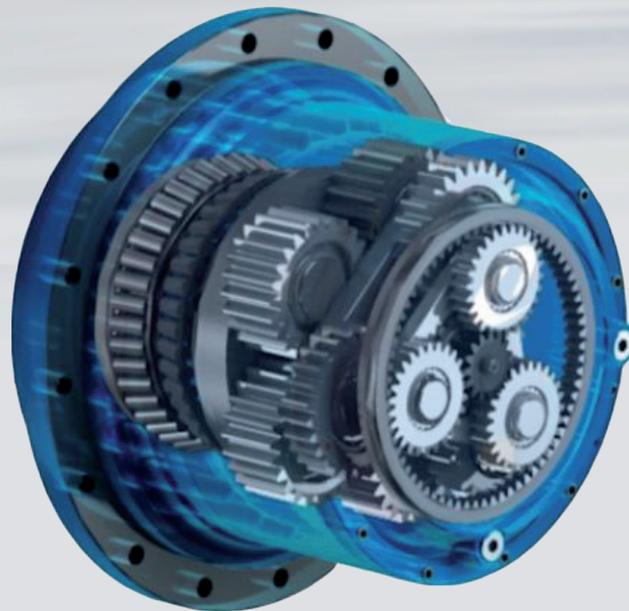




comer industries

Planetary Travel & Hoist Drives



Profile



Comer Industries is a global leader in the design and production of **advanced engineering systems and mechatronic solutions for power transmission**, supplied to **major manufacturers of agricultural and industrial machinery** worldwide.

Founded in 1970 in Reggiolo, Reggio Emilia, Italy, for the manufacturing of gearboxes for agricultural machinery, the company has progressively expanded its range with complete transmissions also for the industrial and mobile markets, to ensure customers added value and competitive advantages.

Industrial operations in Italy are structured in four **Operating Units**, specialized by product line: **Gearboxes, Driveshafts, Planetary Drives & Axles** and **Comer Industries Components** – located in the provinces of Reggio Emilia, Mantua and Matera. **Planetary Drives & Axles Facility in Cavriago**, Reggio Emilia, designs and manufactures **Planetary Travel & Hoist Drives (PGR series)**. In China, where the company has a consolidated presence since more than 20 years, the **Operating Unit in Shaoxing** (Zhejiang province) has been manufacturing transmissions for agricultural and wind applications since 2008. The **Manufacturing Facility in Bangalore** (India) designs and manufactures rigid and steering axles, hydrostatic drop-boxes and transmissions.

PLANETARY TRAVEL & HOIST DRIVES series is available for **track drives, wheel drives** and **winch drives** configurations, which can be used on a wider range of mobile equipments, as well as construction, agriculture and marine applications.

PLANETARY TRAVEL & HOIST DRIVES transmissions are the most suitable choice for **heavy duty applications**, through a **more compact and robust solution**, that features **higher output torque and load capacity** along with **increased reliability**. Application engineering allows to solve any customer's problems, granting **continuous improvement, quality** and **total service**.



