DUREL DRAW-GEAR SPRINGS – FOR ADDED SAFETY AND TRAVELING COMFORT

Draw gears absorb the tractive forces within a train formation. They are used in locomotives, freight cars, coaches and special rail cars and designed to minimize train vibrations and noise emissions. At the same time, they provide the required traveling comfort and sustain the safety of passengers and goods in the long run.

Due to their unbeatable energy absorption, their outstanding energy characteristics and their excellent spring operation, DUREL polymer springs for draw gears excel in meeting all of the above requirements. They enable the manufacturing of components that offer increased performance for an often limited space and nominal stroke.

DUREL DRAW-GEAR SPRINGS – FOR A WIDE VARIETY OF INDUSTRIES

PROVIDE **OPTIMUM FORCE DISTRIBUTION** AND A UNIFORMLY APPLIED LOAD ON MECHANICAL STRUCTURES

DUREL®

YOUR POLYMER SPRING EXPERTS

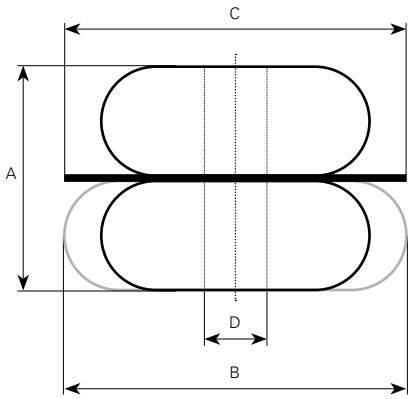
TECHNICAL SPECIFICATIONS

- Suitable for all types of draw-gears
- Superior energy absorption, vibration and noise damping for increased safety and traveling comfort
- Compliant with relevant EN and UIC standards
- For use at ambient temperatures between –76°F and 122°F (–60°C and +50°C) in appropriate material selection

SPRING COMPOSITION

Individual spring assemblies consist of polymer pads and intermediate discs, respectively, shown in the corresponding product pictures.

A Installed height
B Pad diameter at full stroke
C Diameter of intermediate disc
D Diameter of guiding rod



- Springs must be protected from continued sun exposure.
- Product specifications valid at the time of printing.
- The contents of this brochure and technical data are subject to change.
- The data shown in the relevant property charts apply.

DUREL DZ15

Draw-gear spring

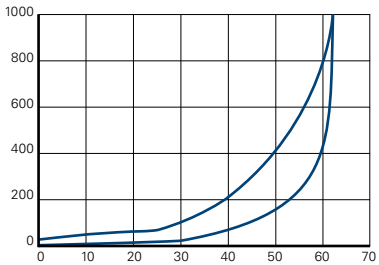
- For use in freight cars, coaches and special rail cars
- EBA* Certification No. 05D16A; UIC 520 and EN 15566 compliant

- Energy absorption: ≥ 15 kJ
- Damping: > 35 %
- Pre-tension force: ≥ 20 kN
- Max. end force: ≤ 1,000 kN
- Stroke: > 55 mm
- Weight: 5.5 kg

A 150 +2/-5 mm **C** 240 mm
B 240 ±2 mm **D** 60-1 mm

Static properties

Force F [kN]



DUREL DZ20

Draw-gear spring

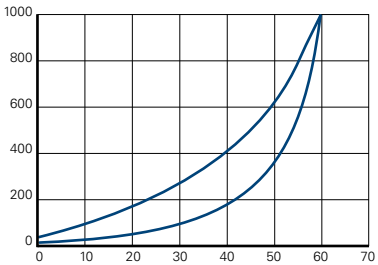
- For use in freight cars, coaches, locomotives and special rail cars
- EBA* Certification No. 01J08A; UIC 520 and EN 15566 compliant

- Energy absorption: ≥ 20 kJ
- Damping: > 32 %
- Pre-tension force: ≥ 20 kN
- Max. end force: ≤ 1,000 kN
- Stroke: > 55 mm
- Weight: 5.6 kg

A 150 +2/-3 mm **C** 240 mm
B 240 ±2 mm **D** 60-1 mm

Static properties

Force F [kN]



*German Federal Railway Authority

DUREL DZ15DF

Draw-gear spring
Dual springs for LFTS

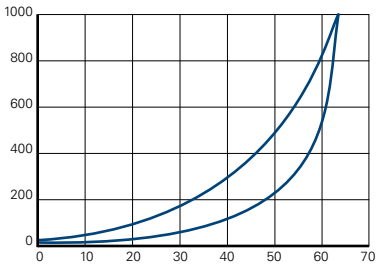
- For use in freight cars and special rail cars
- UIC 520 and EN 15566

- Energy absorption: ≥ 15 kJ
- Damping: > 40 %
- Pre-tension force: ≥ 15 kN
- Max. end force: ≤ 1,000 kN
- Stroke: > 55 mm
- Weight: 5.8 kg

A 177.5 ±2 mm **C** 127 mm
B 127 ±2 mm **D** 25-1 mm

Static properties

Force F [kN]



DUREL DZ15NF

Draw-gear spring
Single spring for LFTS

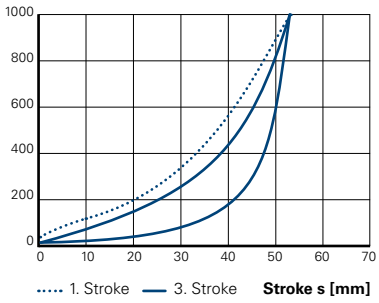
- For use in freight cars and special rail cars
- UIC 520 and EN 15566

- Energy absorption: ≥ 15 kJ
- Damping: > 40 %
- Pre-tension force: ≥ 15 kN
- Max. end force: ≤ 1,000 kN
- Stroke: > 50 mm
- Weight: 5.0 kg

A 176 +2 mm **C** 160 mm
B 160 ±2 mm **D** 60-1 mm

Static properties

Force F [kN]



We develop customized spring systems for a wide variety of industries

Innovative applications require individually-tailored solutions and professional service. Are you looking for design specifications that are not met by our standard offering? DUREL develops and manufactures custom springs – even in small quantities.

We offer solutions that are tailored to your needs. We design a variety of products according to customer specifications, significantly contributing to the success of their products. In doing so, we focus on the same high standards of quality that apply to volume production in terms of design, production and quality control.

Talk to us about your ideas and business goals. We would be happy to develop a custom design.

Would you like to learn more?
Our competent and dedicated team would be more than happy to address any questions or design specifications you may have with regard to individually-tailored solutions. We are looking forward to hearing from you.

DUREL POLYMER SPRINGS – YOUR ADVANTAGE AT A GLANCE

- Under quasistatic conditions the damping of over 50 % in the third stroke even exceeds the relevant EN norms
- Unrivaled energy absorption despite reduced weight and compact volume
- Exceeds the performance of traditional metal, rubber and/or hydraulic-based springs in terms of reliability and durability
- Progressive spring curve
- Maintenance-free over the entire lifetime of the rail car and therefore the most affordable option
- Excellent creep resistance and flexural fatigue endurance
- No stick-slip effect or noise emissions
- Excellent resistance to chemicals, grease, oils, and solvents prevents material degradation and loss of material properties under typical operating conditions
- Broad operating temperature range from –76°F to 122°F (–60°C to +50°C)* to ensure the performance of the products under extreme climate conditions (*with appropriate material selection – we will be happy to advise you).

DURABLE. RELIABLE. SAFE.

DUREL®

YOUR POLYMER SPRING EXPERTS