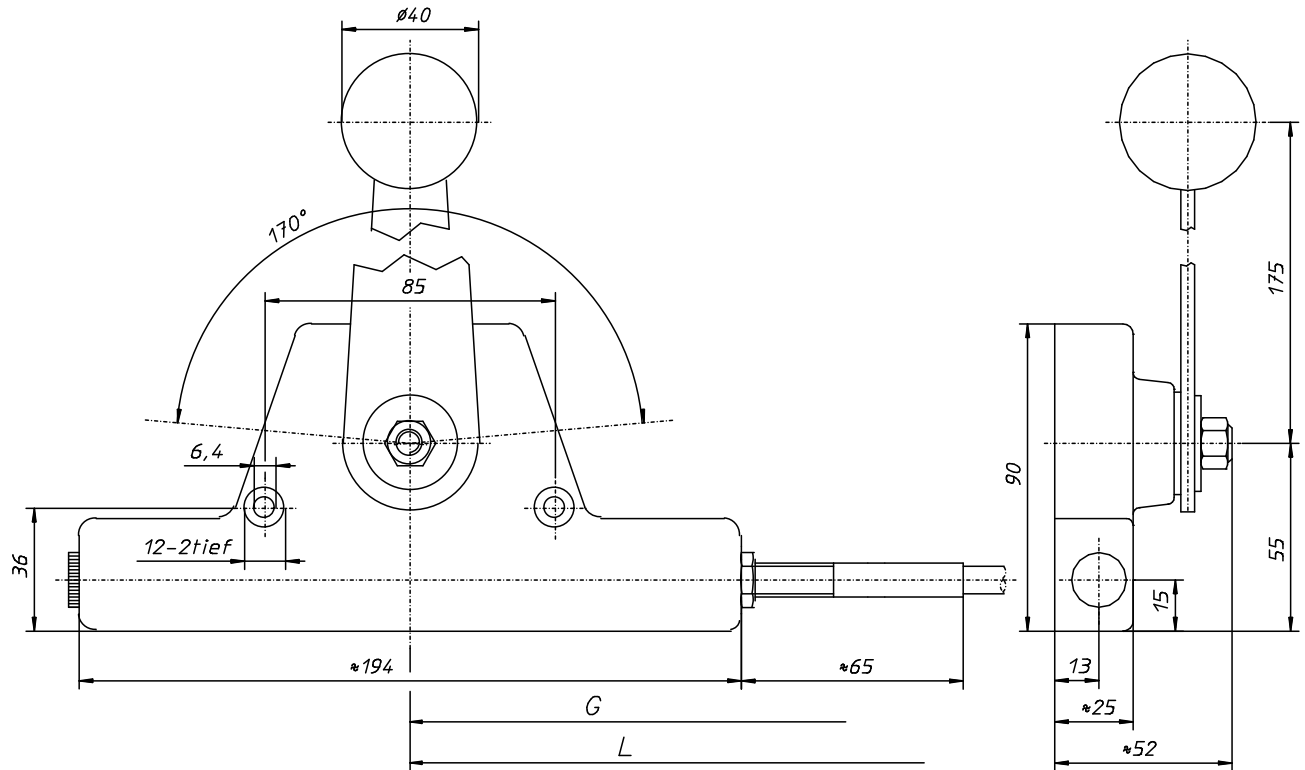
- Fingertip control, with and without lock
- Assembly as single or double control lever
- Right, left or both sided connections possible
- Slewing range of lever can be relocated as desired
- Ball stop also available

Technical data:

- Steeple adjustment of friction lock
- Model with free-wheel lock is self-locking up to 300 N
- Payload for push and pull functions max. 800 N
- Vibration-safe and dust-protected
- Die-cast housing; steel parts are zinc coated

For Type	Stroke Up to	Order Number			A	B	C	i	α
		Finger-tip control	Friction lock	Free-wheel lock					
4 & 5	60	3860 001 K02	3860 021 K02	3861 001 K02	160	215	100	1:3.5	120°
	80	3880 001 K02	3880 021 K02	3881 001 K02	195	275	175	1:6	160°
6	60	3860 004 K02	3860 024 K02	3861 004 K02	160	215	100	1:3.5	120°
	80	3880 004 K02	3880 024 K02	3881 004 K02	195	275	175	1:6	160°
8	60	3860 005 K02	3860 025 K02	3861 005 K02	160	215	100	1:3.5	120°
	80	3880 005 K02	3880 025 K02	3881 005 K02	195	275	175	1:6	160°

Control lever with friction lock



Types available:

