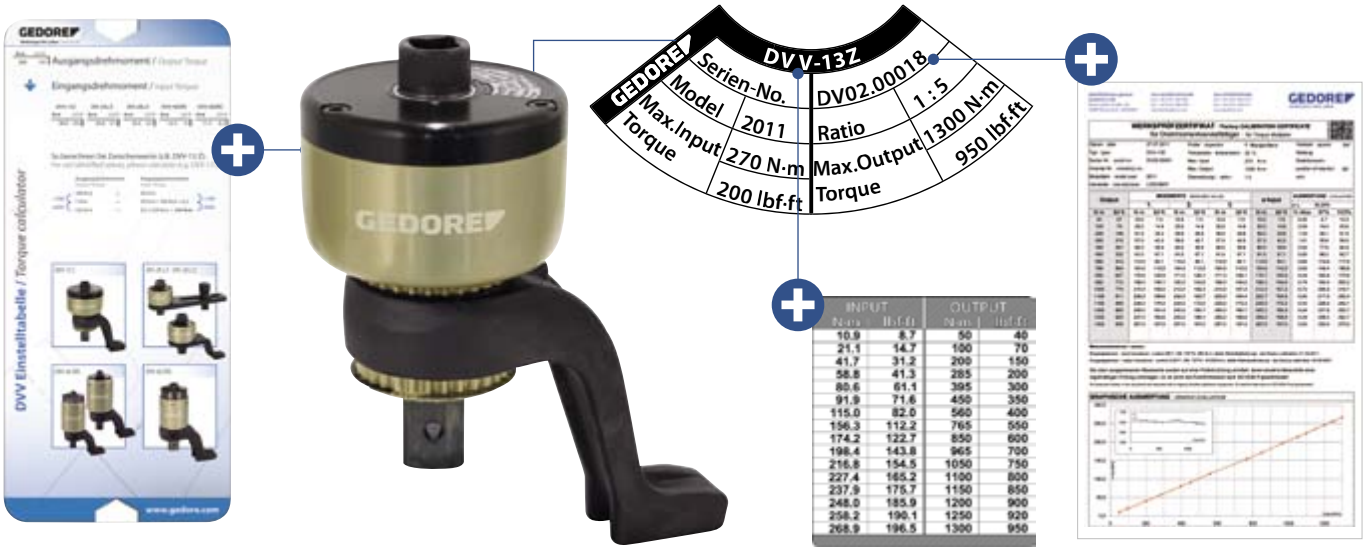

GEDORE

TORQUE MULTIPLIERS
DREMOPLUS ALU



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 screwing-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.

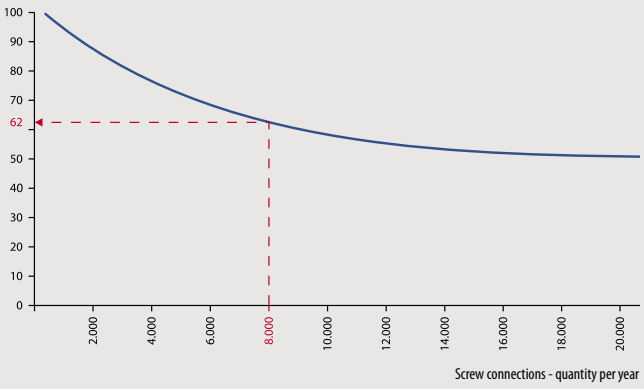
4. Anti-wind-up ratchet

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:

$$\frac{\text{Torque x 100 \%}}{\text{Loading}} = \frac{\text{4.000 N·m x 100\%}}{\text{62 \%}}$$



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
DREMOPLUS ALU

Series / Type	Accuracy + / -	Drive	Output drive	Ratio	Reaction arm	Anti-wind-up ratchet	Overload safety mechanism: Sun gear	Overload safety mechanism: Shearing square	Overload safety mechanism: Slipper non-destructive	Overload safety mechanism: Ceramic-Teflon® coating	Range N·m tested and certificated
 DVV-13 Z	3 %	1/2"	3/4"	1:5	Z	○	●	○	○	○	250 – 1.300 N·m
 DVI-20 Z	3 %	3/4"	1"	1:4	Z	○	○	●	○	○	500 – 2.000 N·m
 DVI-20L	3 %	3/4"	1"	1:4	L	○	○	●	○	○	500 – 2.000 N·m
 DVI-28Z	3 %	3/4"	1"	1:5,5	Z	○	○	●	○	○	500 – 2.800 N·m
 DVI-28L	3 %	3/4"	1"	1:5,5	L	○	○	●	○	○	500 – 2.800 N·m
 DVV-40Z	3 %	1/2"	1"	1:16	Z	○	○	○	●	●	500 – 4.000 N·m
 DVV-40ZRS	3 %	1/2"	1"	1:16	Z	●	○	○	●	●	500 – 4.000 N·m
 DVV-60ZRS	3 %	3/4"	1.1/2"	1:18	Z	●	○	○	●	●	700 – 6.000 N·m
 DVV-80ZRS	3 %	3/4"	1.1/2"	1:22	Z	●	○	○	●	●	750 – 8.000 N·m
 DVV-100RS	3 %	3/4"	1.1/2"	1:28,5	Z	●	○	○	●	●	1.000 – 10.000 N·m
 DVV-130ZRS	3 %	3/4"	1.1/2"	1:39	Z	●	○	○	●	●	1.200 – 13.000 N·m
 DVV-540RS	3 %	3/4"	2.1/2"	1:175	–	●	○	○	●	●	7.000 – 54.000 N·m

