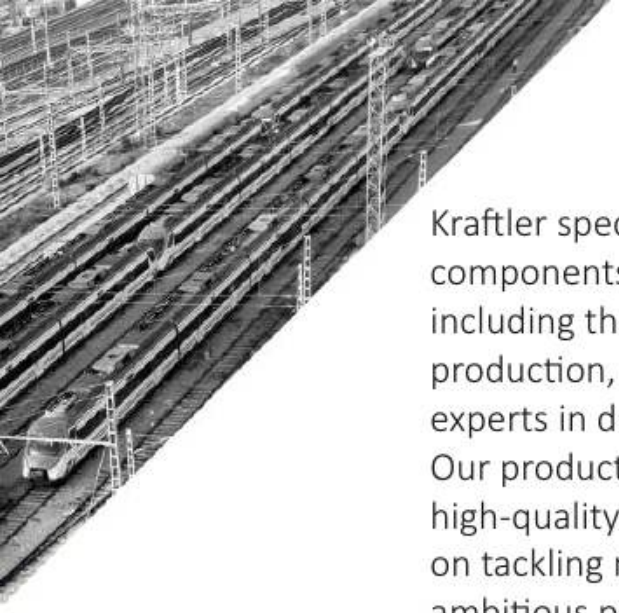
KRAFTLER
DAMPING SYSTEM

HIGH LOADS?
CONTROLLED DAMPING!

KRAFTLER.COM



INTRODUCTION

Kraftler specializes in designing, engineering, and manufacturing components for industries requiring significant energy absorption, including the railway, heavy engineering, automotive, oil production, shipbuilding, mining, and machinery sectors. We are experts in damping systems and energy absorption technologies. Our production capabilities enable us to develop and manufacture high-quality products that meet international standards. We thrive on tackling non-standard challenges and eagerly take on the most ambitious projects.

Polymer pads are manufactured by unique patented technology

Based on the design features and unique material characteristics, our pads are engineered to withstand extreme loads and resist physical damage. We offer customized design and production of polymer springs tailored to meet each client's specific requirements.

High energy capacity springs

Our products deliver superior performance in temperatures ranging from -60°C to +60°C and provide excellent resistance to chemicals, grease, oils, solvents, and abrasive environments.

DRAFT GEAR PASSENGER RDSO/2017/CG-07

KRAFTLER TCK-20

*patent

- Meets all mandatory standard RDSO/2017/CG-07
- Draw bar angular deviation - horizontal: 6° vertical: 12°
- Weight: 224 kg (mass reduction in progress)

Parameter	Value
Buff energy absorption	20-30 kJ
Draw energy absorption	>8 kJ
Maximum buff force	≤1500 kN
Maximum draw force	≤1300 kN
Stroke on draft	30 mm
Stroke on buff	52 mm
Irreversible energy absorption coefficient	≥0,6
Crash element stroke	190 mm
Crash element energy absorption	360 kJ
Crash element activation force	2000(–200) kN

DRAFT GEAR DIGITAL AUTOMATIC COUPLER

prEN 18171 UIC 522/530/524

KRAFTLER EWS-A-600 CATEGORY A

*patent

- Price-optimized design for cost-efficient DAC upgrades
- Meets all mandatory European standards (prEN 18171, UIC 522/530/524)
- Excellent stability on S-curves and cross-loads – angles γ and β consistently held within ≤1,25°
- Pocket length: 600mm

Parameter	Value
Weight	273 kg (incl. holding plates)
Draw force	≤1000 kN
Buff force	≤2000 kN
Draw energy absorption (dynamic / static)	> 20 / 15,7 kJ at 1000 kN
Stroke on draft	44,5 mm
Buff energy absorption (dynamic / static)	77,8 / 54,2 kJ at 2000 kN
Stroke on buff	110 mm (UIC 524)
Climate conditions	-40° C / +50° C
Tilting test (UIC 524)	γ = 0.84° / β = 0.49°
Standards	Complies with prEN 18171:2025

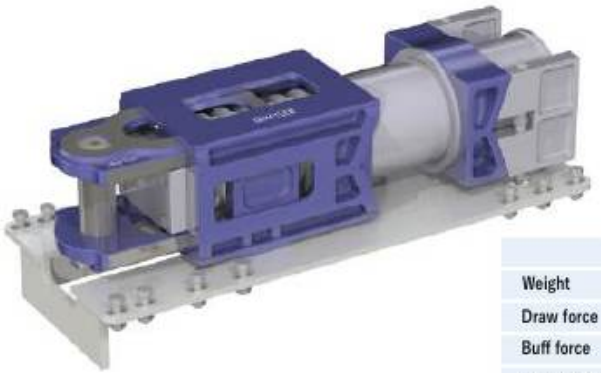
KRAFTLER EWS-A-975 CATEGORY A

*patent

- Price-optimized design for cost-efficient DAC upgrades
- Meets all mandatory European standards (prEN 18171, UIC 522/530/524)
- Excellent stability on S-curves and cross-loads – angles γ and β consistently held within ≤1,25°
- Pocket length: 975mm

