Safety Plus
Your advantage

The slender, lighter structure of the appliances ensures convenient and safe working - even where conditions are particularly cramped.

Repetition-accurate and precise results - supported by individual factory test certificates - ensure a maximum degree of job safety.

High degree of resilience and long life of the appliances attributable to a low-backlash planet gear with Ceramic-Teflon® coating.

A 30 % lighter steel housing thanks to the use of high-performance aluminium.

Each torque multiplier is examined as to its torque range at the factory and provided with an individual factory test certificate.

Precise, reliable figures - even under extreme climatic conditions

Easy to operate: The most common INPUT/OUTPUT torques on the torque multiplier
WHAT MAKES FOR A GOOD TORQUE MULTIPLIER?

- Light yet with the appliance remaining sturdy.
- The torque and repeatability accuracy is at +/- 3%. Only in this way is dependable screw tightening work assured with reproducible accuracy.
- Both the torque settings and individual appliance components can be traced back.
- A factory test certificate ensures traceability of operations on the basis of ISO 9000. An individual factory test certificate is prepared for each and every torque multiplier and contains comprehensive information on readings, deviations, torque sensors and environmental influences.

- Particularly when unloosening seized screw connections, minimised impacts on the tooth flanks appear in a low backlash planet gear. The greater the precision with which the components fit together, the more stable the overall structure and the longer the service life. This precision can only be assured by a high in-house manufacturing proportion and consistent quality checks.
- An overload safety mechanism should be integrated at torques upwards of 2000 N·m. No damage occurs to the gear should it be overloaded.

Selection criteria

1. Torque
   Select your torque multiplier on the basis of the maximum output torque.

2. Loading factor and frequency (load spectrum)
   It would be wrong to constantly operate the appliance at its maximum capacity - just as it would be for any machine or any car. This also holds good for the choice of the torque multiplier. Permanently operating a torque multiplier for screw-tightening applications at maximum torque may impact negatively on its service life.

3. Supporting situation
   Various supporting situations may be a determining factor in the selection of the torque multiplier.

Support at a raised position: The L-form reaction arm would be suitable should you want to attach the reaction arm to a point above the screw-tightening level. A warning here in that the inputted bending forces result in a reduction of the maximum permitted torque!

Support at the level of the screw: Our recommendation - should you want to attach the reaction arm at the screw-tightening level - is either for a Z-form reaction arm or the straight L-form with adjustable reaction square.

4. Anti-wind-up ratchet
   A minimum 180° torque wrench field of movement should be on hand. As such, the recommendation is for an appliance complete with an anti-wind-up ratchet. In this way, pre-tension in the appliance is maintained and does not need to be re-created with each lift.

Application case

8,000 screws a year are to be tightened at 4000 N·m. The following calculation needs to be carried out on the basis of the diagram to find the right appliance:

Torque x 100% = Loading
4,000 N·m x 100% = 62%

Choose an appliance with a max. 6452 N·m torque. The DVV-60ZRS would be ideally suitable here.

Plan for a sufficient reserve in unloosening the screw connection. The torque needed to unloosen a screw connection can be many times the tightening torque.
## PRODUCT OVERVIEW TORQUE MULTIPLIERS
### DREMOPPLUS ALU

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<th>Drive</th>
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<th>Ratio</th>
<th>Reaction arm</th>
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Working principle
Torque - velocity

The chart representation elucidates the principle of torque multiplication. Let us assume a 60 N·m input torque and a 240 N·m output torque.

At a 1:4 ratio, 4 revolutions are needed at the input for 1 revolution with a 240 N·m torque to be obtained at the output.

This is substantiated in terms of the physical formula:

\[ \text{Power} = \text{torque} \times \text{revolution} \]

With gear efficiency deducted, the output power is to be considered as a constant equal to the input power. Thus multiplication of the torque can only be obtained from an increased number of revolutions at the input.

Working principle
Force and reaction

When working with a torque multiplier, torsion wind-up is built up in the gear when the screw is tightened. This stress must be reduced. A reaction absorbed by reaction arm and abutment is produced.

L-form reaction arm without adjustable reaction square:
The reaction acts on the wall. It is possible, but the tilting moment which arises causes the max. permitted torque to drop by 20%.