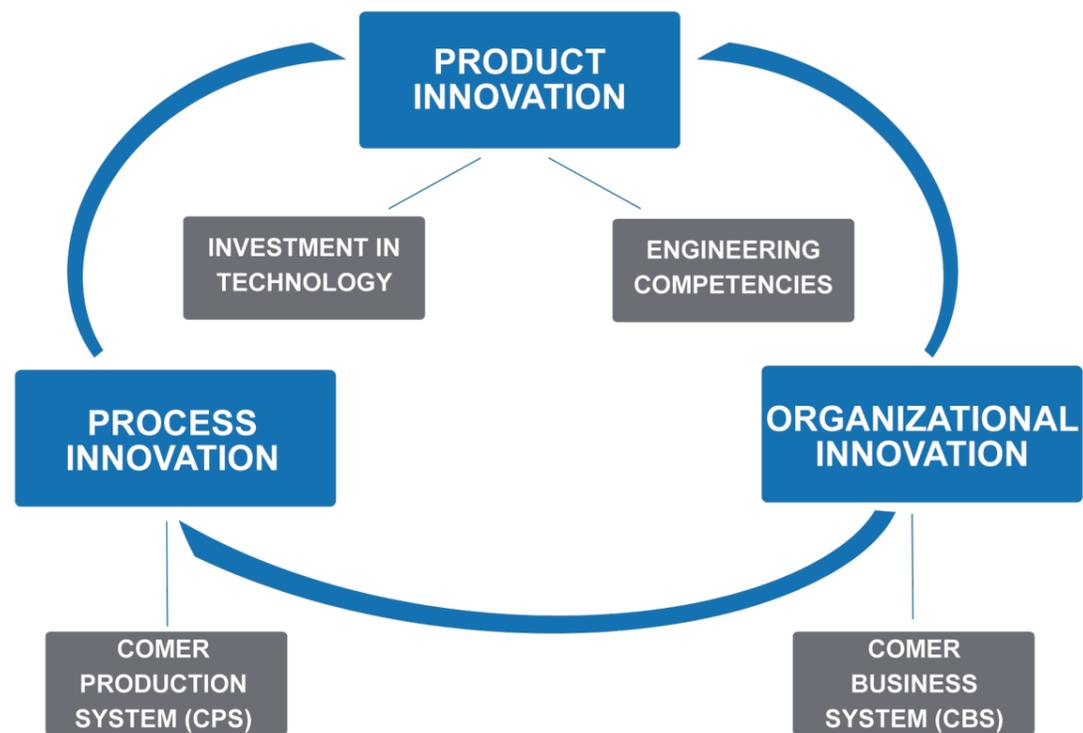
Excellence & Innovation

Innovation in Comer Industries arises from the **product**, the heart of the company. Product solutions grow out from associates' engineering and management skills, transmitting knowledge acquired in over 45 years of research and continuous improvement. **Investment in technology** and **engineering competences** allow creating customized solutions for OEMs.

Product excellence is achieved through the rigorous application of the APQP (Advanced Product Quality Planning) methodology to comply with delivery on time and in accordance with ISO TS 16949.

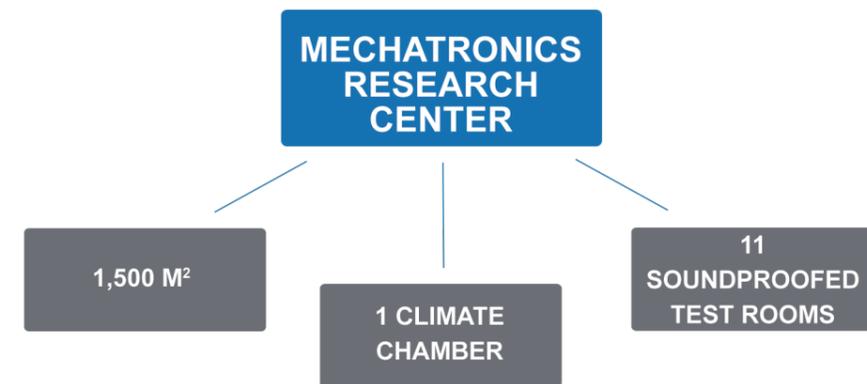
Innovation also concerns **company's processes**: the application of **Comer Production System** (CPS), an integrated model for manufacturing processes' management, is leading to an operational simplification and to the achievement of **world class quality standards**.

Organizational innovation is pursued through the adoption of **Comer Business System** (CBS), which ensures the successful execution of the three year-strategic plan and provides an integrated approach to **change, continuous improvement** and **profitable growth**. Industrial operations are organized according to **Lean methods** inspired by **Japanese manufacturing models** (World Class Manufacturing, Toyota Production System) for **product and process excellence**, with standards and procedures borrowed from the automotive industry.



Mechatronics Research Center

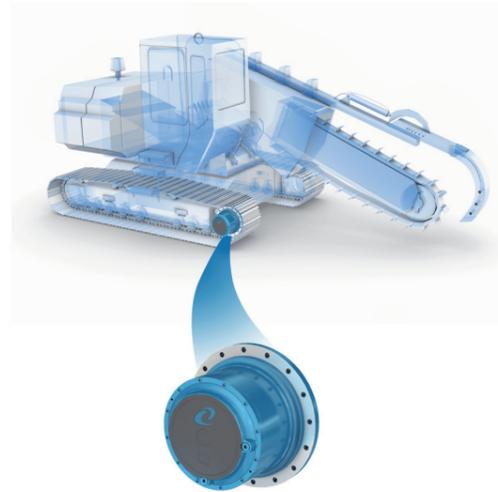
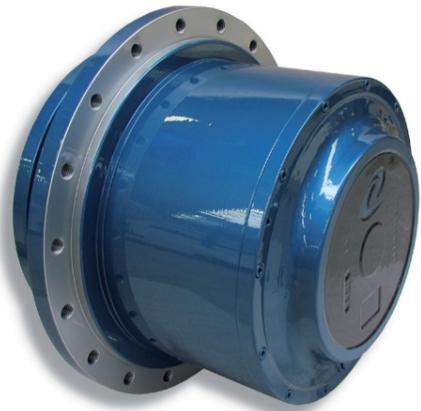
To develop and test **innovative products**, Comer Industries set up in 1996 the **Mechatronics Research Center**, the first mechatronic laboratory (2002) in Italy to be included in the Association of Public and Private Research centers recognized from the Italian Ministry of Universities and Research. Covering an area of **1,500 m²** (16,000 ft²), this facility has **1 climate chamber** and **11 soundproofed test rooms**, equipped with cutting-edge devices and simulators to reproduce machine operating environment, thus optimizing product performances and reducing both prototyping lead-time and customer time-to-market for new machines. Its team of application engineers is specialized in acquiring machine performance data, using advanced measuring instruments. Comer Industries can also rely on its **Metallographic Laboratory** for chemical and materials' analysis.