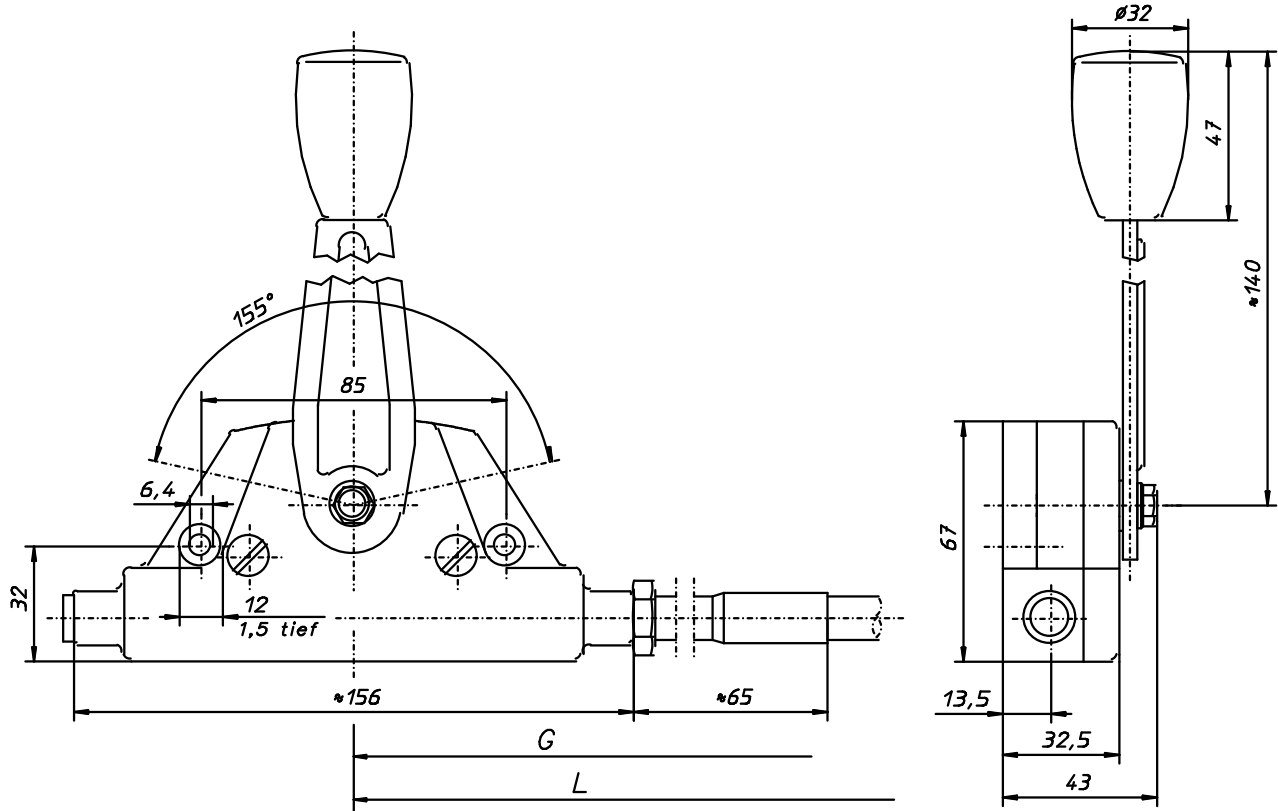
- Assembly as single or double control lever
- Right, left or both sided connections possible
- Slewing range of lever can be relocated as desired
- Steeples adjustment of friction lock

Technical data:

- Payload for push and pull functions max. 500 N
- Stroke 80 mm
- Transmission gear ratio 1:5
- Vibration-safe and dust-protected
- Die-cast housing; steel parts are zinc coated

For Type	Order number
4 & 5	3842 008 K02
6	3842 010 K02
8	3842 011 K02

Control lever with and without lock



Types available:

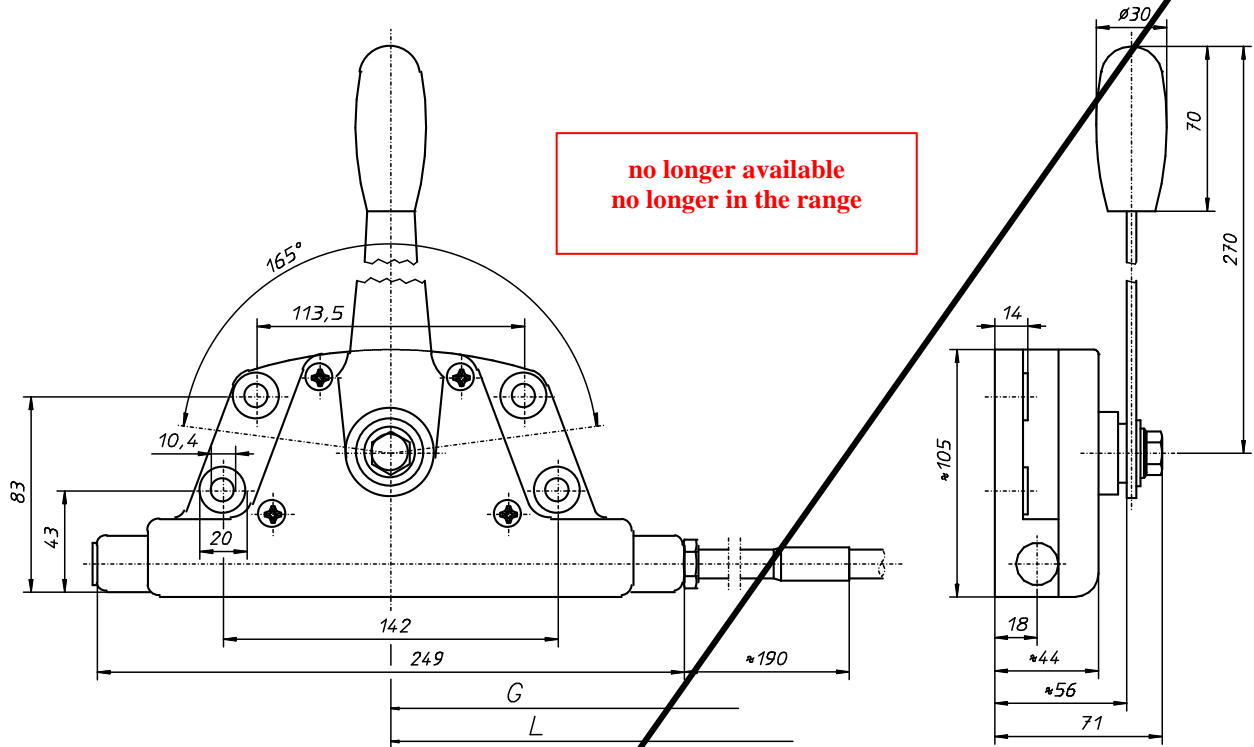
- Assembly as single or double control lever
- Right, left or both sided connections possible
- Slewing range of lever can be relocated as desired