Parameter	Value
Weight	309 kg (incl. holding plates)
Draw force	≤1000 kN
Buff force	≤2000 kN
Draw energy absorption (dynamic / static)	> 20 / 15,7 kJ at 1000 kN
Stroke on draft	44,5 mm
Buff energy absorption (dynamic / static)	77,8 / 54,2 kJ at 2000 kN
Stroke on buff	110 mm (UIC 524)
Climate conditions	-40° C / +50° C
Tilting test (UIC 524)	γ = 0.84° / β = 0.49°
Standards	Complies with prEN 18171:2025

KRAFTLER EWS-AX-975 CATEGORY AX



*patent

- High-energy crash module – up to >675 kJ
- Common platform with EWS-A – interchangeable parts
- EU standard compliant – prEN 18171, UIC 522/530/524
- Excellent stability on S-curves and cross-loads – angles γ and β consistently held within ≤1,25°
- Pocket length: 975mm

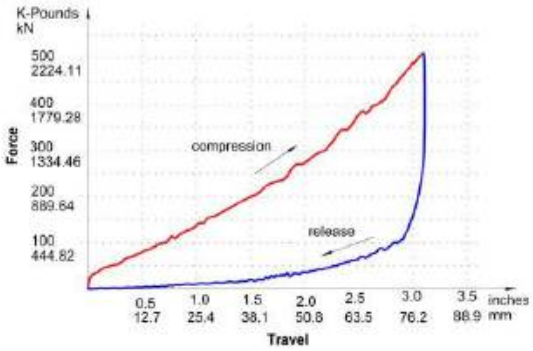
Parameter	Value
Weight	400 kg (incl. holding plates)
Draw force	≤1000 kN
Buff force	≤2000 kN
Draw energy absorption (dynamic / static)	> 20 / 15,7 kJ at 1000 kN
Stroke on draft	44,5 mm
Reversible buff energy absorption (dynamic / static)	77,8 / 54,2 kJ at 2000 kN
Buff energy absorption	>675 kJ incl. reversible and irreversible energy absorption
Stroke on buff	350 mm (UIC 524)
Climate conditions	-40° C / +50° C
Tilting test (UIC 524)	γ = 0.84° / β = 0.49°
Standards	Complies with prEN 18171:2025

Draft gear KP-80.2 AAR M901G and TB/T 1961-2023

*patent

1. Maximum travel 3,27 inches / 83 mm.
2. Maximum end force <2500 kN.
3. High capacity.
4. Excellent durabllity, due to design features of the housing.
5. Can be used in harsh environments and requires no additional maintenance.
6. Low prime cost.

Drop hammer force-stroke graph



Dimensions

Characteristics

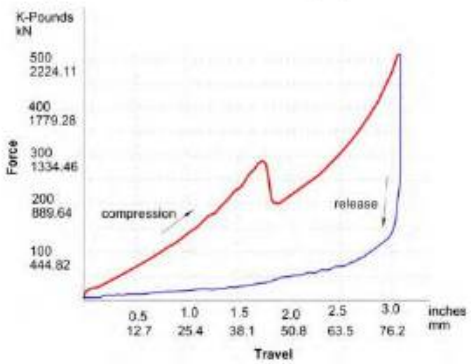
Official rating travel	3,27 inches / 83 mm
Official rating capacity	>61 955 foot pounds / 84 kJ
Weight	382 pounds / 142 kg
Preshortened for standard 24-5/8" pocket	A=22 inches / 559 mm
Assembled to free height	B=22-11/16 inches / 576mm

Draft gear TTX-80 AAR M901E

*patent

1. Maximum travel 3,27 inches / 83 mm.
2. The lightest M-901E draft gear.
3. Highest capacity M-901E draft gear.
4. Excellent durability, due to design features of the housing.
5. Interchangeable with standard (AAR Rule 21) draft gears.
6. Can be used in harsh environments and requires no additional maintenance.
7. Low prime cost.

Drop hammer force-stroke graph



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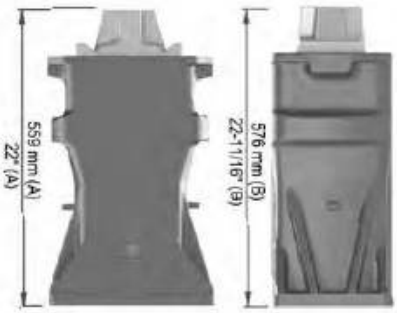


Characteristics

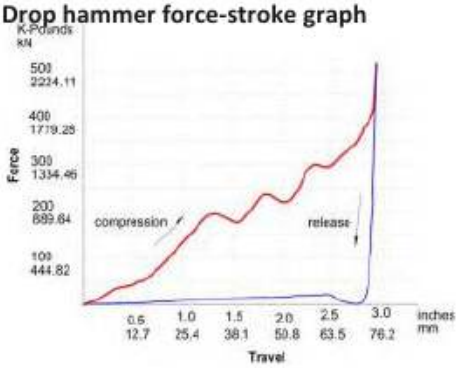
Official rating travel	3,07 inches / 78 mm
Official rating capacity	≥45 000 foot pounds / 61 kJ
Weight	255 pounds / 115,6 kg
Preshortened for standard 24-5/8" pocket	A=22 inches / 559 mm
Assembled to free height	B=22-11/16 inches / 576 mm

Draft gear KPA-81

AAR M901E- All steel

1. Maximum travel 3,27 inches / 83 mm.
2. The lightest M901E All-steel draft gear.
3. Low production cost.
4. High capacity.
5. Excellent durability, due to enlarged space of working surfaces of the friction clutch.
6. High reliability through the application of U-shaped profile of movable plates, with high fracture resistance.
7. New high-strength construction of housing.
8. Interchangeable with standard (AAR Rule 21) draft gears.
9. Can be used in harsh environments and requires no additional maintenance.