L-form reaction arm with adjustable reaction square:
The reaction acts on the adjacent impact socket.
Choosing the right reaction arm
Reaction arm Z-form

- A flexible offset reaction arm which has proved itself as the standard solution.
- Supporting situations are, for instance, adjoining screws, walls, machine parts and other stable abutments.
- This reaction arm can be ideally used where conditions are quite cramped.

Choosing the right reaction arm
Reaction arm L-form

- This straight reaction arm with adjustable reaction square is admirably suited for flange screw connections.
- The L-form reaction arm has in terms of support a larger radius than the Z-form.

Choosing the right torque assembly tool for screws and nuts

- It is vital that use is made of a torque wrench complete with ratchet function (integrated or separate) for torque multipliers without anti-wind-up ratchet.
- For models with an anti-wind-up ratchet, we recommend the use of torque tools complete with ratchet function (integrated or separate) - for ease of working.
**DREMPLUS ALU FAMILY 1**
**DVV-40Z, DVV-40ZRS - DVV-540RS**

- **Convenient:** Integrated "RS" anti-wind-up ratchet for safe working. Bi-directional (apart from model DVV-40Z)

- **Lightweight and slim:** High-performance aluminium housing is 30 % lighter than a steel one.

- **Low backlash, 2-stage planet gear for a long service life**

- **Stable, shuttle-impacted gear housing**

- **Flexible:** With detachable Z-form reaction arm, can be optionally retrofitted with L-form reaction arm and adjustable reaction square

- **A 1", 1.1/2" or 2.1/2" output square with drill hole for impact sockets with safety pin and ring**

- **1/2" or 3/4" input square**

- **Overload safety mechanism:** Non-destructive overload safety mechanism - "Slipper" - filed as a patent. Triggers overload at 10% and again clicks into place. Clockwise and anti-clockwise

- **A coating of the tooth flanks consisting of ceramic and teflon enables the gear to be constantly lubricated with a minimum of grease.**

- **A Z-form forged reaction arm of chrome-vanadium steel absorbs any countering force that arises. Optional: L-form reaction arm on request**

- **100% quality check**
  - Delivery including factory test certificate
  - The most common INPUT/OUTPUT torques on the torque multiplier

- **DVV-40Z**
  - 1:16
  - 4.000 N·m

- **DVV-40ZRS**
  - 1:18
  - 6.000 N·m

- **DVV-540RS**
  - 1:22
  - 8.000 N·m
  - 1:28.5
  - 10.000 N·m
  - 1:39
  - 13.000 N·m
  - 1:175
  - 54.000 N·m
DVV-40Z + DVV-40ZRS
TORQUE MULTIPLIER DREMPLUS ALU
4000 N·m / 2930 lbf·ft

Particularly suitable for:
› Machinery and plant engineering
› Cable cars, lifts and masts
› Heavy industry, construction sites
› Bridge construction
› Shipbuilding, aircraft and railway construction
› Refineries, plastics industry
› Power plants of all kinds

Features:
› Mechanical hand torque multiplier for controlled screw tightening and unloosening screw connections
› With a two-stage planet gear
› High-performance aluminium housing
› Torque multiplication ratio: 1:16
› DVV-40ZRS model with anti-wind-up ratchet (RS)
› With non-destructive “Slipper” overload safety mechanism for gear protection - clockwise and anticlockwise
› Z-form, offset reaction arm depending on model made of chrome-vanadium steel
› Can be optionally retrofitted with L-form straight reaction arm - with adjustable reaction arm - of lightweight metal
› Guaranteed accuracy: Better than +/- 3 % tolerance
› For operation in combination with a torque wrench
› 2 models for a maximum load at around a max. 4000 N·m
› Output square with drill hole for impact sockets with safety pin and ring

Scope of delivery:
› Torque Multiplier DREMPLUS ALU
› With Z-form offset reaction arm
› Delivery in sturdy shipping case with foam insert
› Factory test certificate and setting table
› Detailed technical information is available on request

Optional accessories:

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</thead>
<tbody>
<tr>
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<td>B</td>
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<td>212</td>
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**DVV-60ZRS - DVV-130ZRS**