Technical data:

- Type with lock self-locking up to 300 N
- Payload for push and pull functions max. 300 N
- Stroke 60 mm
- Transmission gear ratio 1:5
- Vibration-safe, dustproof and waterproof
- Die-cast housing; steel parts are zinc coated

For Type	Order number	
	without lock	with lock
4 & 5	3842 004 K02	3842 005 K02
6	3842 006 K02	3842 007 K02

Control lever with graduated lock



Types available:

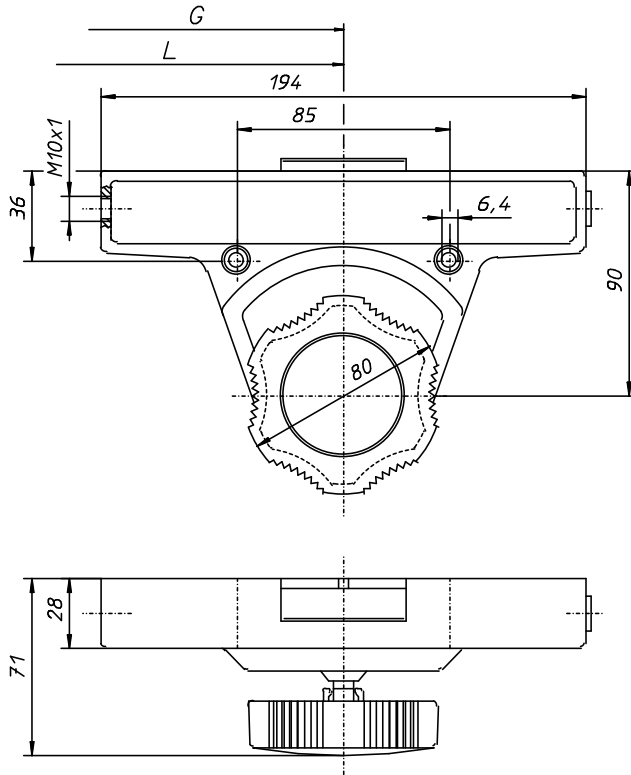
- Assembly as single or double control lever
- Right, left or both sided connections possible
- Slewing range of lever can be relocated as desired

Technical data:

- Model with lock, self-locking up to 500 N
- Payload for push and pull functions max. 500 N
- Stroke 100 mm (graduated locking 3.5 mm)
- Transmission gear ratio 1:7
- Vibration-safe, dustproof and waterproof
- Die-cast housing; steel parts are zinc coated

Model	Order no.
without lock	3845 001 K00
with lock	3845 003 K00

Step-by-step control lever (with safety area)



Types available:

- Connection possible to the left or right
- Connectable to DURAFLEX® types 4 and 5

Technical data:

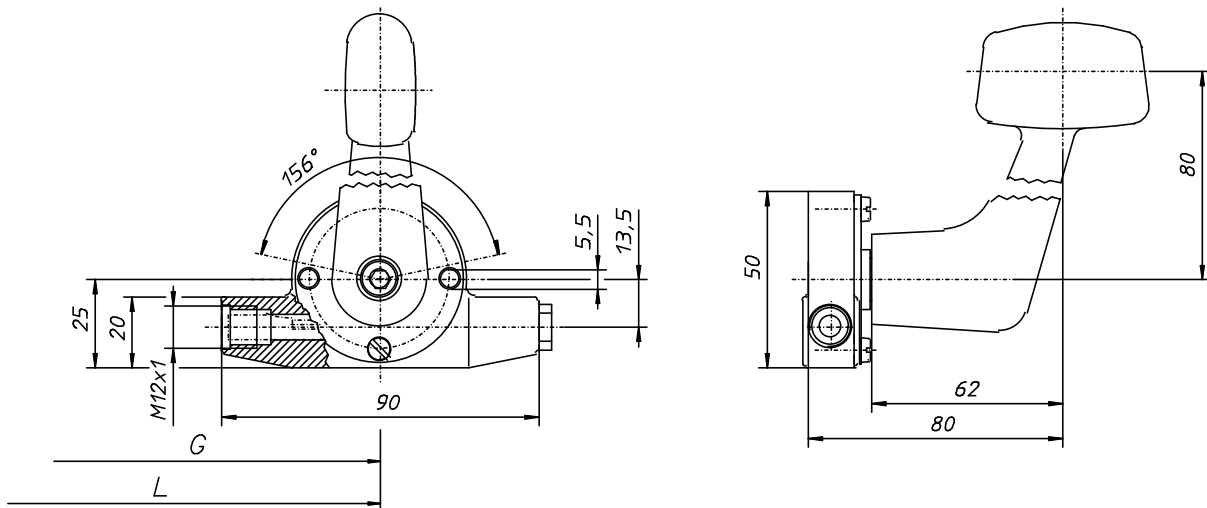
- Total stroke 90 mm
- Stroke by turning handle 60 mm*
- Safety area 30 mm stroke
(only possible from receiving side)
Use e.g. for rear power stroke
- Payload max. 500 N
- Housing and handle made from fibre-glass reinforced polyamide

* (only possible in steps, since transmission-conditioned repeated overlapping is required)

Order no.