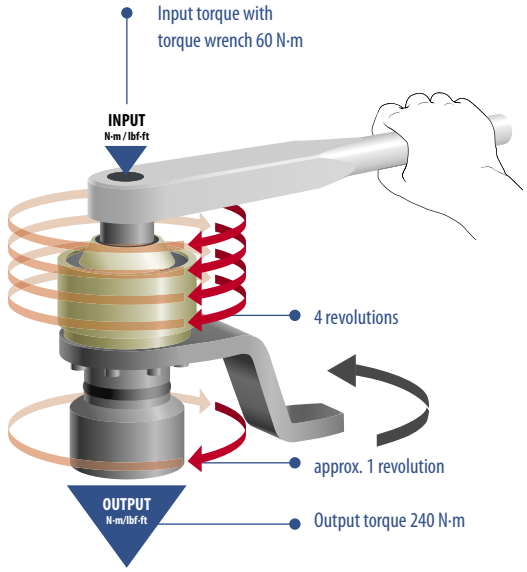
Working principle
Torque - velocity

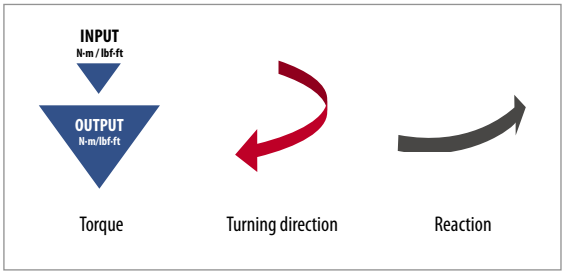
The chart representation elucidates the principle of torque multiplication. Let us assume a 60 N·m input torque and a 240 N·m output torque.

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:
Power = torque x revolution

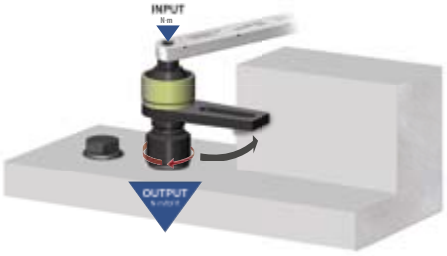
With gear efficiency deducted, the output power is to be considered as a constant equal to the input power. Thus multiplication of the torque can only be obtained from an increased number of revolutions at the input.



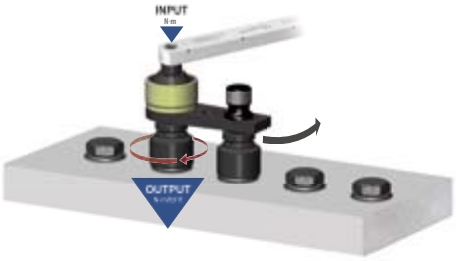


Working principle
Force and reaction

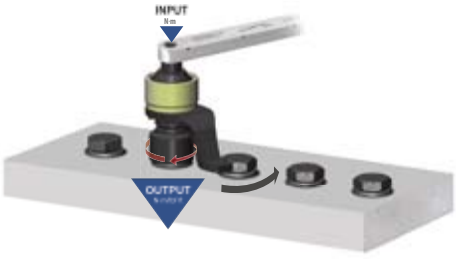
When working with a torque multiplier, torsion wind-up is built up in the gear when the screw is tightened. This stress must be reduced. A reaction absorbed by reaction arm and abutment is produced.



L-form reaction arm without adjustable reaction square:
The reaction acts on the wall. 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.

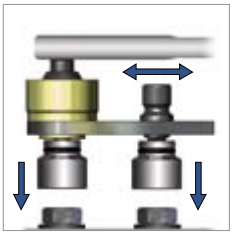


Reaction arm in Z-form:
The reaction acts on the adjacent screw connection

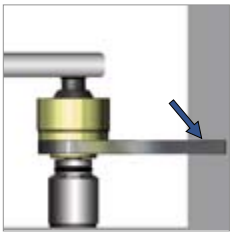
Choosing the right reaction arm
Reaction arm Z-form

- 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.



