

CE



MADE IN ITALY



DESIGN



PRODUCTION



INSTALLATION



ASSISTANCE



**Production of
Lubrication Equipment
and Fluid Monitoring
Systems**

**GENERAL
CATALOGUE 15**



INTERNATIONAL REGISTRATION
no. 704835

MADE IN ITALY

40
SINCE 1974

EXPERIENCE,
QUALITY
AND PROFESSIONALISM
SINCE 1974

THE EVOLUTION OF OUR PRODUCTION



1982



1985



1986



1987



1988



1991



1992



1999



2002



2004



2008



2011



2010



2010



2013



2015



FLEXBIMEC was founded in 1974 as a manufacturer of hydraulic components. The knowledge acquired in that field enabled the company to specialize itself in the production of dispensing systems for lubricants, developing over the years a broad range of lubrication equipment.

The first product manufactured by Flexbimec was the pneumatic pump which very quickly became well – known for its easy handling and for its reliability.

And so the company's focus still is the production of high quality pumps which nowadays are present worldwide, even in the most specialized markets.

Thanks to a continuous and careful technical development, Flexbimec is able to offer a range of reliable and market – oriented products for the supply and the monitoring of lubricants.

The FLEXBIMEC product range includes:

- Grease supply equipment;
- Oil supply and electronic, computer – based oil monitoring equipment;
- Diesel supply and electronic, computer – based diesel monitoring equipment;
- Compressed air supply and washing equipment;
- Equipment for the mixing and dosing of fluids;
- Equipment for the collection, handling and storage of waste fluids, particularly of waste oils;

Flexbimec equipment is used in various applications such as in car, motorbike and commercial vehicle workshops, for industrial and agricultural machinery maintenance, in car wash sites, or in boat and ship maintenance.

Besides of manufacturing the products, FLEXBIMEC is also projecting, installing and maintaining **turnkey facilities** for the handling and monitoring of lubricants in





car, motorbike and commercial vehicle workshops. Until now Flexbimec has done more than 500 of those lubrication facilities based on the individual requirements of its customers.

The products are distributed through a worldwide network of dealers with a continuously growing export rate.

In 2006 Flexbimec has started a process of logistical restructuring and internal expansion in its plant which is situated on a total surface of 63.000 m² with a covered area of approx. 7.000 m² dedicated to the R & D and to the production. Also there are special areas for technical training, showroom and the testing of new products included.

Flexbimec has a modern organization with a quality assurance system according to **UNI EN ISO 9001:2008**.

Service and consulting are other strong arguments of the company: the customer is continuously accompanied by technically qualified staff in order to identify each of his requirements and to offer satisfying solutions to him.

Flexbimec has issued this new catalogue as a guide for your requirements regarding lubrication equipment, starting from the most simple accessory up to complete, computerized fluid monitoring systems.

Our company is sure that the variety of the innovative product range which has been developed by a continuous research of the user requirements, will help you to select and to install the equipment most suitable to simplify your daily work.



GREASE

| | |
|---|--------------|
| Pneumatic grease pumps | Page 9 - 16 |
| Pneumatic and manual grease supply kits..... | Page 17 - 27 |
| Grease nipples and automatic lubricators..... | Page 28 |
| Grease guns and cartridges..... | Page 29 |
| Accessories for grease lubrication | Page 30 - 31 |
| Digital grease flow meters..... | Page 32 - 33 |
| Accessories for grease pumps and kits..... | Page 34 - 35 |
| Hose reels and hoses for grease..... | Page 36 - 37 |

OIL

| | |
|--|--------------|
| Pneumatic oil pumps..... | Page 38 - 48 |
| Accessories for pneumatic oil pumps | Page 49 - 50 |
| Electric oil pumps..... | Page 51 - 53 |
| Manual oil pumps..... | Page 54 - 55 |
| Pneumatic and manual oil dispensing units..... | Page 56 - 57 |
| Oil control guns and accessories..... | Page 58 - 59 |
| Electronic and mechanical oil flow meters..... | Page 60 - 67 |
| Hose reels and hoses for oil | Page 68 - 69 |
| Suction guns, push type grease guns, oilers..... | Page 70 |
| Plastic measures and funnels..... | Page 71 |
| Mobile and stationary oil dispensing kits..... | Page 72 - 87 |
| Oil supply units | Page 88 - 93 |
| Spill containment pallets / Drum lifts and cradle..... | Page 94 - 99 |
| Oil storage tanks / Storage units for drums and tanks..... | Page 100 |
| Storage containers for drums and tanks..... | Page 101 |
| Heaters / Tank fittings / Hose storage rack..... | Page 102 |

**SERVICE COLUMNS
AND SERVICE STANDS**

| | |
|---|----------------|
| Service columns and service stands..... | Page 103 - 107 |
|---|----------------|

PIPEWORK

| | |
|--|----------------|
| Pipework components and accessories..... | Page 108 - 111 |
|--|----------------|

MONITORING

| | |
|--|----------------|
| Electronic fluids monitoring and dosing systems..... | Page 112 - 117 |
| Level gauges..... | Page 118 - 119 |
| Components for the automation of installations..... | Page 120 |

WASTE OIL

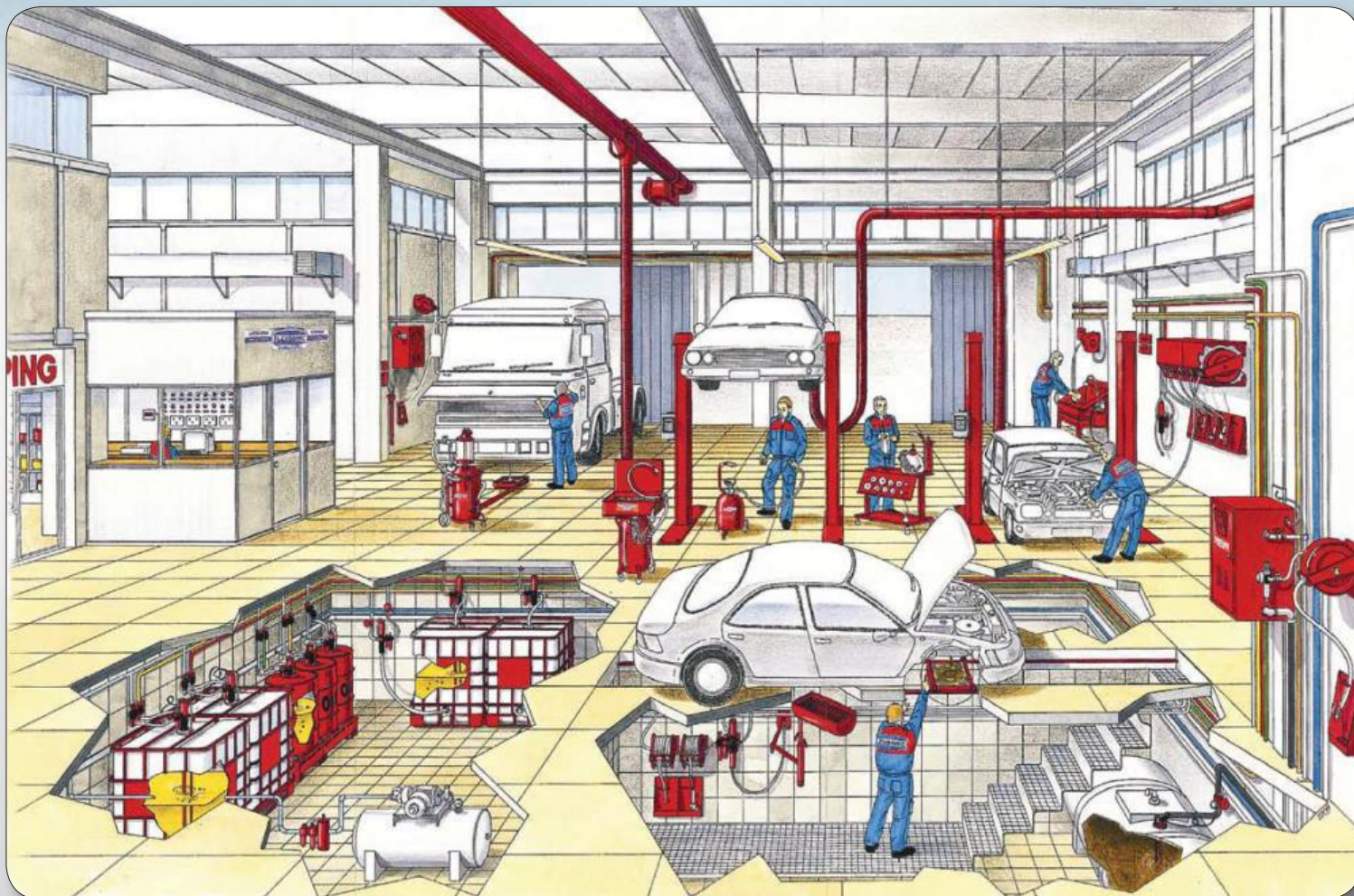
| | |
|---|----------------|
| Introduction..... | Page 121 |
| Waste oil drainers | Page 122 - 127 |
| Waste oil suction units | Page 127 - 129 |
| Combined waste oil drainers and suction units | Page 130 - 134 |
| Pneumatic and electric waste oil suction systems..... | Page 135 - 139 |
| Pneumatic diaphragm pumps..... | Page 140 |
| Accessories diaphragm pumps / Electric waste oil pump / | |
| Accessories waste oil draining | Page 141 |
| Waste oil treatment accessories..... | Page 142 |
| Waste oil storage tanks and accessories | Page 143 |
| Waste oil storage tanks and accessories | Page 143 |
| Brake fluid changers and accessories | Page 144 - 146 |