Range

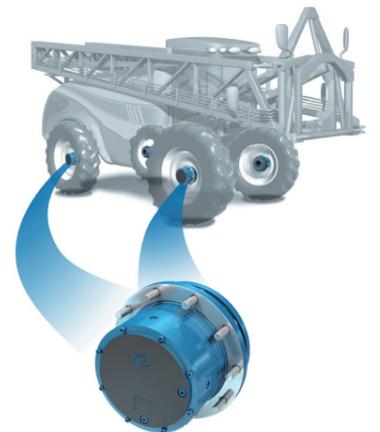
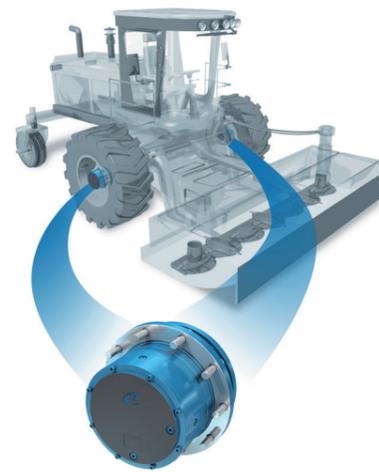
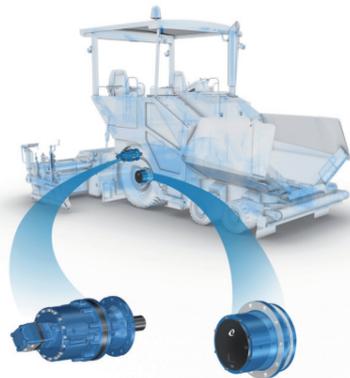
TRACK DRIVES

Series PGR T



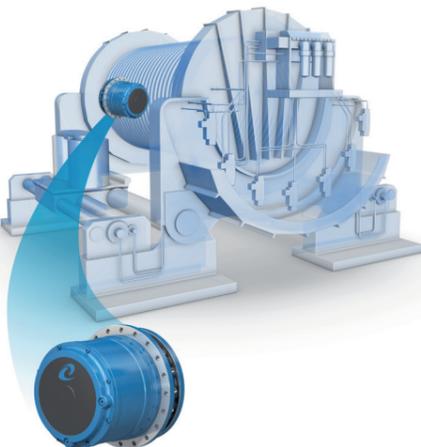
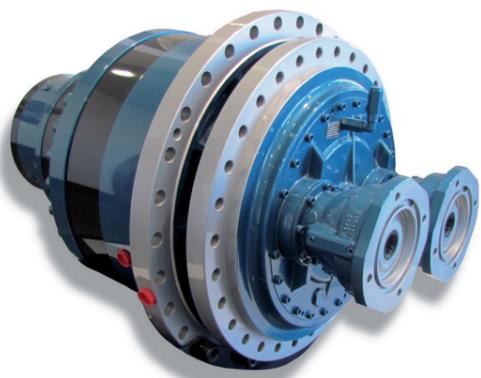
WHEEL DRIVES

Series PGR W



WINCH DRIVES

Series PGR H



Series PGR T

TRACK DRIVES

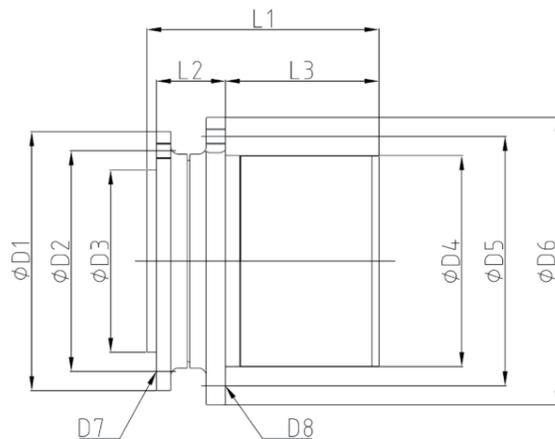
Either in the mobile construction or in the agricultural market, the right Comer Industries PGR T drive can be found to fit the needs.

Its **compact design, improved robustness, increased power density** and **suitability** for most of cartridge fixed and variable displacement **hydraulic motors** will make the PGR T series the best option for any crawler machine.