3842 079 K01

Toothed transmission gear rack



Technical data:

- Payload max. 400 N
- Max. Stroke 34 mm
- Transmission gear ratio 1:6.4
- Hand lever made from polyamide
- Housing made from cast aluminium

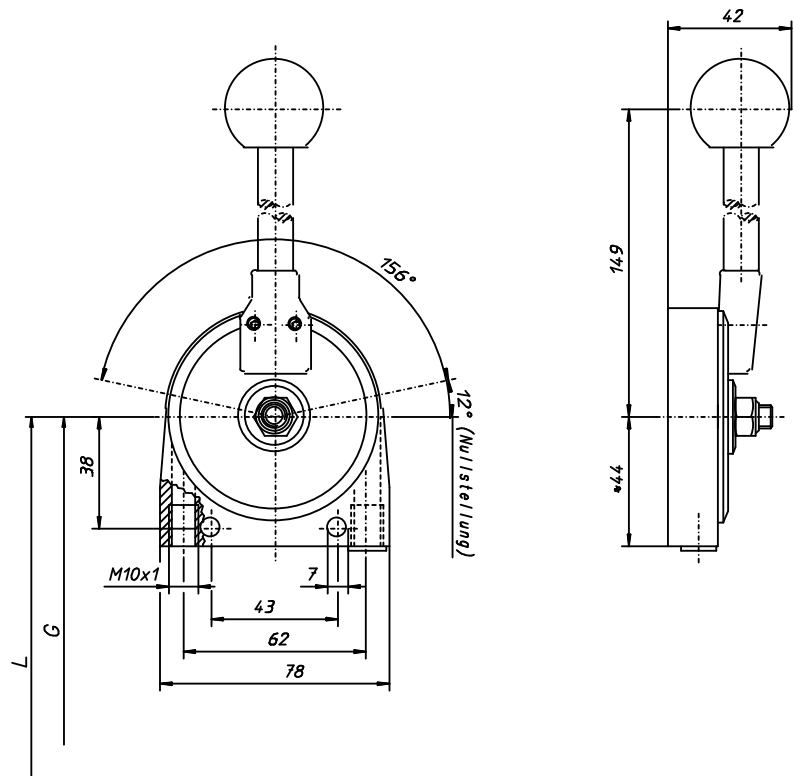
Types available:

- Right or left connection
- Connection to DURAFLEX® types 4 and 5 or cable pull
- Use e.g. as accelerator throttle control

Order no.

3858 100 K02

Regulator lever with friction lock



Types available:

- Right or left connection
- Connection to type 4 or cable pull
- Use e.g. as accelerator throttle control

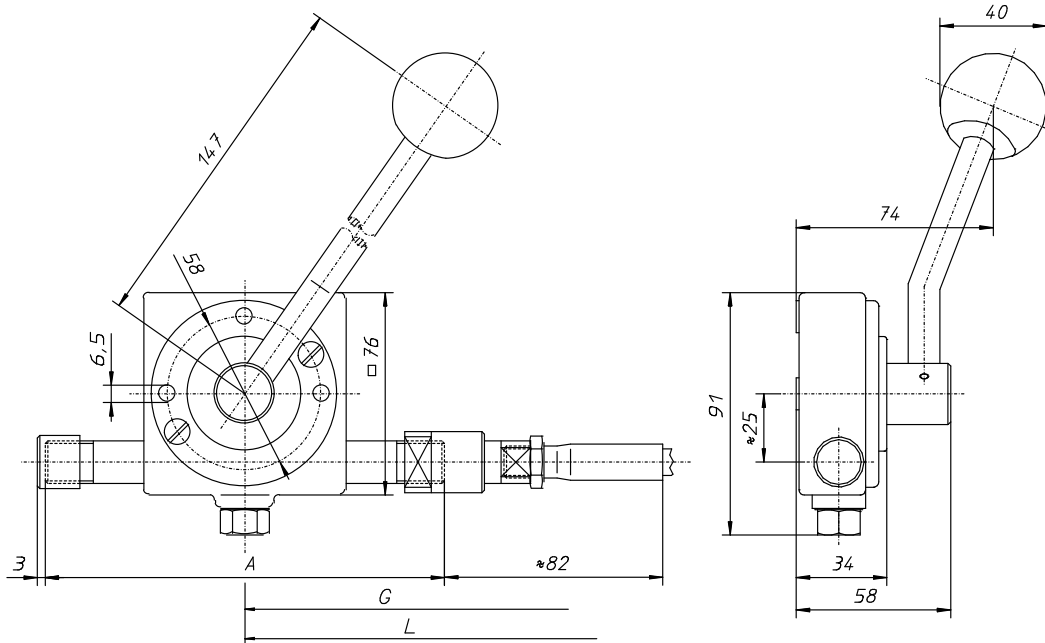
Technical data:

- Adjustable friction lock
- Max. stroke 80 mm (stroke limitation possible)
- Transmission gear ratio 1:4.5
- Splash-proof
- Die-cast zinc housing

Order no.