DIESEL

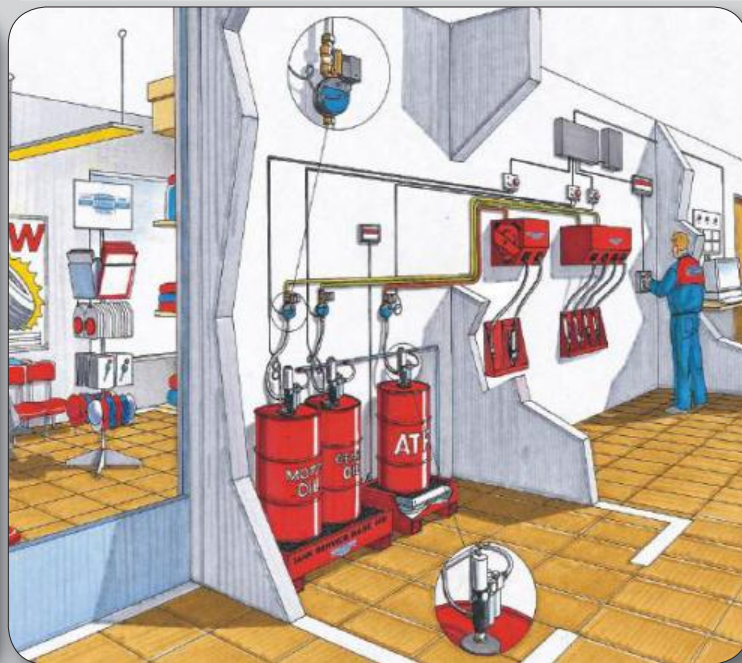
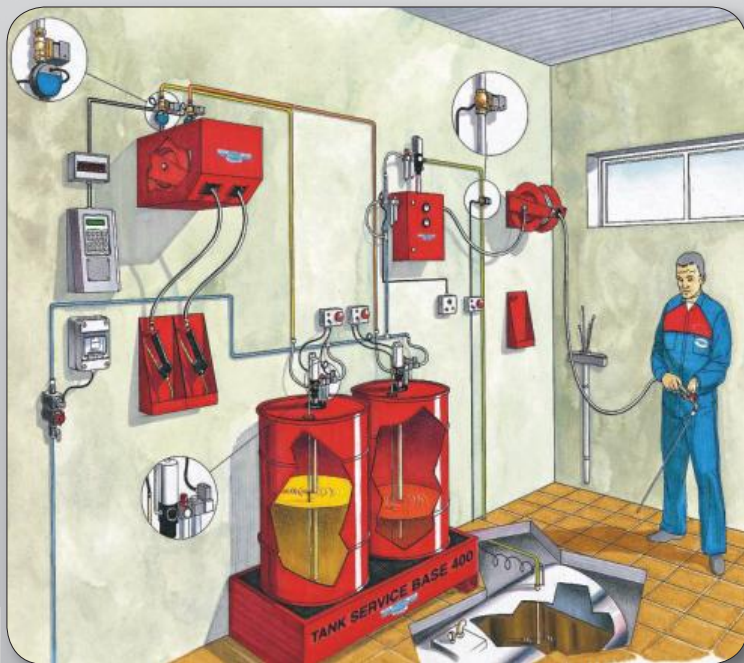
| | |
|--|----------------|
| Introduction..... | Page 147 |
| Pneumatic diesel pumps and diesel transfer kits..... | Page 148 - 149 |
| Electric diesel pumps 12 VDC / 24 VDC..... | Page 150 - 151 |
| Electric diesel pumps 230 VAC..... | Page 152 |
| Electric diesel transfer kits..... | Page 153 - 154 |
| Electric diesel supply units | Page 155 - 157 |
| Diesel dispensing nozzles and accessories | Page 158 |
| Diesel flow meters | Page 159 |
| Diesel filters and foot valves..... | Page 160 |
| Hose reels for diesel | Page 161 - 167 |

| | |
|---|--|
| PETROL | Pneumatic and electric petrol pumps..... Page 168 Pneumatic and electric petrol dispensing kits..... Page 169 Mobile petrol suction units..... Page 170 Petrol supply gun / hoses / petrol flow meter Page 171 Hose reels for petrol..... Page 172 Jerry cans Page 173 |
| PORTABLE STORAGE TANKS | Portable storage tanks for diesel – petrol – AdBlue®/DEF/AUS32..... Page 174 |
| AdBlue®/DEF/AUS32 | Manual and electric transfer pumps for AdBlue®/DEF/AUS32..... Page 175 – 176 Pneumatic and electric AdBlue®/DEF/AUS32 dispensing kits..... Page 177 - 179 AdBlue®/DEF/AUS32 flow meters Page 180 AdBlue®/DEF/AUS32 dispensing nozzles and accessories Page 181 |
| WINDSHIELD WASHER FLUID | Windshield washer fluid dispensing components..... Page 182 Windshield washer fluid dispensing kits..... Page 183 |
| OTHER FLUIDS | Pneumatic stainless steel pumps Page 184 – 185 Accessories for pneumatic stainless steel pumps..... Page 186 Manual stainless steel pumps / Plastic chemical pumps Page 187 Electric stainless steel pumps Page 188 - 189 |
| WASHING | Pressure sprayers and foamers..... Page 190 - 193 Washing and spraying accessories..... Page 194 – 197 Parts cleaners Page 198 - 200 |
| COMPRESSED AIR | Tyre inflators..... Page 201 Compressed air accessories..... Page 202 Compressed air treatment components..... Page 203 Compressed air pipework components and accessories Page 204 – 205 Hose reels for compressed air..... Page 206 - 207 |
| HOSE REELS | Introduction for choosing the suitable equipment..... Page 208 - 211 Automatic rewind, spring-driven hose reels Page 212 – 227 Manual hose reels Page 228 - 231 Motor operated hose reels Page 232 – 233 Hose reels, series EASY STEEL..... Page 234 Hose reels for welding..... Page 235 Vacuum / suction hose reels Page 236 Exhaust extraction hose reels and hoses..... Page 237 Swivel joints and connection curves Page 238 – 240 Hose reel accessories Page 241 Hoses..... Page 242 - 243 |
| FLUID MIXING | Fluid mixing equipment DOSAMIX 8400 Page 244 - 245 |
| END - OF - LIFE VEHICLE DRAINAGE | End – of – life vehicle drainage equipment..... Page 246 - 252 |
| FILTRATION SYSTEMS | Mobile filtration units for diesel and oils..... Page 253 |
| TROLLEYS | Trolleys..... Page 254 |
| PART NUMBER INDEX | Page 255 - 258 |