Equipped with internal parking brake and on request with disconnection.

| Size | Transmission Ratio i | Maximum Torque Nm | Braking Torque Nm | Maximum Input Speed rpm | Minimum Opening Pressure bar | Weight kg |
|--------------|-------------------------|----------------------|----------------------|----------------------------|---------------------------------|--------------|
| PGR-802 T | 20-54 | 10,000 | 150-300 | 3,500 | 15-20 | 58 |
| PGR-1702/3 T | 19-141 | 18,000 | 320-460 | 3,500 | 15-20 | 98 |
| PGR-2502/3 T | 16-151 | 25,000 | 200-600 (*) | 3,500 | 15-20 | 120 |
| PGR-3602/3 T | 16-151 | 36,000 | 200-600 (*) | 3,500 | 15-20 | 140 |
| PGR-4802/3 T | 16-151 | 48,000 | 200-600 (*) | 3,500 | 15-20 | 170 |
| PGR-6003 T | 64-202 | 60,000 | 320-700 | 3,000 | 15-30 | 250 |
| PGR-8003 T | 64-202 | 80,000 | 320-700 | 3,000 | 15-30 | 270 |
| PGR-9003 T | 64-202 | 90,000 | 600-1,300 | 3,000 | 15-23 | 400 |
| PGR-11003 T | 64-202 | 110,000 | 600-1,300 | 3,000 | 15-23 | 420 |

(*) Dimensions may change according to the selected hydraulic motors.



| Size | D1 | D2 | D3 | D4 | D5 | D6 | L1 | | L2 | L3 | | D7 | D8 |
|--------------|---------|---------|---------|-----|-----|-----|---------------|---------------|---------|---------------|---------------|----|----|
| | | | | | | | 2/3 Stages | 2/3 Stages | | 2/3 Stages | 2/3 Stages | | |
| PGR-802 T | 270 | 230 | 190 | 220 | 260 | 300 | 270 | 72 | 161 | M16x16 | M16x16 | | |
| PGR-1702/3 T | 330 | 300 | 270 | 280 | 330 | 372 | 287/332 | 96 | 161/206 | M16x18 | M16x18 | | |
| PGR-2502/3 T | 320 (*) | 285 (*) | 240 (*) | 300 | 340 | 370 | 324/342 (*) | 82 | 220/240 | M20x20 | M16x20 | | |
| PGR-3602/3 T | 350 (*) | 310 (*) | 270 (*) | 320 | 350 | 380 | 340/361 (*) | 90 | 220/241 | M20x16 | M16x1.5-n°20 | | |
| PGR-4802/3 T | 350 (*) | 310 (*) | 270 (*) | 350 | 400 | 435 | 350/370 (*) | 91 | 229/249 | M20x16 | M20x16 | | |
| PGR-6003 T | 410 | 370 | 330 | 400 | 450 | 490 | 413 | 90 | 297 | M20x20 | M20x1.5-n°20 | | |
| PGR-8003 T | 410 | 370 | 330 | 400 | 450 | 490 | 413 | 90 | 297 | M20x20 | M20x1.5-n°20 | | |
| PGR-9003 T | 500 | 460 | 420 | 460 | 500 | 540 | 490 | 165 | 305 | M24x24 | M18x1.5-n°36 | | |
| PGR-11003 T | 500 | 460 | 420 | 460 | 500 | 540 | 490 | 165 | 305 | M24x24 | M18x1.5-n°36 | | |

(*) Dimensions may change according to the selected hydraulic motors.

Series PGR W

WHEEL DRIVES

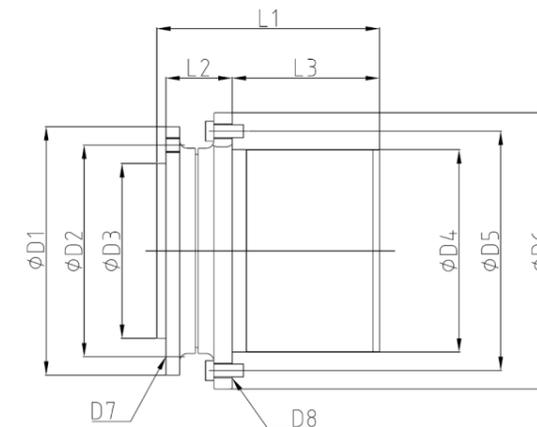
The **compact design, the enhanced performances** and the **high load tapered roller bearings** of PGR W series will deliver the requested **travel speed** and the desired **mobility** necessary to succeed in the wheeled applications, such as paving, agricultural or forestry machines.

By incorporating a disconnect device, available as option, PGR W series allows a vehicle to be towed in case of hydraulic system failure.