Drop hammer force-stroke graph



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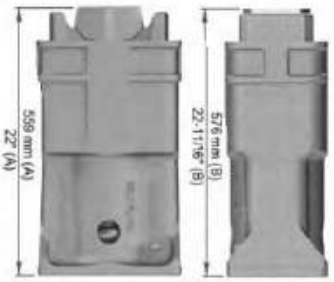


*patent

Characteristics

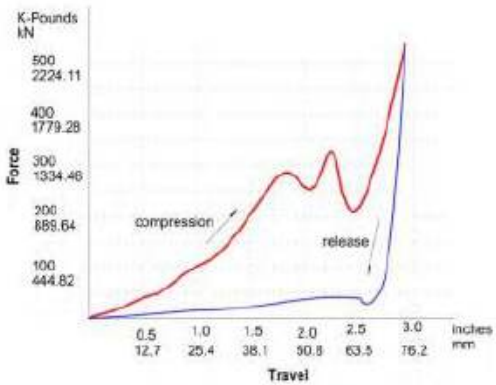
Official rating travel	2,91 inches / 73,9 mm
Official rating capacity	≥45 900 foot pounds / 62,2 kJ
Weight	319 pounds / 144,6 kg
Preshortened for standard 24-5/8" pocket	A=22 inches / 559 mm
Assembled to free height	B=22-11/16 inches / 576mm

Draft gear KHT-82

AAR-M901E-Polymer spring inside

1. Maximum travel 3,27 inches / 83 mm.
2. Lightweight M-901E draft gear.
3. High capacity.
4. Excellent durability, due to design features of the housing.
5. Interchangeable with standard (AAR Rule 21) draft gears.
6. Can be used in harsh environments and requires no additional maintenance.
7. Low prime cost.

Drop hammer force-stroke graph



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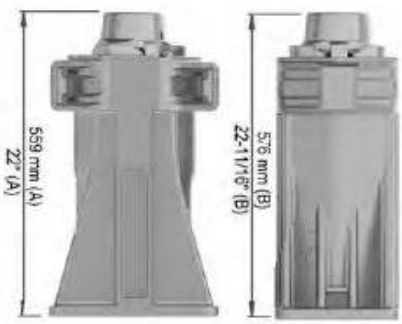
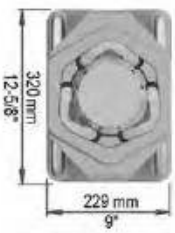




*patent

Characteristics

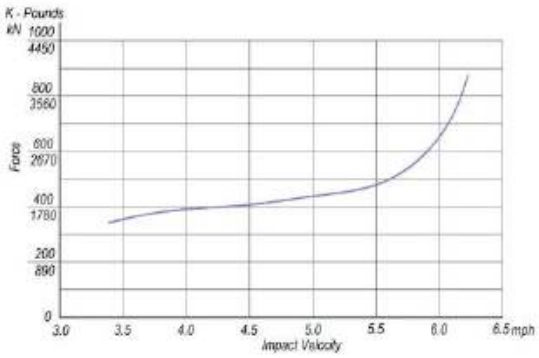
Official rating travel	2,90 inches / 73,6 mm
Official rating capacity	≥45 600 foot pounds / 61,8
Weight	kJ 256 pounds / 116 kg
Preshortened for standard 24-5/8" pocket	A=22 inches / 559 mm
Assembled to free height	B=22-11/16 inches / 576mm

Draft gear KMT-82G AAR M901G- All steel

*patent

1. Low cost, thanks to the use of two main springs.
2. High capacity due to increased spring height.
3. Excellent durability, due to enlarged space of working surfaces of the friction clutch.
4. High reliability through the application of U-shaped profile of movable plates, with high fracture resistance.
5. New high-strength construction of housing.

Drop hammer force-stroke graph



Dimensions

Characteristics

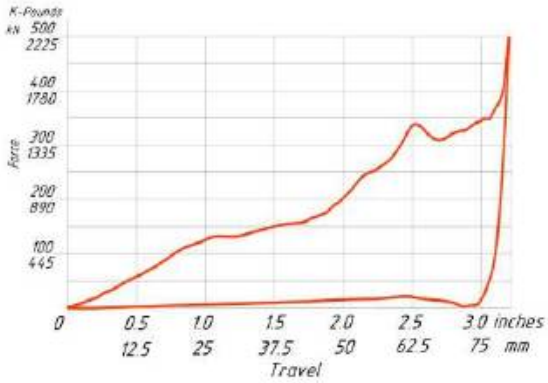
Official rating travel	3-1/4 inches / 82 mm
Rating impact velocity	5,6 mph / 2,5 m/s
Weight	390 pounds / 177 kg
Preshortened for standard 24-5/8" pocket	A=22 inches / 559 mm
Assembled to free height	B=22-11/16 inches / 576 mm

Draft gear KMT-82E AAR M901E- All steel

*patent

1. Low cost, thanks to the use of two main springs.
2. High capacity due to increased spring height.
3. Excellent durability, due to enlarged space of working surfaces of the friction clutch.
4. High reliability through the application of U-shaped profile of movable plates, with high fracture resistance.
5. New high-strength construction of housing.