3842 295 K04

Gear rack box type 035 (Transmission box model)

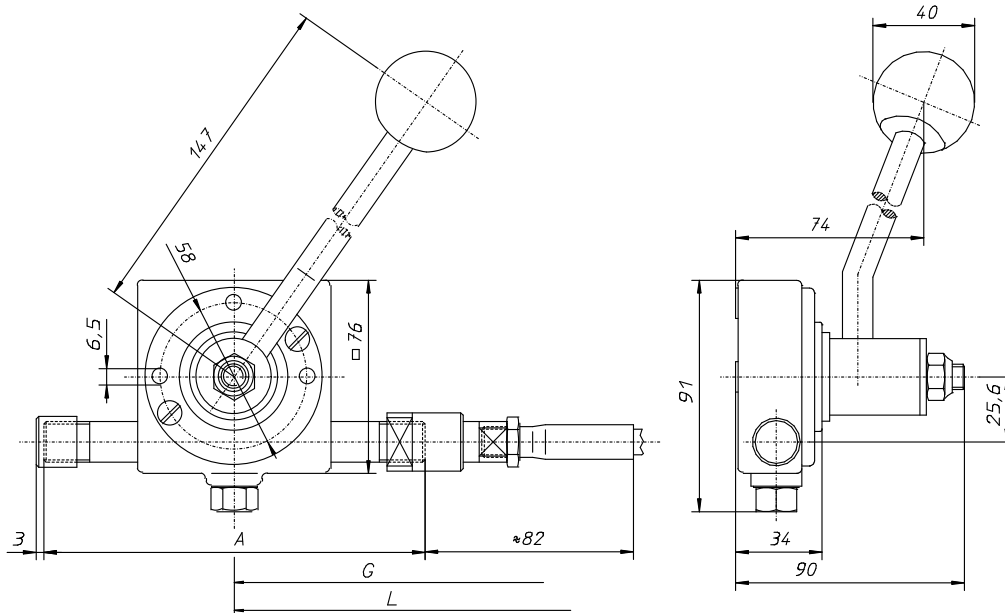


The gear rack box 035 model "transmission box" is a universally adjustable transmission element with a max. Stroke of 150 mm. Lever amplitude of 2.48° corresponds to 1 mm stroke. (Special types with 4 connections, different lever lengths and push-in fishplate are also possible.)

Order no. for standard models				
Stroke	A	Connection for Type 4/ 5	Connection for Type 6	Connection for Type 8
50	150	3935 001 R02	3935 001 S02	3935 001 T02
75	200	3935 002 R02	3935 002 S02	3935 002 T02
100	250	3935 003 R02	3935 003 S02	3935 003 T02
125	300	3935 004 R02	3935 004 S02	3935 004 T02
150	350	3935 005 R02	3935 005 S02	3935 005 T02

Order no. for models with ball stop (indicate stop position when ordering)				
Stroke	A	Connection for Type 4/ 5	Connection for Type 6	Connection for Type 8
50	150	3935 011 R02	3935 011 S02	3935 011 T02
75	200	3935 012 R02	3935 012 S02	3935 012 T02
100	250	3935 013 R02	3935 013 S02	3935 013 T02
125	300	3935 014 R02	3935 014 S02	3935 014 T02
150	350	3935 015 R02	3935 015 S02	3935 015 T02

Gear rack box type 035 with friction lock (transmission box model)

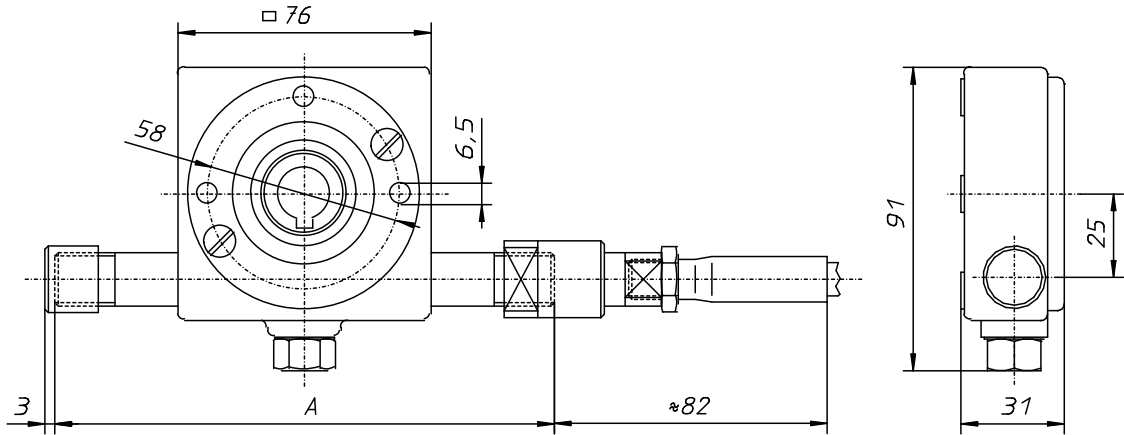


The gear rack box 035 model "**Transmission box with friction lock**" is a universally adjustable transmission element with an infinitely variable friction lock and a max. Stroke of 150 mm. The max. hold of the friction lock is 300N. Lever amplitude of 2.48° corresponds to 1 mm stroke. (Special types with 4 connections, different lever lengths and push-in fishplates are also possible).