**TORQUE MULTIPLIER DREMOPLUS ALU**

6000-13000 N·m / 4400-9530 lbf·ft

**Particularly suitable for:**
- Machinery and plant engineering
- Cable cars, lifts and masts
- Heavy industry, construction sites
- Bridge construction
- Shipbuilding, aircraft and railway construction
- Refineries, plastics industry
- Power plants of all kinds

**Features:**
- Mechanical hand torque multiplier for controlled screw tightening and unloosening screw connections
- With a two-stage planet gear
- High-performance aluminium housing
- Torque multiplication ratio: 1:18, 1:22, 1:28.5, 1:39
- All models with anti-wind-up ratchet (RS)
- With non-destructive "Slipper" overload safety mechanism for gear protection - clockwise and anticlockwise
- Z-form, offset reaction arm depending on model made of chrome-vanadium steel
- Can be optionally retrofitted with L-form straight reaction arm - with adjustable reaction arm - of lightweight metal
- Guaranteed accuracy: Better than +/- 3 % tolerance
- For operation in combination with a torque wrench
- 4 models for maximum load in the range between max. 6000 N·m and max. 13000 N·m
- Output square with drill hole for impact sockets with safety pin and ring

**Scope of delivery:**
- Torque Multiplier DREMOPLUS ALU
- With Z-form offset reaction arm
- Delivery in sturdy shipping case with foam insert
- Factory test certificate and setting table
- Detailed technical information is available on request

**Features:**
- Torque Multiplier DREMOPLUS ALU
- With Z-form offset reaction arm
- Delivery in sturdy shipping case with foam insert
- Factory test certificate and setting table
- Detailed technical information is available on request

**Optimal Accessory:**
- Reaction arm Z-form offset for DVV60
  - Code: 2653192 RZ-DVV60
- Reaction arm Z-form offset for DVV80
  - Code: 2653206 RZ-DVV80
- Reaction arm Z-form offset for DVV100
  - Code: 2653222 RZ-DVV100
- Reaction arm Z-form offset for DVV130
  - Code: 2653230 RZ-DVV130
- Reaction arm L-form straight for DVV60-80, 1.1/2"
  - Code: 2654091 RZ-DVV60-80

**Specifications:**

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<td>6000-13000 N·m / 4400-9530 lbf·ft</td>
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**Technical Data:**

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<th>Description</th>
<th>Code No.</th>
<th>Description</th>
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DVV-540RS
TORQUE MULTIPLIER DREMOPPLUS ALU
54000 N·m / 40330 lbf·ft

Particularly suitable for:
› Heavy industry
› Oil industry
› Petrochemicals

Features:
› Mechanical hand torque multiplier for controlled screw tightening and unloosening screw connections
› With a three-stage planet gear
› High-performance aluminium housing
› Chrome-vanadium steel reaction arm
› Multiplication at the ratio of 1:175
› With anti-wind-up ratchet (RS)
› With non-destructive “Slapper” overload safety mechanism for gear protection - clockwise and anticlockwise
› With fixture for welding on a reaction arm (optional)
› Guaranteed accuracy: Better than +/- 3 % tolerance
› For operation in combination with a torque wrench
› 1 model for a maximum load of around a max. 54000 N·m
› Output square with drill hole for impact sockets with safety pin and ring

Scope of delivery:
› Torque Multiplier DREMOPPLUS ALU
› Delivery in a sturdy crate on pallet
› Setting table
› Detailed technical information is available on request

SPECIAL REACTION ARMS CAN BE OBTAINED ON REQUEST INCLUDING TECHNICAL ADVICE.
› Just turn to us - We would be glad to tender any advice.
› Any problems you have represent our assignments!
DREMPLUS ALU FAMILY 2
DVI-20L/Z AND DVI-28L/Z

3/4” input square

Low backlash, single-stage planet gear for a long service life

Output square 1” with drill hole for impact sockets with safety pin and ring

Overload safety mechanism achieved from a classic shearing square

Lightweight: High-performance aluminium housing is 30 % lighter than a steel one.

A Z-form forged reaction arm of chrome-vanadium steel absorbs any countering force that arises.