Drop hammer force-stroke graph

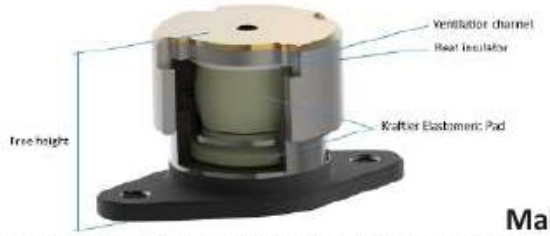


Dimensions

Characteristics

Official rating travel	3,19 inches / 82 mm
Official rating capacity	≥47,820 foot pounds / 65 kJ
Weight	390 pounds / 177 kg
Preshortened for standard 24-5/8" pocket	A=22 inches / 559 mm
Assembled to free height	B=22-11/16 inches / 576 mm

Constant contact side bearings



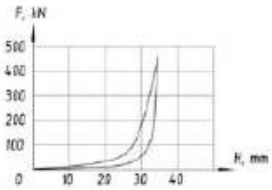
Constant contact side bearings are made of two types - long-stroke type A, for installation on high-speed wagons, and short-stroke type B, for installation on wagons operating at low speeds.

Main features

In comparison with the existing Constant contact side bearings, all excessive impact loads on the bogie bolster and the car body are smoothed. At the same time, the closure of the cap with the housing does not occur, so the elastomeric pad is protected from large loads and capable of smoothing over loads up to 460kN without any damages **(patent)**.

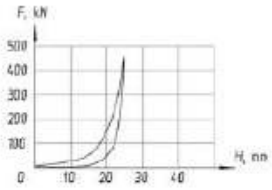
Protected from temperature fluctuations, associated with climatic conditions or with heating during the working process. Heating or cooling of Constant contact side bearings doesn't lead to changes in its overall height, which is important for ensuring high stability of its operation under alternating cyclic loads

TYPE A



Type a	
Free height	144 ± 3 mm
Travel	19,1 ± 1 mm
End force (at the end of travel)	27 kN
Additional travel	minimum +10 mm
End force (at the end of additional travel)	300 kN
Max. force	460 kN

TYPE B



Type b	
Free height	134-2 mm
Travel	11,1 ± 1 mm
End force (at the end of travel)	23 kN

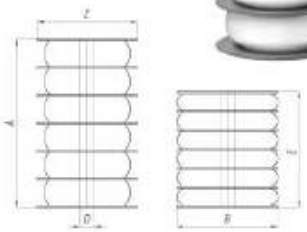
Buffer spring KT-40 CATEGORY A

Unique quality advantages:

For use in freight, special rail cars and locomotives. Buffer springs fully comply with the requirements of the EN 15551 standard.

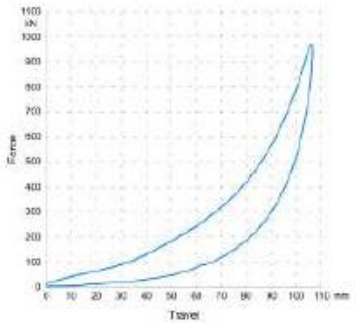
- Excellent energy absorption
- Incredible resistance to extreme loads and physical damaging
- Sustainable performance in temperatures range from -50° C to +50° C
- Superior resistance to the most aggressive environments
- Durable, sustainable and recyclable

Dimensions



A: Installed height	309 ± 2 mm
B: Diameter of pads at full stroke	165 - 1 mm
C: Diameter of intermediate plate	165 - 1 mm
D: Diameter of center hole	88 ± 0 mm
E: Height at full stroke	204 ± 2 mm

Static force-stroke graph



Energy absorption (static)	> 26 kJ
Damping	> 50 %
Pre-tension force	≥ 16 kN
Max. end force	≤ 1000 kN
Stroke	≤ 105 mm
Weight	8,1 kg

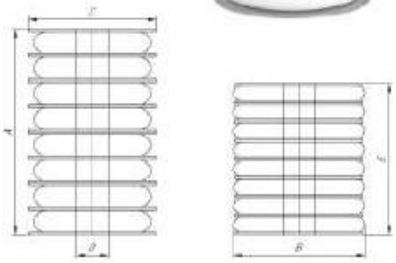
DAC spring KP-70 FREIGHT / 80 kJ (DYNAMIC)

Unique quality advantages:

For use in digital automatic coupling systems of freight cars. Comply comply with the requirements of the EN 15551 standard.