FLEXBIMEC TECHNOLOGY AND EXPERIENCE FOR YOUR NEEDS



YOUR SPECIALISTS IN LUBRICATION EQUIPMENT



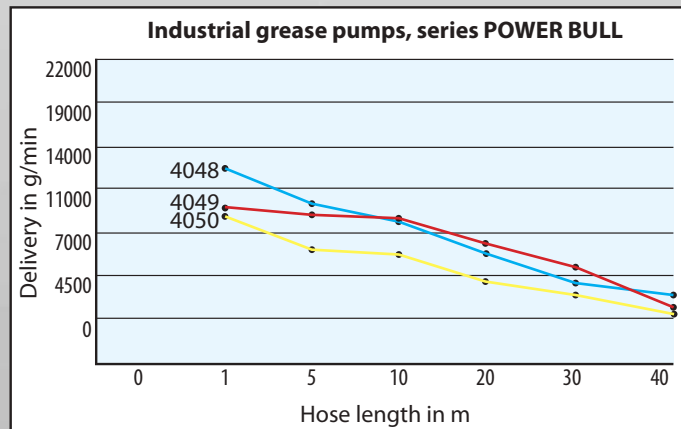
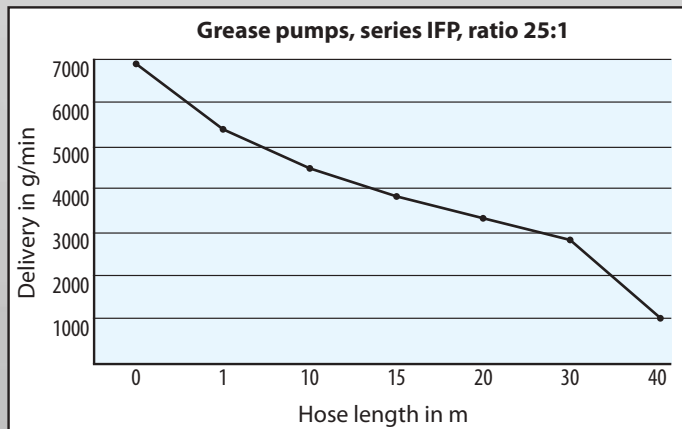
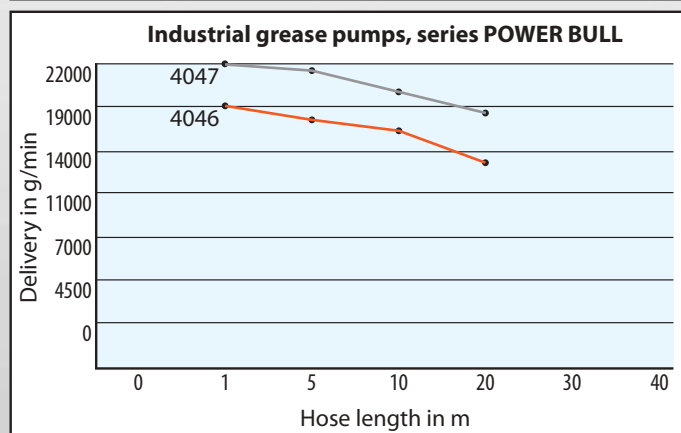
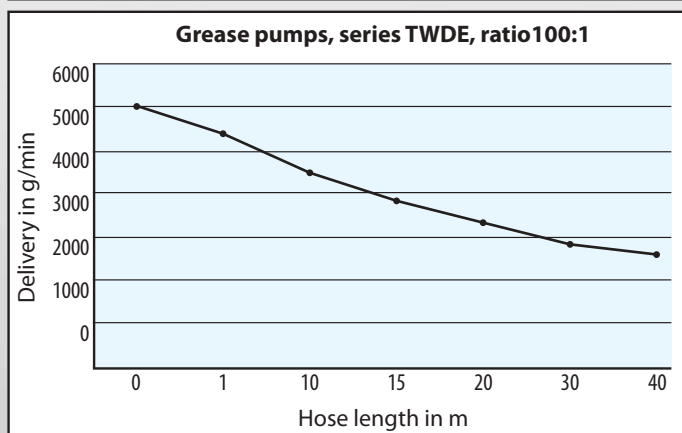
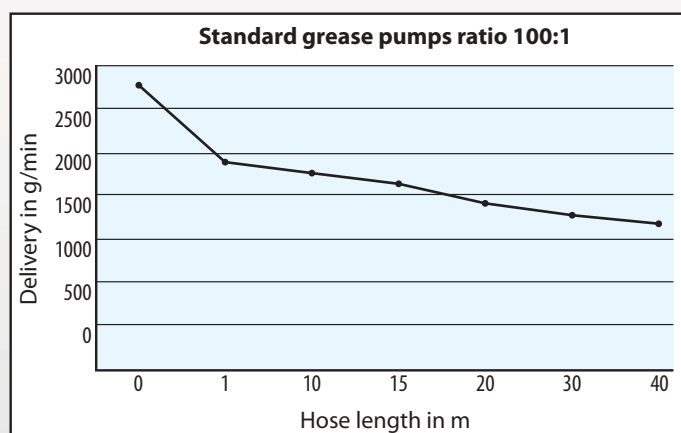
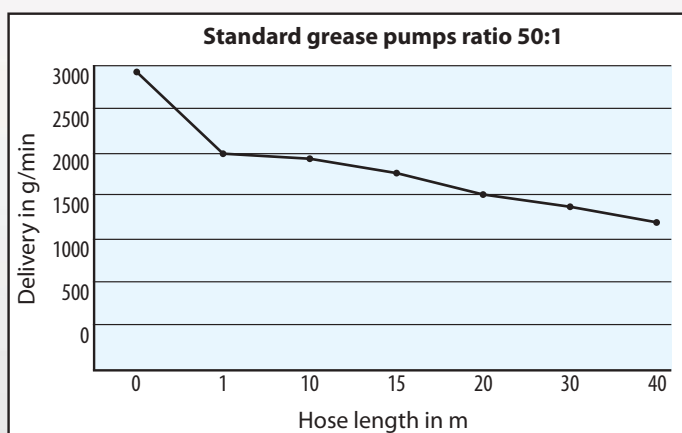
FLEXBIMEC pneumatic grease pumps are a well - proven product line since many years. The brass and aluminum alloy pneumatic motor assures a reliable use and a simple maintenance. The pumping system includes a rod in hardened steel, suitable also for heavy duty applications. The gaskets and seals are suitable for the use with almost all multipurpose greases on the basis of mineral oil from viscosity NLGI 00 up to NLGI 3.

The choice of the suitable pump for the individual application depends a lot on the type and the characteristics of the lubricant that shall be pumped.

Pumping grease means to move a high viscosity fluid which at the dispensing point presents a dense condition.

The **VISCOSITY** of a fluid describes its capability to resist the movements of its particles.

The **COMPRESSION RATIO** describes the ratio between the surface of the piston inside of the pump motor and the surface of the piston that is pumping the fluid. The bigger this value is, the higher is the outlet pressure of the fluid. Since greases are mixtures of mineral oils and soaps (dense, inorganic substances) and therefore have a high viscosity, it is necessary to use pumps for the dispensing that have a high compression ratio such as 50:1 – or 100:1 – pumps.



The charts are only indications and cannot consider all factors affecting the pumping result such as viscosity, temperature, dimension of hose or pipe, pumping distance, etc.

Test conditions:

lithium grease NLGI 0 – ambient temperature 22°C - inlet pressure (compressed air) 8 bar – Free 1/2" for 50:1 and 100:1 - pumps, standard series, 1" for pump series Power Bull and TWDE

Pneumatic pumps for the dispensing of grease at short and medium distances or for high pressure lubrication.

50:1 Compression ratio

Max outlet pressure **400 bar**



For **16 kg** – pails

Art. no. **4018**

Max outlet pressure **400 bar**



For **18/25 kg** – pails

Art. no. **4020**

Max outlet pressure **400 bar**



For **50 kg** – drums

Art. no. **4060**

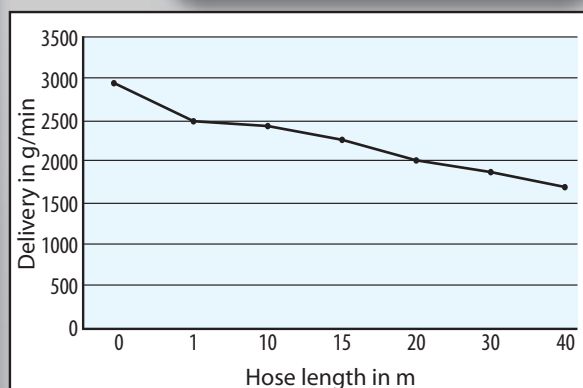
Max outlet pressure **400 bar**



For **180 kg** – drums

Art. no. **4080**

| Art. no. | 4018 | 4020 | 4060 | 4080 |
|---|-------------------------------|--------------|--------------|--------------|
| Compressed air supply | Pressure min 2 bar, max 8 bar | | | |
| Compression ratio | 50:1 | 50:1 | 50:1 | 50:1 |
| Outlet pressure | 400 bar | 400 bar | 400 bar | 400 bar |
| Delivery | 2900 g/min | 2900 g/min | 2900 g/min | 2900 g/min |
| Connection compressed air | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) |
| Connection lubricant outlet | 1/4" BSP (M) | 1/4" BSP (M) | 1/4" BSP (M) | 1/4" BSP (M) |
| Max air consumption with 8 bar pressure | 78 l/min | 78 l/min | 78 l/min | 78 l/min |
| Length suction tube | 335 mm | 450 mm | 750 mm | 950 mm |
| Diameter suction tube | 28 mm | 28 mm | 28 mm | 28 mm |
| Dimensions LxWxH (mm) | 95x95x690 | 95x95x780 | 95x95x1005 | 95x95x1250 |
| Suitable for pails / drums of | 16 kg | 18 - 25 kg | 50 kg | 180 kg |
| Weight | 3,8 kg | 4,2 kg | 5 kg | 5,6 kg |



See accessories on pages 30 – 37!

The a. m. performance values are based upon the following test conditions:

lithium grease NLGI 0 at 22°C -- Compressed air pressure 8 bar -- free flow outlet 1/2".