The L-form is also ideal for those points above the screw-tightening level. However, the resulting tilting moment causes the max. permitted torque to drop by 20%.

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.

DREMOPLUS 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

1:16
4.000 N·m

1:18
6.000 N·m

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 DREMOPLUS ALU
4000 N·m / 2930 lbf·ft

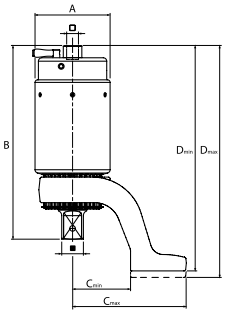
Particularly suitable for:
- Machinery and plant engineering
- Cable cars, lifts and masts
- Heavy industry, construction sites
- Bridge construction
- Shipbuilding, aircraft and railway construction
- Refineries, plastics industry
- Power plants of all kinds

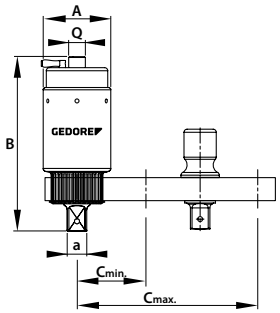
Features:
- Mechanical hand torque multiplier for controlled screw tightening and unloosening screw connections
- With a two-stage planet gear
- High-performance aluminium housing
- Torque multiplication ratio: 1:16
- DVV-40ZRS model with anti-wind-up ratchet (RS)
- With non-destructive "Slipper" overload 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 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

DVV-40Z

DVV-40ZRS





max. N·m-Output	max. lbf·ft-Output		" C	" D	A	B	C_{min}	C_{max}	D_{min}	D_{max}	max. N·m-Input	max. lbf·ft-Input	kg	Code	No.
4000	2930	1:16	1/2	1	88	212	71	136	250	256	300	220	5.4	2653087	DVV-40Z
4000	2930	1:16	1/2	1	88	227	71	136	264	270	310	230	5.7	2653109	DVV-40ZRS

OPTIONAL ACCESSORIES:

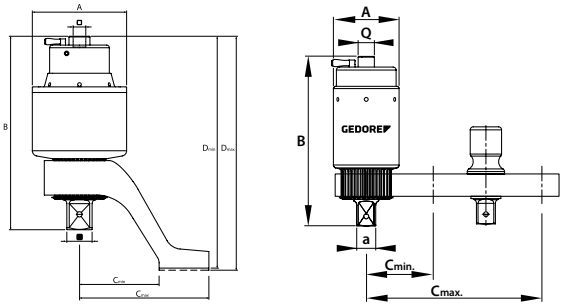
Description	A	B	C_{min}	C_{max}	kg	Code	No.
Reaction arm Z-form offset for DVV40	88	212	71	136	1.5	2653176	RZ-DVV40
Reaction arm L-form straight for DVV40, 1"	88	212	86	234	1.7	2653184	RL-DVV40

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



max. N·m-Output	max. lbf·ft-Output	•:⚙	□" C	■" D	A	B	C_{min}	C_{max}	D_{min}	D_{max}	max. N·m-Input	max. lbf·ft-Input	kg	Code	No.
6000	4400	1:18	3/4	1.1/2	102	257	110	190	316	324	400	300	10.5	2653117	DVV-60ZRS
8000	5870	1:22	3/4	1.1/2	128	277	110	190	338	342	420	310	13.4	2653125	DVV-80ZRS
10000	7330	1:28,5	3/4	1.1/2	142	292	120	216	350	356	410	305	13.9	2653133	DVV-100ZRS
13000	9530	1:39	3/4	1.1/2	175	306	(126)	(229)	(372)	(379)	380	280	20.9	2653141	DVV-130ZRS

OPTIONAL ACCESSORIES:

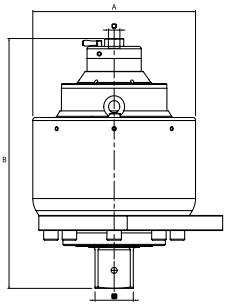
Description	A	B	C_{min}	C_{max}	kg	Code	No.
Reaction arm Z-form offset for DVV60	102	257	110	190	3.9	2653192	RZ-DVV60
Reaction arm Z-form offset for DVV80	128	277	110	190	4.3	2653206	RZ-DVV80
Reaction arm Z-form offset for DVV100	142	242	120	216	3.0	2653222	RZ-DVV100
Reaction arm Z-form offset for DVV130	175	306	126	229	3.9	2653230	RZ-DVV130
Reaction arm L-form straight for DVV60-80, 1.1/2"	102/128	256,2/276,5	120/120	315/315	4.0	2654091	RL-DVV60-80

DVV-540RS
TORQUE MULTIPLIER DREMOPLUS 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 "Slipper" 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 DREMOPLUS ALU
- Delivery in a sturdy crate on pallet
- Setting table
- Detailed technical information is available on request



max. N·m-Output	max. lbf·ft-Output		□" C	■" D	A	B	max. N·m-Input	max. lbf·ft-Input	kg	Code	No.
54000	40330	1:175	3/4	2.1/2	270	415	380	280	64.6	2653168	DVV-540RS

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!