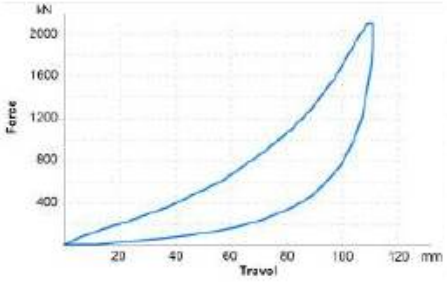
- Excellent energy absorption
- Incredible resistance to extreme loads and physical damaging up to 2000kN
- Sustainable performance in temperatures range from -50° C to +50° C
- Superior resistance to the most aggressive environments
- Durable, sustainable and recyclable

Dimensions



A: Installed height	340 ± 2 mm
B: Diameter of pads at full stroke	240 mm
C: Diameter of intermediate plate	240 - 1 mm
D: Diameter of center hole	60 ± 1 mm
E: Height at full stroke	220 ± 2 mm

Static force-stroke graph



Capacity (static/dynamic)	≥ 65 kJ /80 kJ
Damping	> 60 %
Pre-tension force	≥ 20 kN
Max. end force	≤ 2000 kN
Stroke	110 mm
Weight	19 kg

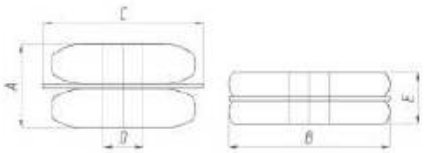
Draw gear spring KT-15 1 MN

Unique quality advantages:

Draw gears are used to absorb the longitudinal loads and tractive forces within a train formation. They are used in locomotives, freight cars, coaches and special rail cars. Draw gear springs fully comply with the requirements of the EN15566 standard.

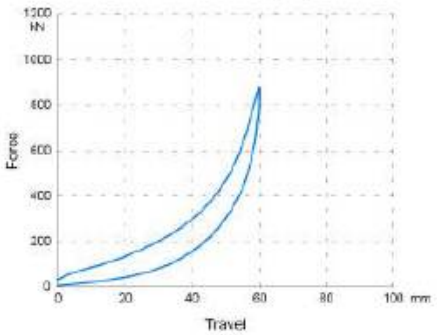
- Excellent energy absorption
- Incredible resistance to extreme loads and physical damaging
- Sustainable performance in temperatures range from -50° C to +50° C
- Superior resistance to the most aggressive environments
- Durable, sustainable and recyclable

Dimensions



A: Installed height	150 ±2 mm
B: Diameter of pads at full stroke	240 ±3 mm
C: Diameter of intermediate plate	240± 2 mm
D: Diameter of center hole	60 ± 0 mm
E: Height at full stroke	90 ± 2 mm

Static force-stroke graph



Energy absorption (static)	> 16 kJ
Damping	> 48 %
Pre-tension force	≥ 24,7 kN
Max. end force	≤ 870,9 kN
Stroke	≤ 60 mm
Weight	≤ 5 kg

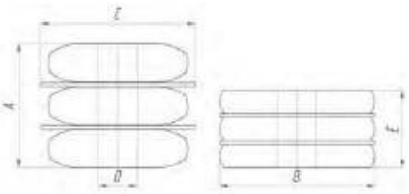
Draw gear spring KT-20 1,5MN

Unique quality advantages:

Draw gears are used to absorb the longitudinal loads and tractive forces within a train formation. They are used in locomotives, freight cars, coaches and special rail cars. Draw gear springs fully comply with the requirements of the EN15566 standard.

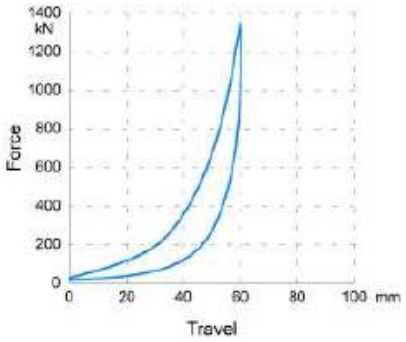
- Excellent energy absorption
- Incredible resistance to extreme loads and physical damaging
- Sustainable performance in temperatures range from -50° C to +50° C
- Superior resistance to the most aggressive environments
- Durable, sustainable and recyclable

Dimensions



A: Installed height	150 ± 2 mm
B: Diameter of pads at full stroke	240 ± 3 mm
C: Diameter of intermediate plate	240 ± 2 mm
D: Diameter of center hole	60 ± 0 mm
E: Height at full stroke	90 ± 2 mm

Static force-stroke graph



Energy absorption (static)	> 23,1 kJ
Damping	> 55 %
Pre-tension force	≥ 15,8 kN
Max. end force	≤ 1340 kN
Stroke	≤ 60 mm
Weight	≤ 5 kg

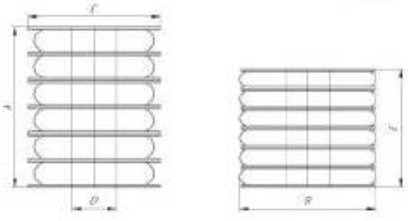
Draw gear spring KP-21 1,5MN

Unique quality advantages:

Draw gears are used to absorb the longitudinal loads and tractive forces within a train formation. They are used in freight cars and special rail cars. Draw gear springs fully comply with the requirements of the EN15566 standard.