Equipped with internal parking brake and suitable for SAE and cartridge hydraulic motors.

| Size | Transmission Ratio i | Maximum Torque Nm | Braking Torque Nm | Maximum Input Speed rpm | Minimum Opening Pressure bar | Weight kg |
|--------------|-------------------------|----------------------|----------------------|----------------------------|---------------------------------|--------------|
| PGR-802 W | 20-54 | 8,000 | 150-300 | 3,500 | 15-20 | 58 |
| PGR-1702/3 W | 19-141 | 14,000 | 320-460 | 3,500 | 15-20 | 98 |
| PGR-2502/3 W | 16-151 | 20,000 | 200-600 (*) | 3,500 | 15-20 | 120 |
| PGR-3602/3 W | 16-151 | 28,000 | 200-600 (*) | 3,500 | 15-20 | 140 |
| PGR-4802/3 W | 16-151 | 38,000 | 200-600 (*) | 3,500 | 15-20 | 170 |
| PGR-6003 W | 64-202 | 48,000 | 320-700 | 3,000 | 15-30 | 250 |
| PGR-8003 W | 64-202 | 64,000 | 320-700 | 3,000 | 15-30 | 270 |
| PGR-9003 W | 64-202 | 72,000 | 600-1,300 | 3,000 | 15-23 | 400 |
| PGR-11003 W | 64-202 | 88,000 | 600-1,300 | 3,000 | 15-23 | 420 |

(*) Dimensions may change according to the selected hydraulic motors.



| Size | D1 | D2 | D3 | D4 | D5 | D6 | L1 | | L2 | L3 | | D7 | D8 |
|--------------|---------|---------|---------|-----|-----|-----|---------------|---------------|---------|---------------|---------------|----|----|
| | | | | | | | 2/3 Stages | 2/3 Stages | | 2/3 Stages | 2/3 Stages | | |
| PGR-802 W | 270 | 230 | 190 | 220 | 275 | 310 | 270 | 72 | 161 | M16x16 | M20x1.5x8 | | |
| PGR-1702/3 W | 330 | 300 | 270 | 280 | 335 | 372 | 287/332 | 96 | 161/206 | M16x18 | M22x1.5x10 | | |
| PGR-2502/3 W | 320 (*) | 285 (*) | 240 (*) | 300 | 355 | 400 | 324/342 (*) | 82 | 220/240 | M20x20 | M18x1.5-n°20 | | |
| PGR-3602/3 W | 350 (*) | 310 (*) | 270 (*) | 320 | 380 | 420 | 340/361 (*) | 90 | 220/241 | M20x16 | M22X1.5-n°16 | | |
| PGR-4802/3 W | 350 (*) | 310 (*) | 270 (*) | 350 | 400 | 435 | 350/370 (*) | 91 | 229/249 | M20x16 | M22X1.5-n°16 | | |
| PGR-6003 W | 410 | 370 | 330 | 400 | 450 | 490 | 413 | 90 | 297 | M20x20 | M22X1.5-n°16 | | |
| PGR-8003 W | 410 | 370 | 330 | 400 | 450 | 490 | 413 | 90 | 297 | M20x20 | M22X1.5-n°16 | | |
| PGR-9003 W | 500 | 460 | 420 | 460 | 510 | 550 | 490 | 165 | 305 | M24x24 | M22X1.5-n°24 | | |
| PGR-11003 W | 500 | 460 | 420 | 460 | 510 | 550 | 490 | 165 | 305 | M24x24 | M22X1.5-n°24 | | |

(*) Dimensions may change according to the selected hydraulic motors.

Series PGR W

TWO SPEED WHEEL DRIVES

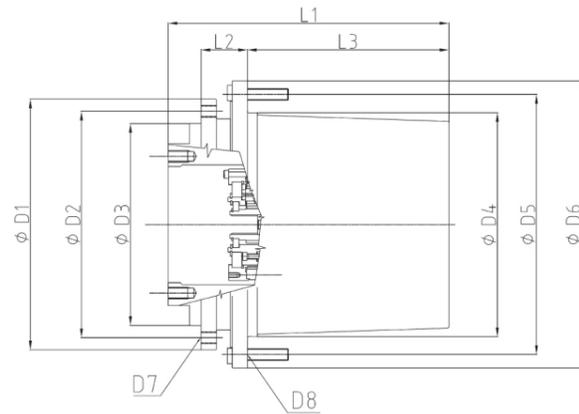
COMPLETE MECHANICAL SHIFTING MECHANISM

This **patented design drive**, hydraulically controlled shifting HI-LO, has been specifically developed for such application needing a significant **speed difference**, between working and travelling operation.