DVI-20Z and DVI-28Z
› Reaction arm Z-form offset
› Fix integrated

DVI-20L and DVI-28L
› Reaction arm L-form with adjustable reaction square drive
› Fix integrated

100% quality check
› Delivery including factory test certificate
› The most common INPUT/OUTPUT torques on the torque multiplier

1:4
2.000 N·M
1:4
2.000 N·M
1:5,5
2.000 N·M
1:5,5
2.000 N·M
DVI-20L/Z + DVI-28L/Z
TORQUE MULTIPLIER DREMOPPLUS ALU
2000-2800 N·m / 1500-2050 lbf·ft

Particularly suitable for:
› Industry, construction sites, car and truck garages, agricultural technology, construction machinery
› Bridge, aircraft and railway construction, shipbuilding, refineries
› Machinery and plant engineering, maintenance

Features:
› Mechanical hand torque multiplier for controlled screw tightening
  and unloosening screw connections
› With a single-stage planet gear
› High-performance aluminium housing
› Multiplication at the ratio of 1:4, 1:5.5
› Guaranteed accuracy: Better than +/- 3 % tolerance
› For operation in combination with a torque wrench
› 2 models for maximum load in the range between max. 2000 N·m and 2800 N·m
› Z model: with Z-form, offset reaction arm of chrome-vanadium steel
› L model: with L-form straight reaction arm - with adjustable reaction square - of lightweight metal
› Output square with drill hole for impact sockets with safety pin and ring

Scope of delivery:
› Torque Multiplier DREMOPPLUS ALU
› With firmly integrated reaction arm of an Z- or L-form depending on model
› Delivery in sturdy shipping case with foam insert
› Factory test certificate and setting table
› Detailed technical information is available on request

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OPTIONAL ACCESSORIES:
1/2" input square

Low backlash, single-stage planet gear for a long service life

Output square 3/4" with drill hole for impact sockets with safety pin and ring

Reaction arm: Forged reaction arm absorbs any counter force arising.

Lightweight: High-performance aluminium housing is 30% lighter than a steel one.

Flexible: With detachable Z-form reaction arm; can be optionally retrofitted with long reaction arm incorporating an adjustable reaction square (L-form) of lightweight metal

100% quality check

› Delivery including factory test certificate
› The most common INPUT/OUTPUT torques on the torque multiplier

The GEDORE maintenance service
One promoting service life and safety

› Regular maintenance can considerably lengthen the service life of your GEDORE torque multiplier and also contribute to your safety.
› Maintenance involves our qualified personnel examining the individual components, testing their functional precision and verifying the factory certificate.
› In such an instance, we would willingly draft an estimate for you.
› We will, of course, continue to support you should you have any questions on and problems with the former DREMOPLUS models - just get in touch with us!
› Should a guarantee case arise - then either hand in the appliance to your dealer - who will concern himself with what is then to follow - or send it directly for repairs to the Lösomat manufacturer or the nearest GEDORE agency.
DVV-13Z
TORQUE MULTIPLIER DREMOPLUS ALU
1300 N·m / 950 lbf·ft

Particularly suitable for:
› Industry, construction sites, car and truck garages, agricultural technology
› Bridge, aircraft and railway construction, shipbuilding, refineries
› Machinery and plant engineering, maintenance

Features:
› Mechanical hand torque multiplier for controlled screw tightening
  and unloosening screw connections
› With a single-stage planet gear
› High-performance aluminium housing
› With Z-form offset reaction arm of chrome-vanadium steel
› Can be optionally retrofitted with L-form straight reaction arm - with adjustable reaction arm -
  of lightweight metal
› Multiplication at the ratio of 1:5
› Guaranteed accuracy: Better than +/- 3 % tolerance
› For operation in combination with a torque wrench
› 1 model for a maximum load of around a max. 1300 N·m
› Also available as set (No. DVV-13ZG) with three different impact sockets - sizes 27, 30, 32 mm
› Output square with drill hole for impact sockets with safety pin and ring

Scope of delivery:
› Torque Multiplier DREMOPLUS ALU
› With Z-form offset reaction arm
› Delivery in sturdy shipping case with foam insert
› Factory test certificate and setting table
› Detailed technical information is available on request

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DVV-13Z

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DVV-13ZG

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OPTIONAL ACCESSORIES

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