Pneumatic pumps for the dispensing of grease at long distances or for high pressure lubrication.

100:1 Compression ratio

Max outlet pressure **800 bar**



For **16 kg** – pails

Art. no. **4019**

Max outlet pressure **800 bar**



For **18/25 kg** – pails

Art. no. **4021**

Max outlet pressure **800 bar**



For **50 kg** – drums

Art. no. **4061**

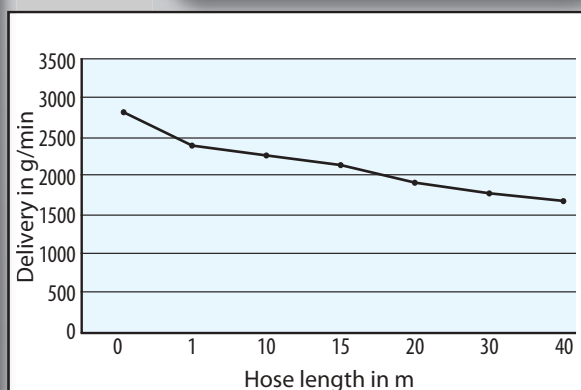
Max outlet pressure **800 bar**



For **180 kg** – drums

Art. no. **4081**

| Art. no. | 4019 | 4021 | 4061 | 4081 |
|---|-------------------------------|--------------|--------------|--------------|
| Compressed air supply | Pressure min 2 bar, max 8 bar | | | |
| Compression ratio | 100:1 | 100:1 | 100:1 | 100:1 |
| Outlet pressure | 800 bar | 800 bar | 800 bar | 800 bar |
| Delivery | 2700 g/min | 2700 g/min | 2700 g/min | 2700 g/min |
| Connection compressed air | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) |
| Connection lubricant outlet | 1/4" BSP (M) | 1/4" BSP (M) | 1/4" BSP (M) | 1/4" BSP (M) |
| Max air consumption with 8 bar pressure | 110 l/min | 110 l/min | 110 l/min | 110 l/min |
| Length suction tube | 335 mm | 450 mm | 750 mm | 950 mm |
| Diameter suction tube | 28 mm | 28 mm | 28 mm | 28 mm |
| Dimensions LxWxH (mm) | 95x95x690 | 95x95x780 | 95x95x1005 | 95x95x1250 |
| Suitable for pails / drums of | 16 kg | 18 - 25 kg | 50 kg | 180 kg |
| Weight | 3,8 kg | 4,2 kg | 5 kg | 5,6 kg |



See accessories on pages 30 – 37!

The a. m. performance values are based upon the following test conditions:

lithium grease NLGI 0 at 22°C -- Compressed air pressure 8 bar -- free flow outlet 1/2".

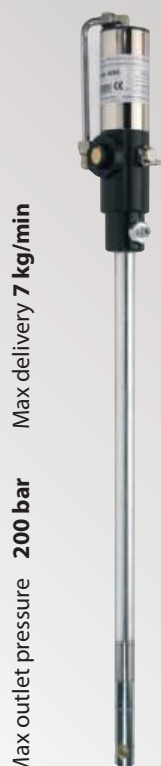
Pneumatic pumps for the transfer of grease or high viscosity oils at a constant pressure. Suitable also for the use as grease refilling pumps for centralized lubrication systems.

25:1 Compression ratio

7:1 Compression ratio

45:1 Compression ratio

Max outlet pressure **200 bar**



25:1

For **18/25 kg** – pails

Art. no. **4022**

Max outlet pressure **200 bar**



25:1

For **50 kg** – drums

Art. no. **4062**

Max outlet pressure **200 bar**



25:1

For **180 kg** – drums

Art. no. **4082**

Max outlet pressure **56 bar**



7:1

For **180 kg** – drums

Art. no. **4043**

Max outlet pressure **360 bar**



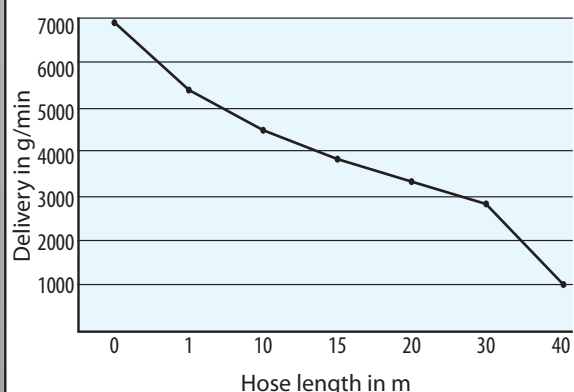
45:1

For **180 kg** – drums

Art. no. **4083**

| Art. no. | 4043 | 4022 | 4062 | 4082 | 4083 |
|---|-------------------------------|--------------|--------------|--------------|--------------|
| Compressed air supply | Pressure min 2 bar, max 8 bar | | | | |
| Compression ratio | 7:1 | 25:1 | 25:1 | 25:1 | 45:1 |
| Outlet pressure | 56 bar | 200 bar | 200 bar | 200 bar | 360 bar |
| Delivery | 9800 g/min | 7000 g/min | 7000 g/min | 7000 g/min | 6900 g/min |
| Connection compressed air | 3/8" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) |
| Connection lubricant outlet | 3/4" BSP (M) | 1/2" BSP (M) | 1/2" BSP (M) | 1/2" BSP (M) | 1/2" BSP (M) |
| Max air consumption with 8 bar pressure | 165 l/min | 78 l/min | 78 l/min | 78 l/min | 78 l/min |
| Length suction tube | 950 mm | 450 mm | 750 mm | 950 mm | 950 mm |
| Diameter suction tube | 33 mm | 28 mm | 28 mm | 28 mm | 28 mm |
| Dimensions LxWxH (mm) | 95x95x1250 | 95x95x690 | 95x95x780 | 95x95x1005 | 95x95x1250 |
| Suitable for pails / drums of | 180 kg | 18 - 25 kg | 50 kg | 180 kg | 180 kg |
| Weight | 6 kg | 4,2 kg | 5 kg | 5,6 kg | 5,8 kg |

Grease pumps, series IFP, compression ratio 25:1



See accessories on pages 30 – 37!

The a. m. performance values are based upon the following test conditions: lithium grease NLGI 0 at 22°C -- Compressed air pressure 8 bar -- free flow outlet 3/4".

Pneumatic pumps for the dispensing of grease – particularly high viscosity grease - or for high pressure lubrication at long distances. These pumps combine a high compression ratio with an innovative constructional concept that permits to increase the delivery of the pump considerably.

In the TWD Evolution series the escape of compressed air is facilitated by the use of a double distributor which at the same time reduces the formation of condensation water inside of the pump motor.

100:1 Compression ratio

Max outlet pressure **800 bar**



For **16 kg** – pails

Art. no. **4019TWDE**

Max outlet pressure **800 bar**



For **18/25 kg** – pails

Art. no. **4021TWDE**

Max outlet pressure **800 bar**



For **50 kg** – drums

Art. no. **4061TWDE**

Max outlet pressure **800 bar**

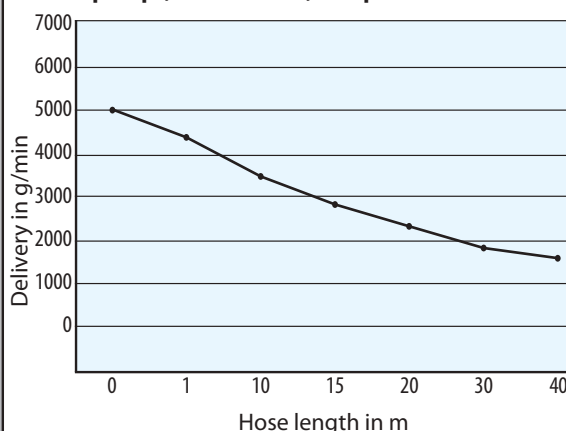


For **180 kg** – drums

Art. no. **4081TWDE**

| Art. no. | 4019 TWDE | 4021TWDE | 4061TWDE | 4081TWDE |
|---|-------------------------------|--------------|--------------|--------------|
| Compressed air supply | Pressure min 2 bar, max 8 bar | | | |
| Compression ratio | 100:1 | 100:1 | 100:1 | 100:1 |
| Outlet pressure | 800 bar | 800 bar | 800 bar | 800 bar |
| Delivery | 5000 g/min | 5000 g/min | 5000 g/min | 5000 g/min |
| Connection compressed air | 3/8" BSP (F) | 3/8" BSP (F) | 3/8" BSP (F) | 3/8" BSP (F) |
| Connection lubricant outlet | 1/2" BSP (M) | 1/2" BSP (M) | 1/2" BSP (M) | 1/2" BSP (M) |
| Max air consumption with 8 bar pressure | 165 l/min | 165 l/min | 165 l/min | 165 l/min |
| Length suction tube | 335 mm | 450 mm | 750 mm | 950 mm |
| Diameter suction tube | 28 mm | 28 mm | 28 mm | 28 mm |
| Dimensions LxWxH (mm) | 95x95x690 | 95x95x780 | 95x95x1005 | 95x95x1250 |
| Suitable for pails / drums of | 16 kg | 18 - 25 kg | 50 kg | 180 kg |
| Weight | 3,9 kg | 4,3 kg | 5,1 kg | 5,7 kg |

Grease pumps, series TWDE, compression ratio 100:1



See accessories on pages 30 – 37!