Order no. for models with friction lock				
Stroke	A	Connection for Type 4/ 5	Connection for Type 6	Connection for Type 8
50	150	3935 191 R02	3935 191 S02	3935 191 T02
75	200	3935 192 R02	3935 192 S02	3935 192 T02
100	250	3935 193 R02	3935 193 S02	3935 193 T02
125	300	3935 194 R02	3935 194 S02	3935 194 T02
150	350	3935 195 R02	3935 195 S02	3935 195 T02

Order no. for models with friction lock and ball stop (indicate stop position when ordering)				
Stroke	A	Connection for Type 4/ 5	Connection for Type 6	Connection for Type 8
50	150	3935 196 R02	3935 196 S02	3935 196 T02
75	200	3935 197 R02	3935 197 S02	3935 197 T02
100	250	3935 198 R02	3935 198 S02	3935 198 T02
125	300	3935 199 R02	3935 199 S02	3935 199 T02
150	350	3935 200 R02	3935 200 S02	3935 200 T02

Gear rack box type 035 (receiver box type)

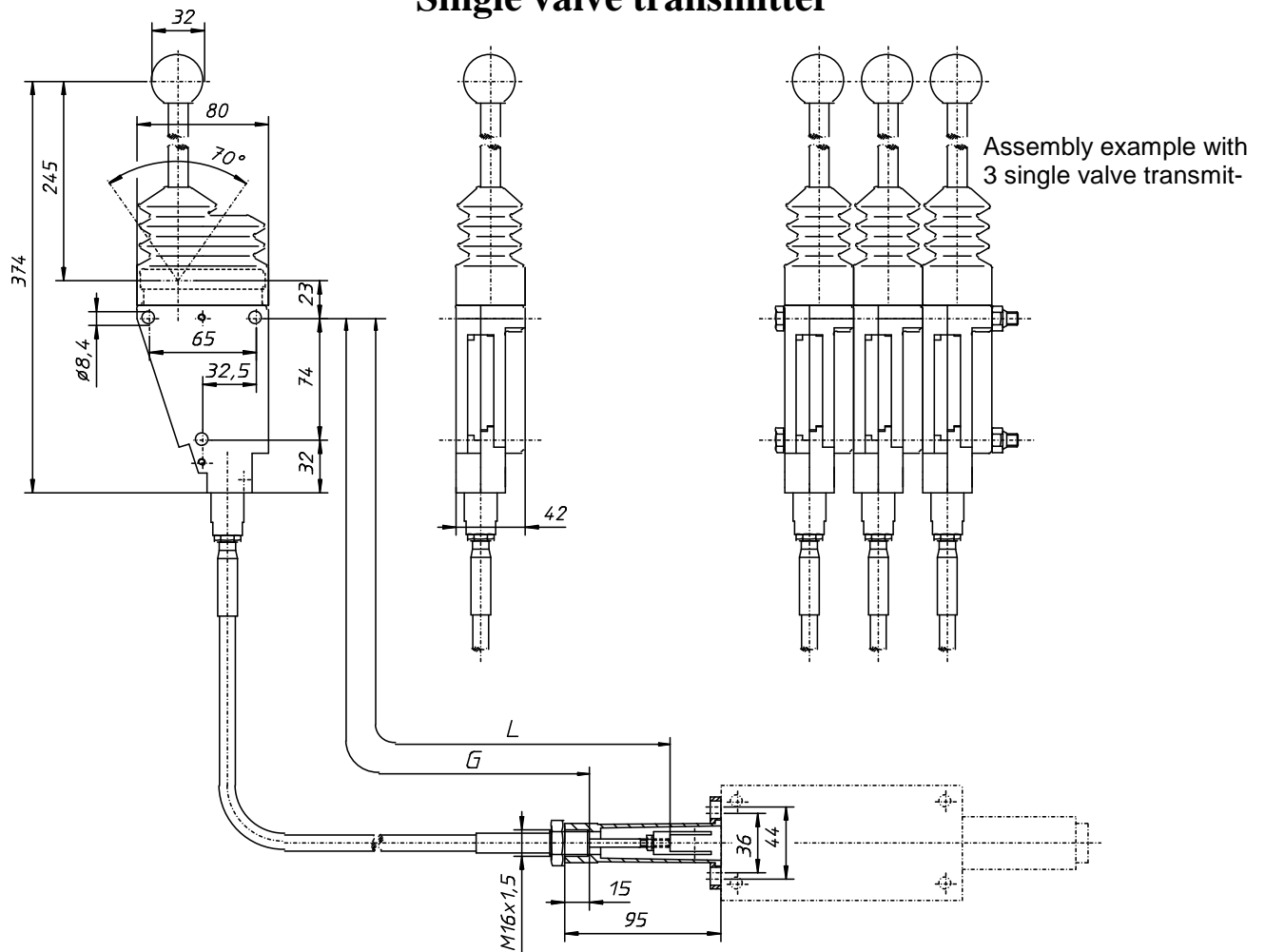


The gear rack box 035 model "receiver box" largely corresponds to the transmission box model. Drilled pinion hole diameter: Ø14mm (specially drilled diameters are available on request)