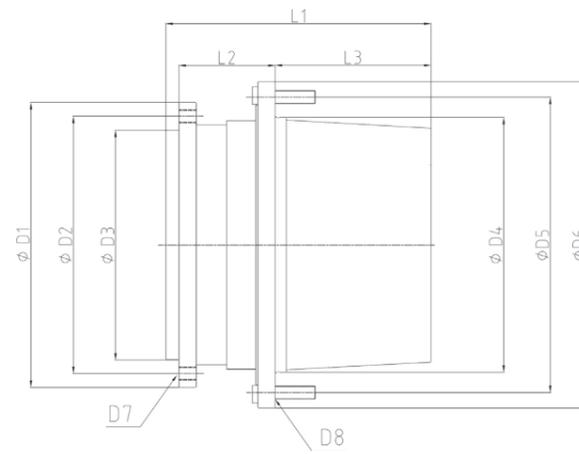
With its wide spread of ratios from HI to LO and the design solution without clutch, it is the ideal solution for paving machines, but also for other construction machines.

| Size | Transmission Ratio i | Maximum Torque Nm | Braking Torque Nm | Maximum Input Speed rpm | Minimum Opening Pressure bar | Weight kg |
|--------------|----------------------|-------------------|-------------------|-------------------------|------------------------------|-----------|
| PGR-3402/3 W | 33.7/119.5 | 34,000 | 480-600 | 3,800 | 30 | 240 |
| | 33.7/130.4 | | | | | |
| | 39.1/138.9 | | | | | |
| | 39.1/151.6 | | | | | |

VERSION A



VERSION B



| Size | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | D7 | D8 | Version |
|--------------|-----|-----|-----|-----|-----|-----|-----|------|-----|--------|------------|---------|
| PGR-3402/3 W | 410 | 370 | 330 | 367 | 425 | 470 | 460 | 76.2 | 330 | M20x20 | M20x1.5x16 | A |
| | | | | | | | 383 | 139 | 225 | | M20x1.5x12 | B |

Series PGR H

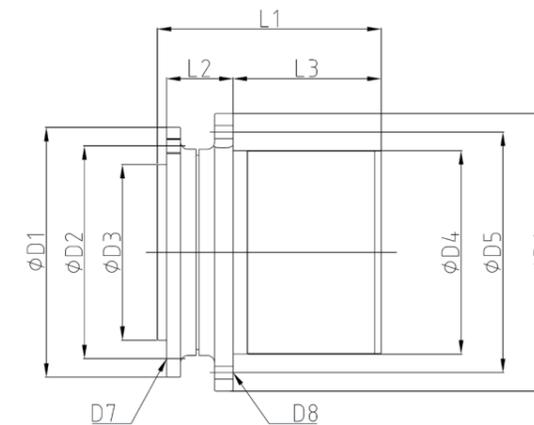
WINCH DRIVES

The PGR H (hoisting) series is the ideal solution for all lifting and winch applications, performing according to FEM standards, in particular the most common class M5-T5-L2 @ 25 rpm.

With its **increased power density** and **reduced dimensions**, the PGR H can be easily accommodated inside the drum, allowing at the same time to reduce at minimum drum's dimension.

The PGR H series features heavy duty tapered roller bearings and internal hydraulic released multidisc brake: it can accommodate the most common SAE axial piston motors but also orbit and electric motors upon request.

| Size | Transmission Ratio i | FEM Torque Nm | Braking Torque Nm | Maximum Input Speed rpm | Minimum Opening Pressure bar | Weight kg |
|--------------|----------------------|---------------|-------------------|-------------------------|------------------------------|-----------|
| PGR-802 H | 20-54 | 5,000 | 150-350 | 3,500 | 15-25 | 58 |
| PGR-1702/3 H | 19-141 | 12,000 | 250-500 | 3,500 | 15-30 | 98 |
| PGR-2502/3 H | 16-151 | 17,000 | 250-900 | 3,500 | 20-30 | 120 |
| PGR-3602/3 H | 16-151 | 26,000 | 250-900 | 3,500 | 20-30 | 140 |
| PGR-4802/3 H | 16-151 | 36,000 | 250-900 | 3,500 | 20-30 | 170 |
| PGR-6003 H | 64-202 | 42,000 | 400-700 | 3,000 | 20-30 | 250 |
| PGR-8003 H | 64-202 | 62,000 | 400-700 | 3,000 | 20-30 | 270 |
| PGR-9003 H | 64-202 | 75,000 | 500-1,500 | 3,000 | 20-30 | 400 |
| PGR-11003 H | 64-202 | 90,000 | 500-1,500 | 3,000 | 20-30 | 420 |