The a. m. performance values are based upon the following test conditions: lithium grease NLGI 0 at 22°C – Compressed air pressure 8 bar – free flow outlet 1/2".



PNEUMATIC PISTON GREASE PUMPS INDUSTRIAL PUMP SERIES "POWER BULL"

Heavy duty pneumatic pumps, industrial pump series "Power Bull", designed for the supply of grease under demanding conditions. Particularly suitable for the grease distribution in pipeworks and installations where a simultaneous supply of grease is required on different dispensing points at high pressure and/or with a high delivery.

The high quality of the materials used in order to realize the innovative constructional concept of the pneumatic motors of this series, guarantees the following characteristics and advantages:

- Efficiency of a continuous flow,
- Low loudness,
- Limited number of piston strokes,
- Low vibrations,
- Easy handling and interchangeability of components,
- System of condensation water draining, to avoid the pulverization into the surrounding area,
- Wide variety of accessories.

The pumps are available in various models with different compression ratios and delivery performances so that they offer a solution for all principal requirements in applications.



| Art. no. 4046 | Grease type NLGI | | | | |
|---------------|------------------|-------|-------|-------|----------|
| m | 0 | 1 | 2 | 3 | Pressure |
| 1 | 19,00 | 18,00 | 18,00 | 18,00 | 104 bar |
| 5 | 18,00 | 16,00 | 13,20 | 11,00 | 96 bar |
| 10 | 17,50 | 14,90 | 12,60 | 9,10 | 70 bar |
| 20 | 13,80 | 11,10 | 7,60 | 6,90 | 49 bar |

| Art. no. 4047 | Grease type NLGI | | | | |
|---------------|------------------|-------|-------|-------|----------|
| m | 0 | 1 | 2 | 3 | Pressure |
| 1 | 22,00 | 21,00 | 21,00 | 21,00 | 56 bar |
| 5 | 21,50 | 20,00 | 16,90 | 14,20 | 38 bar |
| 10 | 20,00 | 18,40 | 15,00 | 12,10 | 20 bar |
| 20 | 18,60 | 17,00 | 10,20 | 7,40 | 14 bar |

| Art. no. 4048 | Grease type NLGI | | | | |
|---------------|------------------|-------|-------|------|----------|
| m | 0 | 1 | 2 | 3 | Pressure |
| 1 | 15,00 | 12,70 | 11,60 | 9,30 | 240 bar |
| 5 | 14,60 | 10,30 | 8,50 | 5,30 | 200 bar |
| 10 | 10,50 | 8,00 | 6,20 | 3,80 | 165 bar |
| 20 | 8,60 | 5,20 | 4,10 | 3,10 | 140 bar |
| 30 | 6,50 | 4,40 | 3,80 | 2,20 | 130 bar |
| 40 | 5,30 | 4,10 | 3,40 | 1,70 | 110 bar |
| 50 | 4,20 | 3,80 | 6,00 | 0,80 | 85 bar |
| 70 | 3,00 | 2,50 | 1,80 | 0,30 | 60 bar |

| Art. no. 4049 | Grease type NLGI | | | | |
|---------------|------------------|------|------|------|----------|
| m | 0 | 1 | 2 | 3 | Pressure |
| 1 | 13,10 | 9,60 | 8,60 | 7,80 | 400 bar |
| 5 | 12,90 | 9,00 | 7,90 | 5,60 | 360 bar |
| 10 | 12,20 | 8,20 | 6,70 | 4,00 | 240 bar |
| 20 | 10,60 | 6,40 | 4,80 | 2,30 | 220 bar |
| 30 | 8,80 | 4,70 | 3,10 | 2,10 | 180 bar |
| 40 | 8,00 | 3,20 | 2,50 | 1,70 | 150 bar |
| 50 | 7,60 | 2,80 | 2,20 | 1,40 | 110 bar |
| 70 | 7,20 | 2,50 | 1,90 | 0,90 | 85 bar |

| Art. no. 4050 | Grease type NLGI | | | | |
|---------------|------------------|------|------|------|----------|
| m | 0 | 1 | 2 | 3 | Pressure |
| 1 | 7,00 | 6,30 | 5,70 | 5,10 | 720 bar |
| 5 | 6,80 | 5,80 | 5,20 | 4,10 | 680 bar |
| 10 | 6,40 | 5,30 | 4,70 | 3,50 | 420 bar |
| 20 | 5,90 | 4,30 | 3,50 | 2,10 | 400 bar |
| 30 | 4,80 | 3,30 | 2,90 | 1,90 | 370 bar |
| 40 | 4,50 | 2,90 | 2,50 | 1,70 | 340 bar |
| 50 | 4,30 | 2,60 | 2,20 | 1,60 | 250 bar |
| 70 | 4,00 | 2,20 | 2,10 | 1,30 | 180 bar |

Grease type NLGI 0

| | | Art. no. Pump | | | | |
|-------------|----|---------------|-------|-------|-------|------|
| Hose length | m | 4046 | 4047 | 4048 | 4049 | 4050 |
| | 1 | 19,00 | 22,00 | 15,00 | 13,00 | 7,00 |
| | 5 | 18,00 | 21,50 | 14,60 | 12,50 | 6,80 |
| | 10 | 17,50 | 20,00 | 10,50 | 11,60 | 6,40 |
| | 20 | 13,80 | 18,60 | 8,60 | 10,00 | 5,90 |
| | 30 | | | 6,50 | 8,60 | 4,80 |
| | 40 | | | 5,30 | 6,00 | 4,50 |
| | 50 | | | 4,20 | 5,40 | 4,30 |
| | 70 | | | 3,00 | 4,00 | 4,00 |

Grease type NLGI 2

| | | Art. no. Pump | | | | |
|-------------|----|---------------|-------|-------|------|------|
| Hose length | m | 4046 | 4047 | 4048 | 4049 | 4050 |
| | 1 | 18,00 | 21,00 | 11,60 | 8,60 | 5,70 |
| | 5 | 13,20 | 16,90 | 8,50 | 7,90 | 5,20 |
| | 10 | 12,60 | 15,00 | 6,20 | 6,70 | 4,70 |
| | 20 | 7,60 | 10,20 | 4,10 | 4,80 | 3,50 |
| | 30 | | | 3,80 | 3,10 | 2,90 |
| | 40 | | | 3,40 | 2,50 | 2,50 |
| | 50 | | | 6,00 | 2,20 | 2,20 |
| | 70 | | | 2,00 | 1,90 | 2,10 |

The a. m. performance values refer to the pump delivery expressed in kg/min

Grease type NLGI 1

| | | Art. no. Pump | | | | |
|-------------|----|---------------|-------|-------|------|------|
| Hose length | m | 4046 | 4047 | 4048 | 4049 | 4050 |
| | 1 | 18,00 | 21,00 | 12,70 | 9,60 | 6,30 |
| | 5 | 16,00 | 20,00 | 10,30 | 9,00 | 5,80 |
| | 10 | 14,90 | 18,40 | 8,00 | 8,20 | 5,30 |
| | 20 | 11,10 | 17,00 | 5,20 | 6,40 | 4,30 |
| | 30 | | | 4,40 | 4,70 | 3,30 |
| | 40 | | | 4,10 | 3,20 | 2,90 |
| | 50 | | | 3,80 | 2,80 | 2,60 |
| | 70 | | | 1,80 | 2,50 | 2,20 |

Grease type NLGI 3

| | | Art. no. Pump | | | | |
|-------------|----|---------------|-------|------|------|------|
| Hose length | m | 4046 | 4047 | 4048 | 4049 | 4050 |
| | 1 | 18,00 | 21,00 | 9,30 | 7,80 | 5,10 |
| | 5 | 11,00 | 14,20 | 5,30 | 5,60 | 4,10 |
| | 10 | 9,10 | 12,10 | 3,80 | 4,00 | 3,50 |
| | 20 | 6,90 | 7,40 | 3,10 | 2,30 | 2,10 |
| | 30 | | | 2,20 | 2,10 | 1,90 |
| | 40 | | | 1,70 | 1,70 | 1,70 |
| | 50 | | | 0,80 | 1,40 | 1,60 |
| | 70 | | | 0,30 | 0,90 | 1,30 |

The a. m. performance values are based upon the following test conditions:
Compressed air pressure 8 bar
- temperature 24°C - rubber outlet hose ø 1" for the art. nos. 4048 - 4049 - 4050 and rubber outlet hose ø 1' 1/2" for the art. nos. 4046 and 4047.