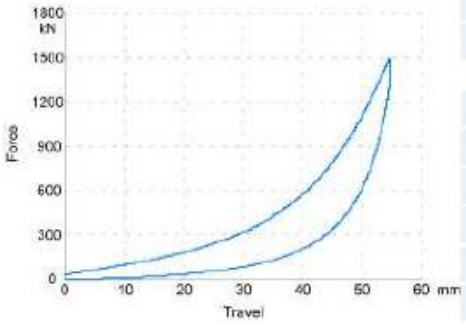
- Excellent energy absorption
- Incredible resistance to extreme loads and physical damaging
- Sustainable performance in temperatures range from -50° C to +50° C
- Superior resistance to the most aggressive environments Durable,
- sustainable and recyclable

Dimensions



A: Installed height	176 ±2 mm
B: Diameter of pads at full stroke	175-1 mm
C: Diameter of intermediate plate	165- 1 mm
D: Diameter of center hole	62 ± 0 mm
E: Height at full stroke	121 ± 2 mm

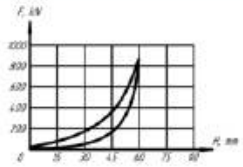
Static force-stroke graph



Energy absorption (static)	> 21 kJ
Damping	> 60 %
Pre-tension force	≥ 20 kN
Max. end force	≤ 1500 kN
Stroke	≤ 55 mm
Weight	7,2 kg

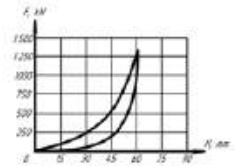
Polymer Springs

KT-15



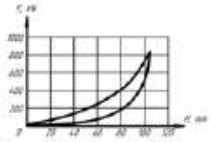
Installing height	150 mm
Stroke	≤60 mm
Pre-tension force	≥ 24,7 kN
Max. End force	~ 870 kN
Energy absorption	> 16 kJ
Damping	> 48 %
Pad Diameter at full stroke	< 240 mm

KT-20



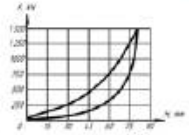
Installing height	150 mm
Stroke	≤60 mm
Pre-tension force	≥ 15,8 kN
Max. End force	~ 1340 kN
Energy absorption	> 23,1 kJ
Damping	> 55 %
Pad Diameter at full stroke	< 240 mm

KT-40



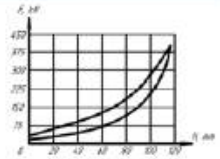
Installing height	309 mm
Stroke	105-5 mm
Pre-tension force	≥ 16 kN
Max. End force	~ 1000 kN
Energy absorption	26 kJ
Damping	50 %
Pad Diameter at full stroke	< 165 mm

HK-73



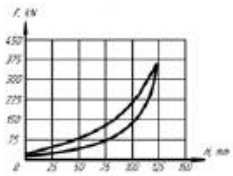
Installing height	276 mm
Stroke	< 78 mm
Pre-tension force	≥ 50 kN
Max. End force	< 1500 kN
Energy absorption	> 36 kJ
Damping	> 50 %
Pad Diameter at full stroke	< 210 mm

KB-36



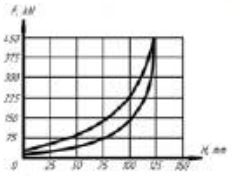
Installing height	378 mm
Stroke	115 mm
Pre-tension force	≥ 30 kN
Max. End force	~ 410 kN
Energy absorption	> 17 kJ
Damping	> 35 %

HTK-653.1



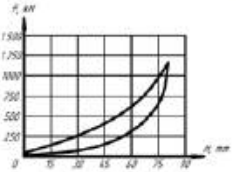
Installing height	351 mm
Stroke	124 mm
Pre-tension force	≥ 20 kN
Max. End force	~ 350 kN
Energy absorption	> 15 kJ
Damping	> 35 %
Pad Diameter at full stroke	< 180 mm

HTK-653.2



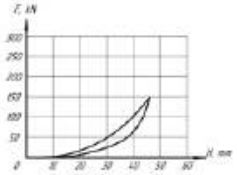
Installing height	351 mm
Stroke	124 mm
Pre-tension force	≥ 20 kN
Max. End force	~ 450 kN
Energy absorption	> 18 kJ
Damping	> 35 %
Pad Diameter at full stroke	180 mm

PA-80



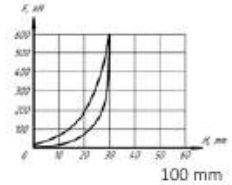
Installing height	330 mm
Stroke	80 mm
Pre-tension force	50 kN
Max. End force	~ 1150 kN
Energy absorption	> 20 kJ
Damping	> 40 %
Pad Diameter at full stroke	200 mm

KP842.3



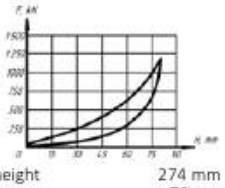
Installing height	197 mm
Stroke	46 mm
Max. End force	~ 150 kN
Energy absorption	> 4 kJ
Damping	> 35 %
Pad Diameter at full stroke	< 140 mm

KT-16



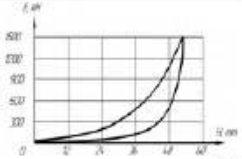
Installing height	100 mm
Stroke	30 mm
Pre-tension force	≥ 22 kN
Max. End force	~ 600 kN
Energy absorption	> 6 kJ
Damping	> 50 %
Pad Diameter at full stroke	< 165 mm

TK-93



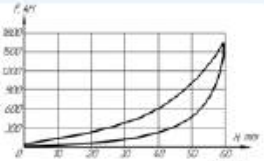
Installing height	274 mm
Stroke	< 76 mm
Pre-tension force	≥ 35 kN
Max. End force	< 1000 kN
Energy absorption	> 20 kJ
Damping	> 40 %
Pad Diameter at full stroke	< 210 mm