Order no. for standard models				
Stroke	A	Connection for type 4/5	Connection for type 6	Connection for type 8
50	150	3935 051 R02	3935 051 S02	3935 051 T02
75	200	3935 052 R02	3935 052 S02	3935 052 T02
100	250	3935 053 R02	3935 053 S02	3935 053 T02
125	300	3935 054 R02	3935 054 S02	3935 054 T02
150	350	3935 055 R02	3935 055 S02	3935 055 T02

Order no. for models with ball stop (indicate stop position when ordering)				
Stroke	A	Connection for type 4/5	Connection for type 6	Connection for type 8
50	150	3935 041 R02	3935 041 S02	3935 041 T02
75	200	3935 042 R02	3935 042 S02	3935 042 T02
100	250	3935 043 R02	3935 043 S02	3935 043 T02
125	300	3935 044 R02	3935 044 S02	3935 044 T02
150	350	3935 045 R02	3935 045 S02	3935 045 T02

Single valve transmitter



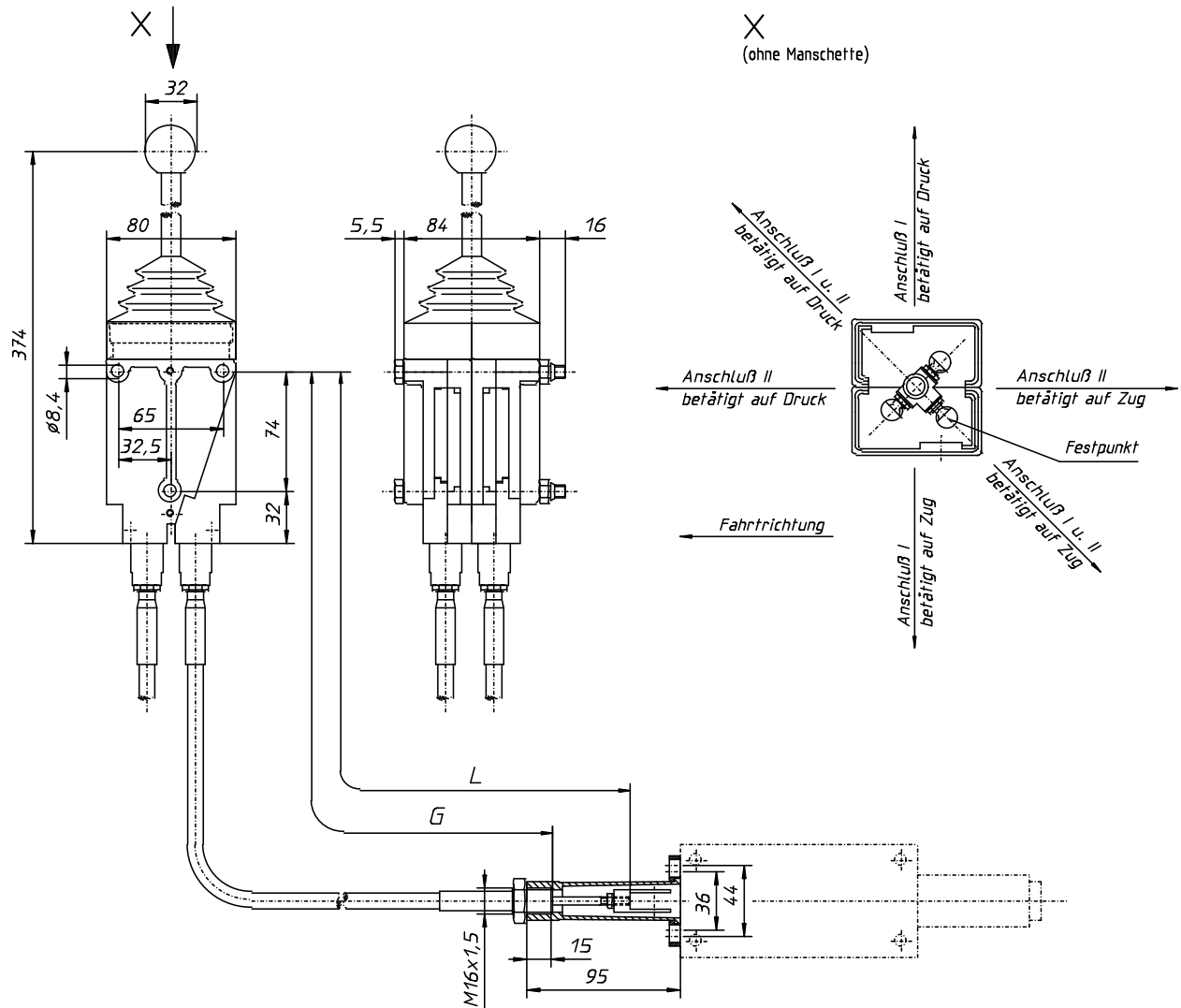
Valve transmission with the corresponding remote control allows the smooth and easy control of hydraulic valves, independently from their installation position in the vehicle or engine. The max. stroke is 40 mm (± 20 mm). The stroke neutral position is fixed by spring resistance. Installation can be carried out singly or as a block of several transmitters (see assembly example). Special models, such as e.g. different lever lengths, are possible on request.

The connection bell on the valve guarantees simple, space-saving attachment to the remote control and renders costly abutment unnecessary.

Note: This transmitter can also be used when a spring-supported central (neutral) position is needed.