Delivery **19 kg/min**

Max outlet pressure **100 bar**



Art. no. **4046**

Delivery **22 kg/min**

Max outlet pressure **56 bar**



Art. no. **4047**

Delivery **15 kg/min**

Max outlet pressure **240 bar**



Art. no. **4048**

Delivery **12 kg/min**

Max outlet pressure **400 bar**



Art. no. **4049**

Delivery **6 kg/min**

Max outlet pressure **720 bar**



Art. no. **4050**

| Art. no. | 4046 | 4047 | 4048 | 4049 | 4050 |
|---|-------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Compressed air supply | Pressure min 2 bar, max 8 bar | | | | |
| Compression ratio | 13 : 1 | 7 : 1 | 30 : 1 | 50 : 1 | 90 : 1 |
| Max outlet pressure | 104 bar | 56 bar | 240 bar | 400 bar | 720 bar |
| Delivery | 19000 g/min | 22000 g/min | 15000 g/min | 12000 g/min | 6000 g/min |
| Max frequency strokes/min | 60 | 120 | 150 | 120 | 60 |
| Connection compressed air | 1/2" BSP (F) | 1/2" BSP (F) | 1/2" BSP (F) | 1/2" BSP (F) | 1/2" BSP (F) |
| Connection lubricant outlet | 1" BSP (M) | 1" BSP (M) | 1" BSP (M) | 1" BSP (M) | 1" BSP (M) |
| Max air consumption with 8 bar pressure | 1,80 m ³ /min | 1,92 m ³ /min | 1,86 m ³ /min | 1,92 m ³ /min | 1,80 m ³ /min |
| Diameter pneumatic piston | 160 mm | 125 mm | 100 mm | 125 mm | 160 mm |
| Diameter suction tube | 70x50 mm | 70x50 mm | 50x22 mm | 50x22 mm | 50x22 mm |
| Suitable for pails / drums of | 180 kg | 180 kg | 180 kg | 180 kg | 180 kg |
| Weight | 26 kg | 22 kg | 18 kg | 22 kg | 24 kg |



Art. no. **7180/12** Art. no. **7150/12**

Maintenance advise

In order to avoid a slowing-down or even a blocking of the pump due to a freezing of generated condensation water closing the air outlet of the motor, we recommend the installation of the above shown air treatment units at the compressed air connection of the pump.

See accessories on pages 30 - 37!

MOTOMATIC® System Patent no. 32188 C/80

In the year 1986 the innovative MOTOMATIC® – system has been developed and patented. Motomatic® is a pneumatic pumping system which is characterized by the use of a single motor which can be applied on various suction tubes. The pumping system is activated by connecting the motor – which is provided with a quick coupling - to the installed suction tubes that differ depending on the lubricant that shall be pumped.

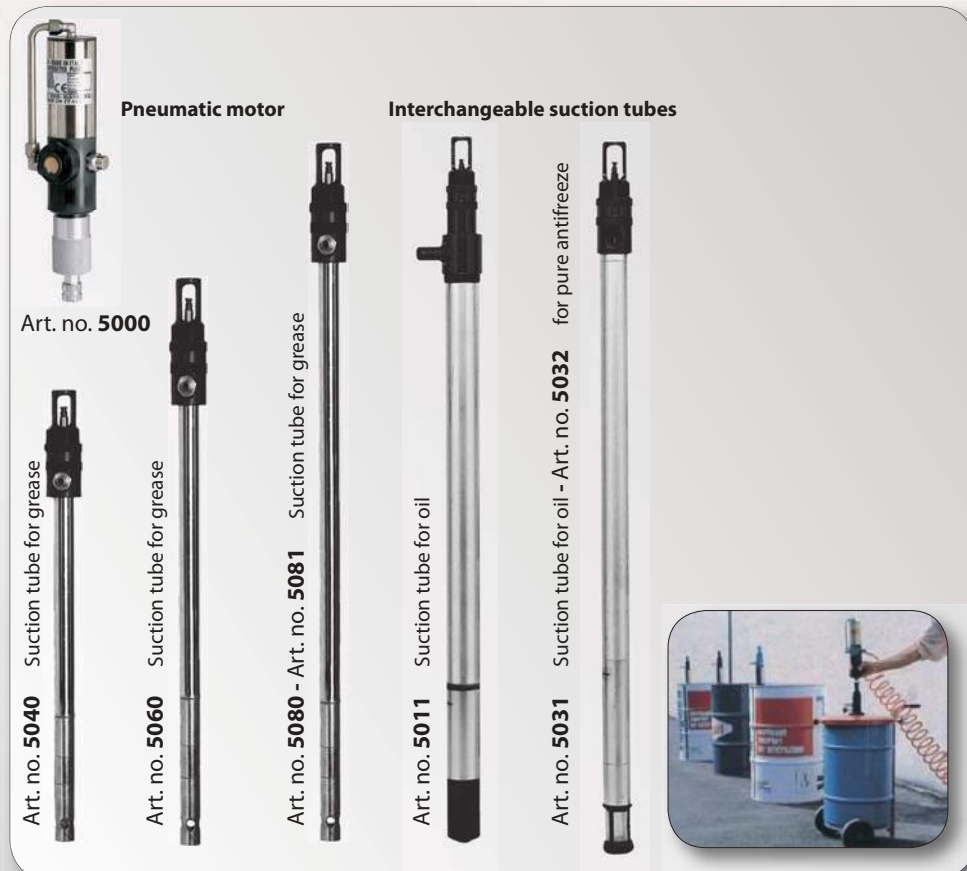
This solution offers a significant practical and economical advantage for whom must pump greases, oils, antifreeze or diesel, since it allows the user to leave the various suction tubes installed in the drums and to use the same pneumatic motor for pumping the required lubricant.

Art. no. **4025**

High pressure pneumatic pump for grease and oil. The pump has been particularly developed for checking eventually existing leakages in hydraulic circuits or in test benches.

Technical data:

- Compressed air supply: min 2 bar - max 5 bar
- Air connection: 3/8" BSP (F)
- Pressure max 1100 bar
- Delivery: 800 g/min
- Connection lubricant outlet: 1/4" BSP (M)
- Length suction tube: 450 mm



250:1 Compression ratio



| Art. no. | 5000 | 5040 | 5060 | 5081 | 5080 | 5011 | 5031 | 5032 |
|---|-------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Compressed air supply | Pressure min 2 bar, max 8 bar | | | | | | | |
| Compression ratio | - | 50 : 1 | 50 : 1 | 15 : 1 | 50 : 1 | 1 : 1 | 3 : 1 | 3 : 1 |
| Outlet pressure | - | 400 bar | 400 bar | 120 bar | 400 bar | 8 bar | 24 bar | 24 bar |
| Delivery | - | 2900 g/min | 2900 g/min | 7000 g/min | 2900 g/min | 48 l/min | 23 l/min | 23 l/min |
| Connection compressed air | 1/4" BSP (F) | - | - | - | - | - | - | - |
| Connection lubricant outlet | - | 1/4" BSP (M) | 1/4" BSP (M) | 1/2" BSP (M) | 1/4" BSP (M) | 3/4" BSP (M) | 1/2" BSP (M) | 1/2" BSP (M) |
| Max air consumption with 8 bar pressure | 115 l/min | - | - | - | - | - | - | - |
| Length suction tube | - | 450 mm | 750 mm | 950 mm | 950 mm | 950 mm | 950 mm | 950 mm |
| Diameter suction tube | - | 28 mm | 28 mm | 28 mm | 28 mm | 55 mm | 40 mm | 40 mm |
| Dimensions LxWxH (mm) | 95x95x420 | 30x31x550 | 30x31x850 | 30x31x1050 | 30x31x1050 | 30x31x1050 | 30x31x1050 | 30x31x1050 |
| Suitable for pails / drums of | - | 20 kg | 50 kg | 180 kg | 180 kg | 208 l | 208 l | 208 l |
| Weight | 3,5 kg | 1 kg | 1,3 kg | 1,5 kg | 1,5 kg | 2,1 kg | 1,9 kg | 1,9 kg |

See accessories on pages 30 – 37!

The a. m. performance values are based upon the following test conditions:

lithium grease NLGI 0 and hydraulic oil ISO 32 at 22°C -- Compressed air pressure 8 bar -- free flow outlet.

Complete pneumatic grease supply kit, suitable for any kind of inside or outside use. Max pressure achievable: 400 bar.