KP-20



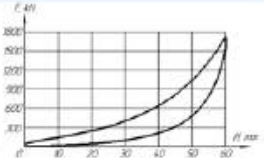
Installing height	163mm
Stroke	≤52mm
Pre-tension force	≥25 kN
Max. End force	≤1500 kN
Energy absorption	>20 kJ
Damping	>60%
Pad Diameter at full stroke	180 mm

CB-20



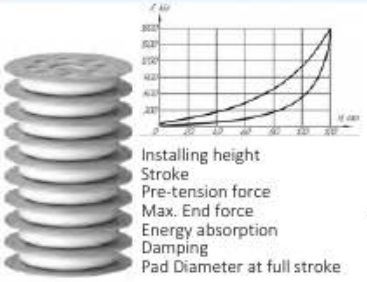
Installing height	200mm
Stroke	≤60mm
Pre-tension force	≥35 kN
Max. End force	≤1750 kN
Energy absorption	>30 kJ
Damping	>50%
Pad Diameter at full stroke	200 mm

MP-20



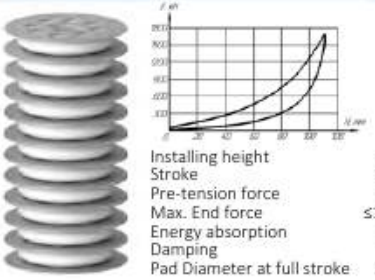
Installing height	210mm
Stroke	≤60mm
Pre-tension force	≥45 kN
Max. End force	≤1750 kN
Energy absorption	>30 kJ
Damping	>50%
Pad Diameter at full stroke	200 mm

KP-40



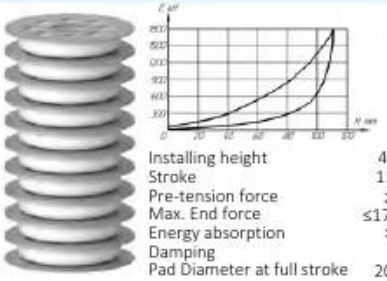
Installing height	360mm
Stroke	120mm
Pre-tension force	≥45 kN
Max. End force	≤1750 kN
Energy absorption	>65 kJ
Damping	>50%
Pad Diameter at full stroke	210 mm

KP-50



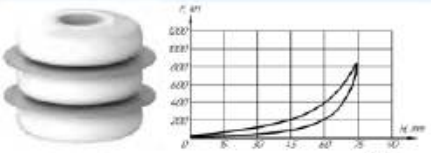
Installing height	417mm
Stroke	110mm
Pre-tension force	≥45 kN
Max. End force	≤1700 kN
Energy absorption	>60 kJ
Damping	>50%
Pad Diameter at full stroke	200 mm

KP-60



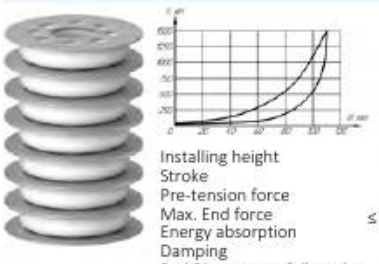
Installing height	408mm
Stroke	110mm
Pre-tension force	≥45 kN
Max. End force	≤1750 kN
Energy absorption	> 65 kJ
Damping	>55%
Pad Diameter at full stroke	200 mm

KP-150



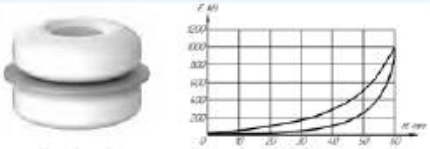
Installing height	165mm
Stroke	75mm
Pre-tension force	≥20 kN
Max. End force	≤ 800 kN
Energy absorption	>15 kJ
Damping	>45%
Pad Diameter at full stroke	215 mm

T9P



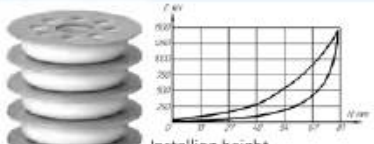
Installing height	280mm
Stroke	80mm
Pre-tension force	≥30 kN
Max. End force	≤ 1400 kN
Energy absorption	>35 kJ
Damping	>50%
Pad Diameter at full stroke	200 mm

TCK 51.90.16.C



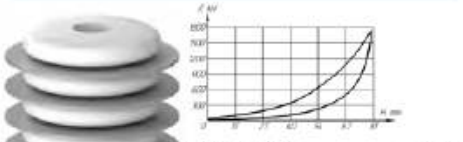
Installing height	135mm
Stroke	60mm
Pre-tension force	≥20 kN
Max. End force	≤ 950 kN
Energy absorption	>20 kJ
Damping	>50%
Pad Diameter at full stroke	215 mm

T7P



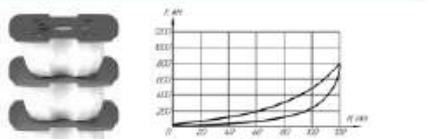
Installing height	276mm
Stroke	80mm
Pre-tension force	≥30 kN
Max. End force	≤ 1400 kN
Energy absorption	>35 kJ
Damping	>45%
Pad Diameter at full stroke	200 mm