DREMOPLUS ALU FAMILY 2
DVI-20L/Z AND DVI-28L/Z

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 DREMOPLUS ALU
2000-2800 N·m / 1500-2050 lbf·ft

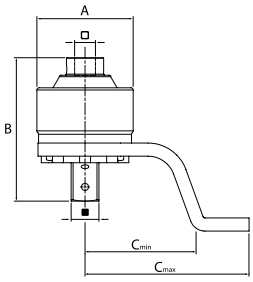
Particularly suitable for:
- Industry, construction sites, car and truck garages, agricultural technology, construction machinery
- Bridge, aircraft and railway construction, shipbuilding, refineries
- Machinery and plant engineering, maintenance

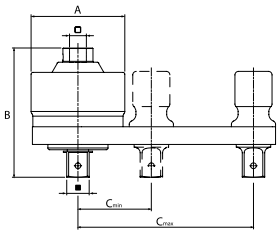
Features:
- Mechanical hand torque multiplier for controlled screw tightening and unloosening screw connections
- With a single-stage planet gear
- High-performance aluminium housing
- Multiplication at the ratio of 1:4, 1:5.5
- Guaranteed accuracy: Better than +/- 3 % tolerance
- For operation in combination 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 DREMOPLUS 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

DVI-28Z

DVI-28L





max. N·m-Output	max. lbf·ft-Output	Reaction arm		□" C	■" D	A	B	C_{min}	C_{max}	max. N·m-Input	max. lbf·ft-Input	kg	Code	No.
2000	1500	offset	1:4	3/4	1	88	131	100	150	580	430	2.9	2653265	DVI-20Z
2800	2050	offset	1:5,5	3/4	1	106	146	100	150	550	410	3.9	2653273	DVI-28Z
2000	1500	straight	1:4	3/4	1	88	131	73	152	580	430	3.0	2653249	DVI-20L
2800	2050	straight	1:5,5	3/4	1	106	146	83	199	550	410	4.1	2653257	DVI-28L

OPTIONAL ACCESSORIES:

Description	kg	Code	No.
Reaction arm Z-form offset for DVI20	1.100	2653281	RZ-DVI20
Reaction arm L-form straight for DVI20, 1"	1.200	2653303	RL-DVI20
Spare square 1" for DVI20	0.300	2653346	E-VKT-DVI20
Reaction arm Z-form offset for DVI28	1.500	2653311	RZ-DVI28
Reaction arm L-form straight for DVI28, 1"	1.700	2653338	RL-DVI28
Spare square 1" incl. ring for DVI28	0.500	2670526	E-VKR-DVI28

DREMOPLUS ALU FAMILY 3
DVV-13Z

1/2" input square

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

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

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.

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

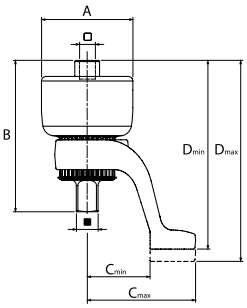
Particularly suitable for:
- Industry, construction sites, car and truck garages, agricultural technology
- Bridge, aircraft and railway construction, shipbuilding, refineries
- Machinery and plant engineering, maintenance

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

DVV-13Z

DVV-13ZG



DVV-13Z

max. N·m-Output	max. lbf·ft-Output	•:⚙	□" C	■" D	A	B	C_{min}	C_{max}	D_{min}	D_{max}	max. N·m-Input	max. lbf·ft-Input	kg	Code	No.
1300	950	1:5	1/2	3/4	80	133	56	95	165	173	270	200	1.9	2653370	DVV-13Z

DVV-13ZG

Contents	max. N·m-Output	max. lbf·ft-Output	•:⚙	□" C	■" D	A	B	C_{min}	C_{max}	D_{min}	D_{max}	max. N·m-Input	max. lbf·ft-Input	kg	Code	No.
DVV-13Z **K 32 27** **K 32 30** **K 32 32**	1300	950	1:5	1/2	3/4	80	133	56	95	165	173	270	200	3.0	2653389	DVV-13ZG

OPTIONAL ACCESSORIES

Description	A	B	C_{min}	C_{max}	kg	Code	No.
Reaction arm L-form straight for DVV-13, 3/4"	80	133	60	159	0.800	2653400	RL-DVV13
Reaction arm Z-form offset for DVV-13	80	133	56	95	0.600	2653397	RZ-DVV13
Sun gear for DVV-13					0.090	2684233	E-S-DVV13