For type	Order no.	
	Stroke 30 mm i=1:9	Stroke 40 mm i=1:6.6
4 & 5	3846 001 R01	3846 002 R01
6	3846 001 S01	3846 002 S01

Double Valve Transmitter



Advantages

- Smooth and easy control of 2 hydraulic valves with a single lever
- Simple and secure space-saving attachment of remote control, rendering costly abutment unnecessary
- Functions independently from the installation position
- Possible combination of 2 double valves (corner moulding of lever stick recommended)

Technical Data:

- Stroke max. 30 mm (± 15 mm)
- Stroke central position (neutral position) fixed by spring resistance

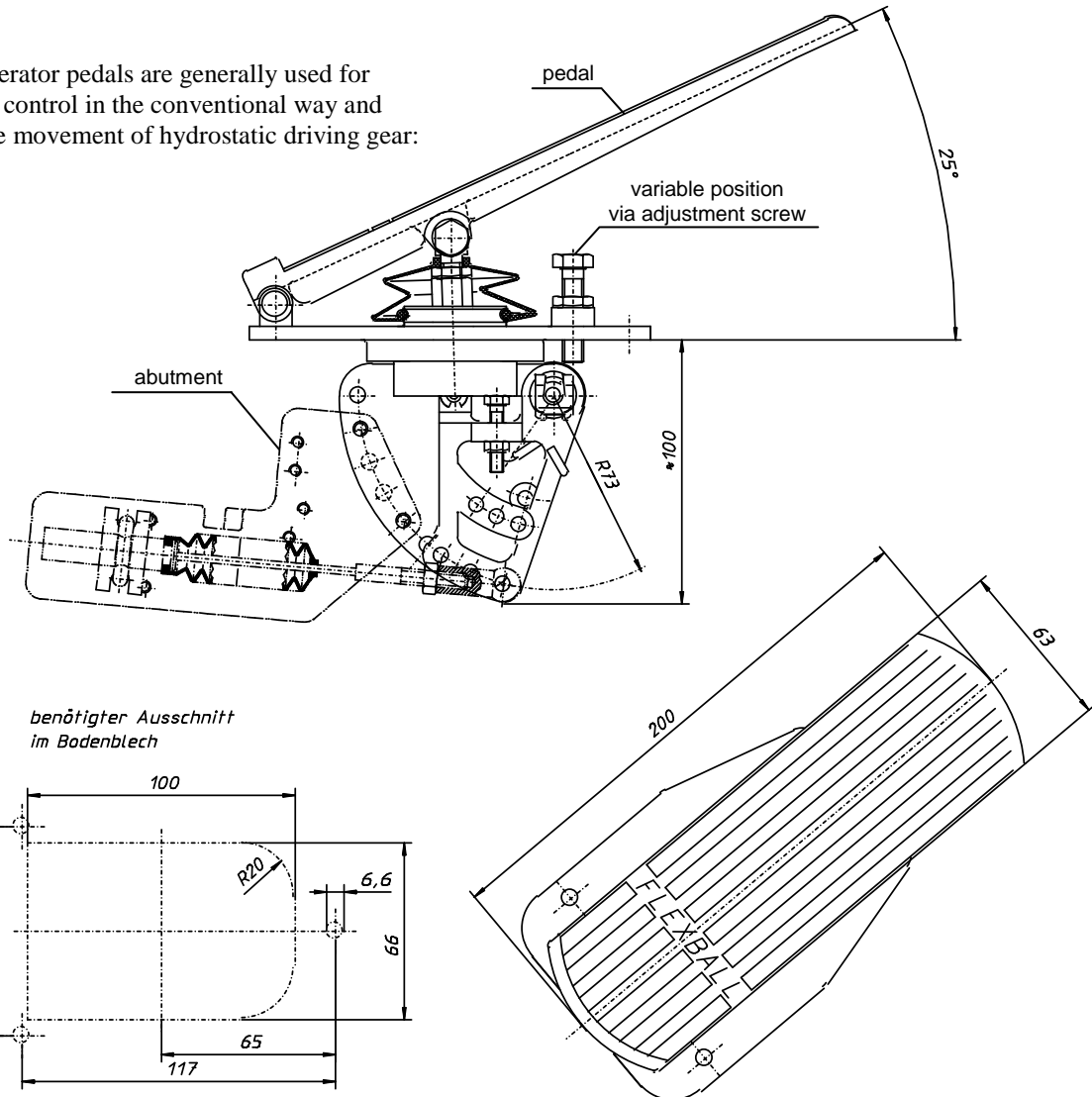
Note

This transmission box can be used at times when it is of advantage to control two functions with one hand at the same time (for example 2 hydrostatics for a crawler device).

For Type	Order no.
4 & 5	3846 003 R01
6	3846 003 S01

Accelerator pedal

Accelerator pedals are generally used for speed control in the conventional way and for the movement of hydrostatic driving gear:



Technical data:

- Stroke according to pedal and stop position max. 70 mm
- Active line of connected remote controls firmly position able at 360° to the direction of movement (pedal)
- Incline of abutment can be relocated opposite the base plate
- Connection to DURAFLEX® types 4, 5, 6 and pull cable

Supplementary accessories:

- Push- or pull-operated accelerator hand control (chosen number of rpm is sustained)

Note

The requirements of the ergonomics standardizing body were carefully considered during construction, to guarantee a high degree of fatigue-free operation.

The choice of abutment is dependent on the type! Please consult our consulting service.

Order no.

3847 001 K01