KT-75



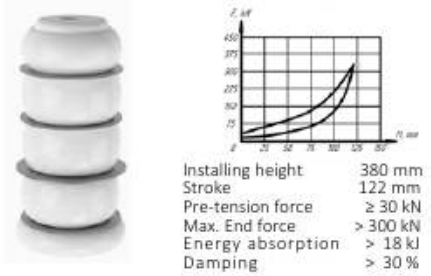
Installing height	280mm
Stroke	110mm
Pre-tension force	≥20 kN
Max. End force	≤ 1500 kN
Energy absorption	>45 kJ
Damping	>55%
Pad Diameter at full stroke	265 mm

PA 118



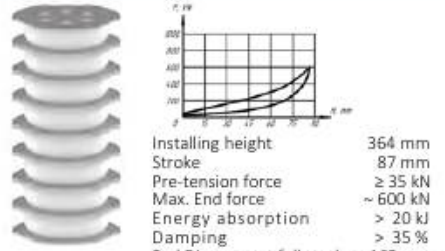
Installing height	320mm
Stroke	124mm
Pre-tension force	≥25 kN
Max. End force	≤ 800 kN
Energy absorption	>30 kJ
Damping	>50%
Pad Diameter at full stroke	194mm

KMT-118C



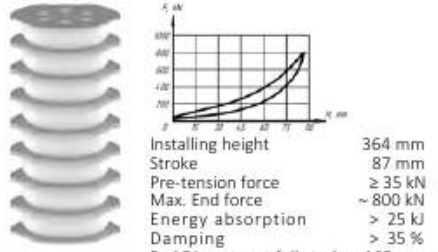
Installing height	380 mm
Stroke	122 mm
Pre-tension force	≥ 30 kN
Max. End force	> 300 kN
Energy absorption	> 18 kJ
Damping	> 30 %

KHT-82.1



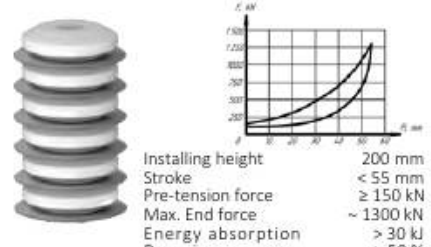
Installing height	364 mm
Stroke	87 mm
Pre-tension force	≥ 35 kN
Max. End force	~ 600 kN
Energy absorption	> 20 kJ
Damping	> 35 %
Pad Diameter at full stroke	< 165 mm

KHT-82.2



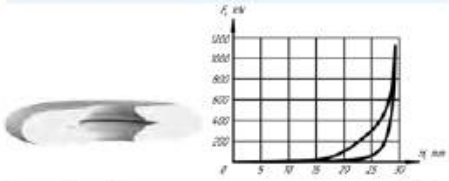
Installing height	364 mm
Stroke	87 mm
Pre-tension force	≥ 35 kN
Max. End force	~ 800 kN
Energy absorption	> 25 kJ
Damping	> 35 %
Pad Diameter at full stroke	< 165 mm

TCK135



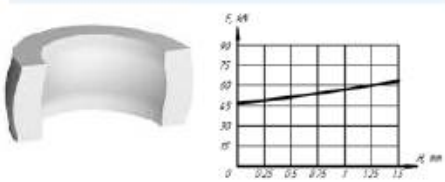
Installing height	200 mm
Stroke	< 55 mm
Pre-tension force	≥ 150 kN
Max. End force	~ 1300 kN
Energy absorption	> 30 kJ
Damping	> 50 %
Pad Diameter at full stroke	< 200 mm

Polymer pad D693



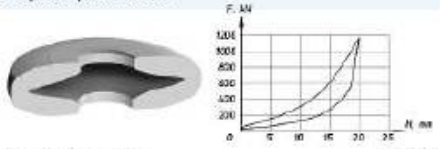
Energy absorption	>3 kJ
Damping	>60 %
Max. End force	~ 1130 kN
Stroke	29 mm
Pad Diameter at full stroke	<200 mm

Polymer pad 2P170



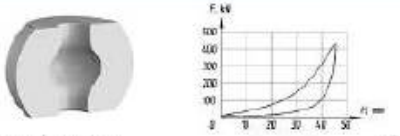
Pre-tension force	≥47 kN
Max. End force	60 kN
Stroke	≤1.5 mm
Pad Diameter at full stroke	280 mm

Polymer pad HK215



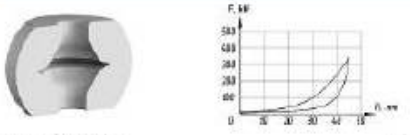
Energy absorption	>10 kJ
Damping	>40 %
Pre-tension force	≥52 kN
Max. End force	≤1170 kN
Stroke	≤20 mm
Pad Diameter at full stroke	200 mm

Polymer pad DB300



Energy absorption	>5 kJ
Damping	>30 %
Max. End force	≤430 kN
Stroke	≤45 mm
Pad Diameter at full stroke	170 mm

Polymer pad DV410



Energy absorption	>4 kJ
Damping	>40 %
Max. End force	≤340 kN
Stroke	≤45 mm
Pad Diameter at full stroke	180 mm

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