| Size | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | D7 | D8 |
|--------------|---------|---------|---------|-----|-----|-----|-------------|-----|------------|--------|--------|
| | | | | | | | 2/3 Stages | | 2/3 Stages | | |
| PGR-802 H | 270 | 230 | 190 | 220 | 260 | 300 | 270 | 72 | 161 | M16x16 | Ø18x16 |
| PGR-1702/3 H | 330 | 300 | 270 | 280 | 330 | 372 | 287/332 | 96 | 161/206 | M16x18 | Ø18x18 |
| PGR-2502/3 H | 320 (*) | 285 (*) | 240 (*) | 300 | 340 | 370 | 324/342 (*) | 82 | 220/240 | M20x20 | Ø18x20 |
| PGR-3602/3 H | 350 (*) | 310 (*) | 270 (*) | 320 | 350 | 380 | 340/361 (*) | 90 | 220/241 | M20x16 | Ø18x20 |
| PGR-4802/3 H | 350 (*) | 310 (*) | 270 (*) | 350 | 400 | 435 | 350/370 (*) | 91 | 229/249 | M20x16 | Ø22x16 |
| PGR-6003 H | 410 | 370 | 330 | 400 | 450 | 490 | 413 | 90 | 297 | M20x20 | Ø22x20 |
| PGR-8003 H | 410 | 370 | 330 | 400 | 450 | 490 | 413 | 90 | 297 | M20x20 | Ø22x20 |
| PGR-9003 H | 500 | 460 | 420 | 460 | 500 | 540 | 490 | 165 | 305 | M24x24 | Ø22x36 |
| PGR-11003 H | 500 | 460 | 420 | 460 | 500 | 540 | 490 | 165 | 305 | M24x24 | Ø22x36 |

(*) Dimensions may change according to the selected hydraulic motors.

Series PGR H

WINCH DRIVES

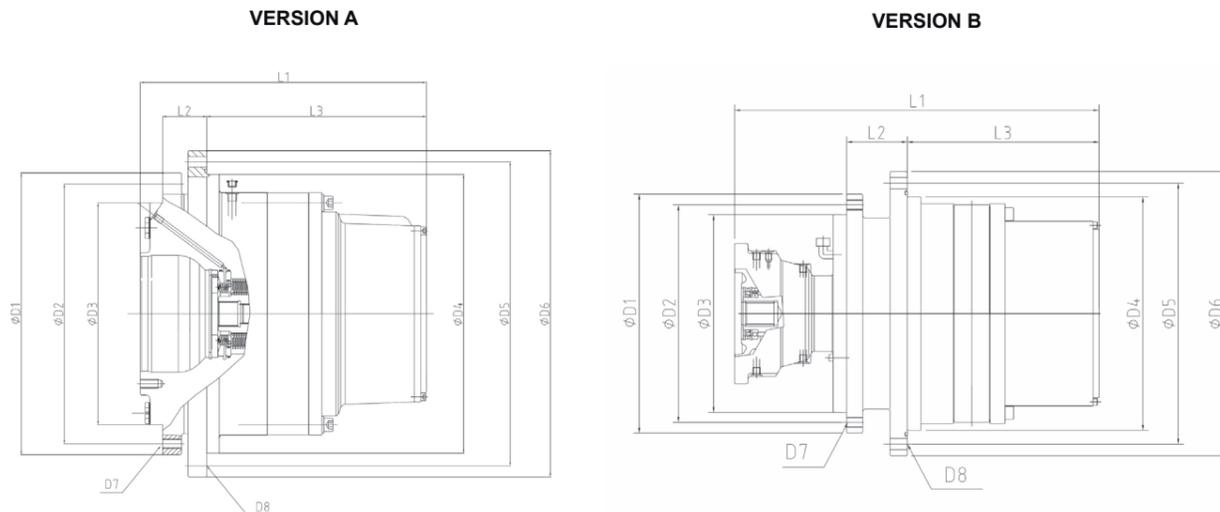
This modular PGR H series, designed mainly for mobile cranes, can easily be accommodated inside any cable drums.

In some configurations, the hydraulically operated, negative parking brake is external to the units, for a **better and easier serviceability**; some others feature dual input for SAE axial piston motors.