Art. no. 4922

Art. no. 4922

Portable and mobile pneumatic grease supply kit with 16 kg – steel pail, consisting of:

- Pneumatic grease pump, art. no. 4018;
- Pressure regulator, art. no. 7200;
- 3 m – high pressure hose SAE 100 R2 AT, 1/4", art. no. 4503;
- High pressure grease control gun, with 300 mm – steel braid outlet hose
ø ext. 10 mm and 4 - jaws - hydraulic coupler, art. no. 4205;
- High pressure Z – swivel, art. no. 4221;
- Follower plate ø 230 mm;
- Steel pail with 2 wheels and carrying handle.

| Art. no. | Max outlet pressure | Delivery | Connection compressed air | Compressed air supply | Weight | Dimensions (LxWxH) (mm) |
|----------|---------------------|------------|---------------------------|-----------------------|--------|-------------------------|
| 4922 | 400 bar | 2400 g/min | 1/4" BSP (F) | 2-8 bar | 11 kg | 240x390x930 |



Art. no. 4921

Art. no. 4921

Portable pneumatic grease supply kit for 18/25 kg - pails, consisting of:

- Pneumatic grease pump, art. no. 4020
- Pressure regulator, art. no. 7200
- 3 m – high pressure hose SAE 100 R2 AT, 1/4", art. no. 4503
- High pressure grease control gun, 300 mm – steel braid outlet hose ø ext. 10 mm and 4 - jaws - hydraulic coupler, art. no. 4205
- High pressure Z – swivel, art.no. 4221
- Follower plate, ø 310 - 260 mm, art. no. 4314*
- Metal drum cover, ø 330 – 290 mm, art. no. 4302*

*See accessories on page 34 for pails/drums in different dimensions!

| Art. no. | Max outlet pressure | Delivery | Connection compressed air | Compressed air supply | Weight | Dimensions (LxWxH) (mm) |
|----------|---------------------|------------|---------------------------|-----------------------|--------|-------------------------|
| 4921 | 400 bar | 2400 g/min | 1/4" BSP (F) | 2-8 bar | 11 kg | 240x240x890 |



Complete mobile pneumatic grease supply kit, suitable for 18/25 kg – pails in any kind of inside or outside use. Max pressure achievable: 400 bar.



Art. no. **4920C**

Art. no. **4920C**

Mobile pneumatic grease supply kit for 18/25 kg - pails, consisting of:

- Pneumatic grease pump, art. no. 4020;
- Pressure regulator, art. no. 7200;
- 3 m – high pressure hose SAE 100 R2 AT, 1/4", art. no. 4503;
- High pressure grease control gun, 300 mm – steel braid; outlet hose ø ext. 10 mm and 4 - jaws - hydraulic coupler, art. no. 4205;
- High pressure Z – swivel, art. no. 4221;
- Follower plate, ø 310 - 260 mm, art. no. 4314*;
- Metal drum cover, ø 330 – 290 mm, art. no. 4302*;
- Trolley with 2 wheels, art. no. 4350.

Art. no. **4920**

Mobile pneumatic grease supply kit such as art. no. 4920C, but without art. nos. 7200 and 4221.

*See accessories on page 34 for pails/ drums in different dimensions!



OPTIONAL
Art. no. 4701

| Art. no. | Max outlet pressure | Delivery | Connection compressed air | Compressed air supply | Weight | Dimensions (LxWxH) (mm) |
|--------------|---------------------|------------|---------------------------|-----------------------|--------|-------------------------|
| 4920C | 400 bar | 2400 g/min | 1/4" BSP (F) | 2 - 8 bar | 13 kg | 510x690x690 |



Art. no. **4920CE**

Art. no. **4920CE**

Mobile pneumatic grease supply kit such as art. no. 4920C, but with trolley art. no. 4351.

OPTIONAL

Art. no. **4701**

Metal 20 kg – pail (empty)



OPTIONAL
Art. no. 4701

| Art. no. | Max outlet pressure | Delivery | Connection compressed air | Compressed air supply | Weight | Dimensions (LxWxH) (mm) |
|---------------|---------------------|------------|---------------------------|-----------------------|--------|-------------------------|
| 4920CE | 400 bar | 2400 g/min | 1/4" BSP (F) | 2 - 8 bar | 13 kg | 510x690x690 |



Complete mobile pneumatic grease supply kits, suitable for 50 kg – drums in any kind of inside or outside use. Max pressure achievable: 400 bar.



Art. no. 4960C

Art. no. 4960C

Mobile pneumatic grease supply kit for 50 kg - drums, consisting of:

- Pneumatic grease pump, art. no. 4060;
- Pressure regulator, art. no. 7200;
- 3 m – high pressure hose SAE 100 R2 AT, 1/4", art. no. 4503;
- High pressure grease control gun, 300 mm – steel braid outlet hose ø ext. 10 mm and 4 - jaws - hydraulic coupler, art. no. 4205;
- High pressure Z – swivel, art. no. 4221;
- Follower plate, ø 390 - 325 mm, art. no. 4317*;
- Metal drum cover, ø 400 – 360 mm, art. no. 4305*;
- Trolley with 2 wheels, art. no. 4350

Art. no. 4960

Mobile pneumatic grease supply kit such as art. no. 4960C, but without art. nos. 7200 and 4221.



Art. no. 4950

*See accessories on page 34 for pails/ drums in different dimensions!

| Art. no. | Max outlet pressure | Delivery | Connection compressed air | Compressed air supply | Weight | Dimensions (LxWxH) (mm) |
|----------|---------------------|------------|---------------------------|-----------------------|--------|-------------------------|
| 4960C | 400 bar | 2400 g/min | 1/4" BSP (F) | 2 - 8 bar | 15 kg | 510x690x690 |



Art. no. 4980C

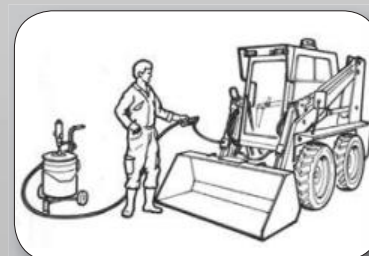
Art. no. 4980C

Mobile pneumatic grease supply kit for 50 kg - drums, consisting of:

- Pneumatic grease pump, art. no. 4060;
- Pressure regulator, art. no. 7200;
- 3 m – high pressure hose SAE 100 R2 AT, 1/4", art. no. 4503;
- High pressure grease control gun, 300 mm – steel braid outlet hose ø ext. 10 mm and 4 jaws - hydraulic coupler, art. no. 4205 ;
- High pressure Z – swivel, art. no. 4221;
- Follower plate, ø 390 - 325 mm, art. no. 4317*;
- Metal drum cover, ø 400 – 360 mm, art. no. 4305*;
- Trolley with 4 wheels, art. no. 4360.

Art. no. 4980

Mobile pneumatic grease supply kit such as art. no. 4980C, but without art. nos. 7200 and 4221.



*See accessories on page 34 for pails/ drums in different dimensions!

| Art. no. | Max outlet pressure | Delivery | Connection compressed air | Compressed air supply | Weight | Dimensions (LxWxH) (mm) |
|----------|---------------------|------------|---------------------------|-----------------------|--------|-------------------------|
| 4980C | 400 bar | 2400 g/min | 1/4" BSP (F) | 2 - 8 bar | 18 kg | 600x600x1050 |



Complete mobile pneumatic grease supply kits, suitable for 180 kg – drums in any kind of inside or outside use. Max pressure achievable: 400 bar.

Art. no. 4990C

180 kg

- Mobile pneumatic grease supply kit for 180 kg - drums, consisting of:
- Pneumatic grease pump, art. no. 4080;
 - Pressure regulator and air filter with moisture separator, art. no. 7180;
 - 3 m – high pressure hose SAE 100 R2 AT, 1/4", art. no. 4503;
 - High pressure grease control gun, 300 mm – steel braid outlet hose ø ext. 10 mm and 4 - jaws - hydraulic coupler, art. no. 4205;
 - High pressure Z – swivel, art. no. 4221;
 - Follower plate, ø 590 - 540 mm, art. no. 4319*;
 - Metal drum cover, ø 600 – 560 mm, art. no. 4308*;
 - Trolley with 4 wheels, art. no. 4380.

Art. no. 4990

Mobile pneumatic grease supply kit such as art. no. 4990C, but without art. nos. 7180 and 4221.

| Art. no. | Max outlet pressure | Delivery | Connection compressed air | Compressed air supply | Weight | Dimensions (LxWxH) (mm) |
|--------------|---------------------|------------|---------------------------|-----------------------|--------|-------------------------|
| 4990C | 400 bar | 2400 g/min | 1/4" BSP (F) | 2 - 8 bar | 22 kg | 900x830x1400 |



Art. no. 4910

- Mobile pneumatic grease supply kit for 180 kg - drums, consisting of:
- Pneumatic grease pump, art. no. 4080;
 - Pressure regulator and air filter with moisture separator, art. no. 7180;
 - Open hose reel, art. no. 9016;
 - 15 m – high pressure hose SAE 100 R2 AT, 1/4", art. no. 4515;
 - 2 m – connection hose SAE 100 R2 AT, 1/4", art. no. 4502;
 - High pressure grease control gun, 300 mm – steel braid outlet hose Ø ext. 10 mm and 4 - jaws - hydraulic coupler, art. no. 4205;
 - Follower plate, ø 590 - 540 mm, art. no. 4319*;
 - Metal drum cover, ø 600 – 560 mm, art. no. 4308*;
 - Trolley with 4 wheels and mounting bracket for hose reel, art. no. 4380/P.