All units perform according to FEM standards, in particular the most common class M5-T5-L2 @ 25rpm.

| Size | Transmission Ratio i | FEM Torque Nm | Braking Torque Nm | Maximum Input Speed rpm | Minimum Opening Pressure bar | Weight kg |
|------------------|----------------------|---------------|-------------------|-------------------------|------------------------------|-----------|
| PGR-3503 H | 26/103 | 45,000 | 980 | 3,000 | 16 | 370 |
| PGR-6503 H | 75-110 | 77,000 | 1,600 | 3,000 | 20 | 550 |
| PGR-7503 H | 84.7-120 | 88,000 | 1,600 | 3,000 | 20 | 600 |
| PGR-7504 H | 526.4 | 88,000 | - | 3,000 | - | 640 |
| PGR-25003 H (**) | 187 | 210,000 | 1,350x2 brake | 3,000 | 18 | 2,050 |

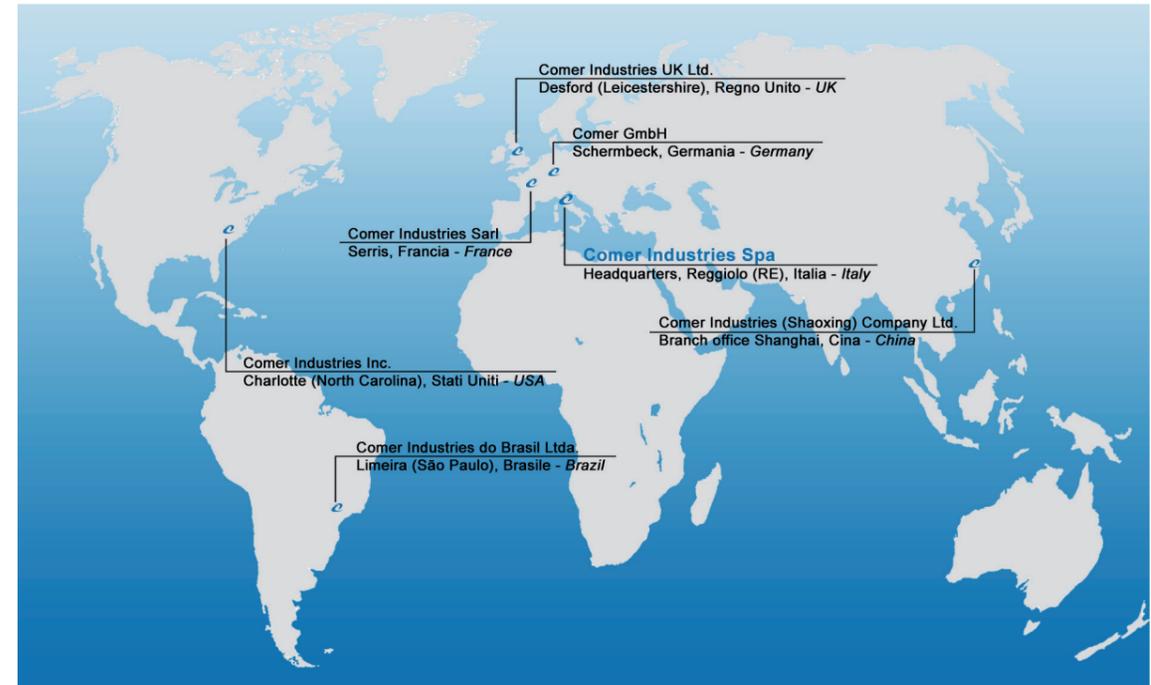
(**) Dual input.



| Size | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | D7 | D8 | Version |
|------------------|--------|-------|-------|-------|-------|-------|------------|-----|------------|-----------------|----------|---------|
| | | | | | | | 2/3 Stages | | 2/3 Stages | | | |
| PGR-3503 H | 445.5 | 405 | 368 | 435 | 486 | 530 | 536.4/680 | 113 | 306/358 | 3/4-10 UNC-n°24 | Ø21-n°24 | B |
| PGR-6503 H | 565.15 | 520.7 | 444.5 | 558.8 | 609.6 | 654 | 575 | 89 | 441.4 | 3/4-10UNC-n°30 | Ø21-n°32 | A/B |
| PGR-7503 H | 565.15 | 520.7 | 444.5 | 487.7 | 527.8 | 576.5 | 661 | 114 | 502.4 | M20-n°30 | Ø21-n°32 | A/B |
| PGR-7504 H | 565.15 | 520.7 | 444.5 | 558.8 | 609.6 | 654 | 869.5 | 89 | 528 | M24-n°31 | Ø21-n°32 | B |
| PGR-25003 H (**) | 784 | 720 | 664 | 790.6 | 835 | 884 | 1,265.5 | 160 | 808,5 | M30-n°30 | Ø32-n°30 | B |

(**) Dual input.

Global Presence



Comer Industries operates in **the main world markets** with its own sales organization and it is present in major foreign countries with its own **sales subsidiaries** in the United States, Brazil, China, Germany, France and the United Kingdom.

In countries where there are not own branches, product distribution is carried out through an **international network of distributors and agents**. In Italy a direct sales network is operating.

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Please refer to Comer Industries website for updated information: <http://www.comerindustries.com/en/contacts>
The updated network of Comer Industries' distributors and agents are available at: <http://www.comerindustries.com/en/contacts/dealer-locator.html>



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