Art. no. 4338
4 wheels kit suitable also for the use on rough surfaces.

| Art. no. | Max outlet pressure | Delivery | Connection compressed air | Compressed air supply | Weight | Dimensions (LxWxH) (mm) |
|-------------|---------------------|------------|---------------------------|-----------------------|--------|-------------------------|
| 4910 | 400 bar | 2400 g/min | 1/4" BSP (F) | 2 - 8 bar | 42 kg | 900x870x1400 |



Art. no. 4911

- Mobile pneumatic grease supply kit for 180 kg - drums, consisting of:
- Pneumatic grease pump, art. no. 4080;
 - Pressure regulator and air filter with moisture separator, art. no. 7180;
 - Open hose reel, art. no. 9016;
 - 15 m – high pressure hose SAE 100 R2 AT, 1/4", art. no. 4515;
 - 2 m – connection hose SAE 100 R2 AT, 1/4", art. no. 4502;
 - High pressure grease control gun, 300 mm – steel braid outlet hose ø ext. 10 mm and 4 - jaws - hydraulic coupler, art. no. 4205;
 - High pressure Z – swivel, art. no. 4221;
 - Follower plate, ø 590 - 540 mm, art. no. 4319*;
 - Metal drum cover, ø 600 – 560 mm, art. no. 4308*;
 - Heavy duty trolley with 4 wheels and grate, art. no. 4389.

| Art. no. | Max outlet pressure | Delivery | Connection compressed air | Compressed air supply | Weight | Dimensions (LxWxH) (mm) |
|-------------|---------------------|------------|---------------------------|-----------------------|--------|-------------------------|
| 4911 | 400 bar | 2400 g/min | 1/4" BSP (F) | 2 - 8 bar | 49 kg | 900x1030x1400 |



Art. no. 4990C



Art. no. 4910



Art. no. 4911

Complete stationary pneumatic grease supply kit, suitable for 50 kg – and 180 kg – drums in any kind of inside or outside use.
Max pressure achievable: 400 bar.

50/180 kg

Art. no. **4961 - 4981**

Stationary pneumatic grease supply kits, consisting of:

| | Art. no. 4961 | Art. no. 4981 |
|--|-------------------------------|-------------------------------|
| Pneumatic grease pump | Art. no. 4060 | Art. no. 4080 |
| Metal drum cover | Art. no. 4305 Ø 400-360 mm | Art. no. 4308 Ø 600-560 mm |
| High pressure hose SAE 100 R2 AT, 1/4", length 4 m | Art. no. 4504 | Art. no. 4504 |
| Follower plate | Art. no. 4317 Ø 390x325 mm | Art. no. 4319 Ø 590x540 mm |
| High pressure grease control gun with steel braid outlet hose Ø ext. 10 mm and 4 - jaws - hydraulic coupler | Art. no. 4205 | Art. no. 4205 |
| Pressure regulator and air filter with moisture separator | Art. no. 7180 | Art. no. 7180 |
| High pressure Z – swivel | Art. no. 4221 | Art. no. 4221 |

| Art. no. | For drums of | Max outlet pressure | Delivery | Connection compressed air | Compressed air supply | Weight |
|-------------|--------------|---------------------|------------|---------------------------|-----------------------|--------|
| 4961 | 50 kg | 400 bar | 2400 g/min | 1/4" BSP (F) | 2 - 8 bar | 14 kg |
| 4981 | 180 kg | 400 bar | 2400 g/min | 1/4" BSP (F) | 2 - 8 bar | 16 kg |

Art. no. **4995**

Stationary pneumatic grease supply kit for 180 kg – drums with hose reel for wall or pillar installation, consisting of:

- Pneumatic grease pump, art. no. 4080;
- Pressure regulator and air filter with moisture separator, art. no. 7180;
- Open hose reel, art. no. 9016;
- 15 m – high pressure hose SAE 100 R2 AT, 1/4", art. no. 4515;
- 2 m – connection hose SAE 100 R2 AT, 1/4", art. no. 4502;
- High pressure grease control gun, 300 mm – steel braid outlet hose Ø ext. 10 mm and 4; jaws - hydraulic coupler, art. no. 4205;
- High pressure Z – swivel, art. no. 4221;
- Follower plate, Ø 590 - 540 mm, art. no. 4319*;
- Metal drum cover, Ø 600 – 560 mm, art. no. 4308*.

| Art. no. | Max outlet pressure | Delivery | Connection compressed air | Compressed air supply | Weight |
|-------------|---------------------|------------|---------------------------|-----------------------|--------|
| 4995 | 400 bar | 2400 g/min | 1/4" BSP (F) | 2 - 8 bar | 36 kg |

Art. no. **8558**

Stationary pneumatic grease supply kit for 180 kg – drums with hose reel, installed on a "Tank Service Base" unit. Compared to a system installed on the wall, the system which is mounted on the "Tank Service Base" unit also includes a safety pallet for the drum storage with a self-supporting structure forming a "lubrication island" that can be placed in any location of a workshop.

The composition is the same as the one of art. no. 4995, but completed by a "Tank Service Base" unit for 1 drum with the self-supporting structure consisting of 2 steel rails and 2 steel panels for the installation of the components (art. no. 8525).

Optional: Art. no. 4699 Metal 180 kg – drum (empty)

| Art. no. | Max outlet pressure | Delivery | Connection compressed air | Compressed air supply | Weight | Dimensions (LxWxH) (mm) |
|-------------|---------------------|------------|---------------------------|-----------------------|--------|-------------------------|
| 8558 | 400 bar | 2400 g/min | 1/4" BSP (F) | 2 - 8 bar | 78 kg | 830x880x2360 |



Art. no. **4961**
Art. no. **4981**



Art. no. **4995**



OPTIONAL
Art. no. 4699

Art. no. **8558**



Art. no. **4999**

Mobile extrusion unit for grease with a 4 - wheels base, a pump lifting device and a grease compacting system that works based on a pneumatic circuit which is activated by a control valve.

This unit is used when the grease has a high degree of viscosity or is very dense due to low temperature and therefore is difficult to pump. The kit includes also a pneumatic 50:1 – grease pump of the standard series. Versions for pails and drums available.



Art. no. **4999**



| Art. no. | 4999/30 | 4999/60 | 4999/200 |
|--|------------------------|---------------|---------------|
| Pump models | 4020 | 4060 | 4080 |
| Compression ratio | 50:1 | | |
| Max outlet pressure | 400 bar | | |
| Pressure pneumatic circuit | 1 – 3 bar | | |
| Pressure performance compacting system | 1 bar = 50 kg pressure | | |
| Suitable for drums of | 18 kg | 50 kg | 180 kg |
| Dimensions (LxWxH) (mm) | 1090x630x1750 | 1090x630x1750 | 1090x630x1750 |
| Weight | 85 kg | 110 kg | 170 kg |



Art. no.
4999/200INP



Art. no. **4999/200INP**

Stationary extrusion unit for grease with bedplate, consisting of a special pump lifting device suitable for pneumatic grease pumps, series **"Power Bull"**, and a grease compacting system that works based on a pneumatic circuit which is activated by a control valve. This unit is used when the grease has a high degree of viscosity or is very dense due to low temperature and therefore is difficult to pump. For the use with grease pump Art. no.s art. nos. 4046 – 4047 – 4048 – 4049 – 4050. The kit does not include the pneumatic grease pump. Suitable for the use with 180 kg – drums.

| Art. no. | 4999/200INP |
|--|------------------------|
| Pressure pneumatic circuit | 1 – 3 bar |
| Pressure performance compacting system | 1 bar = 50 kg pressure |
| Suitable for drums of | 180 kg |
| Dimensions (LxWxH) (mm) | 1090 x 630 x 1900 |
| Weight | 220 kg |



Art. no. **4997/20**

Art. no. **4997/60**

Mobile pneumatic grease sprayer kits, suitable for the application of grease or similar lubricants on mechanical parts or surfaces for protective purposes. For example these kits are suitable also for applying underseal agents for protective undercoating.

The kits consist of a 25:1 – pneumatic grease pump, metal drum cover, follower plate, 3 m - high pressure hose SAE 100 R2 AT, 1/4", for grease and 3 m – hose for air, with thermo - retractable cover, control gun including lance with twin outlet for the injection of air and spraying nozzles.

| Art. no. | 4997/20 | 4997/60 |
|-----------------------|-----------|---------|
| Compression ratio | 25:1 | |
| Max outlet pressure | 150 bar | |
| Compressed air supply | 3 – 6 bar | |
| For pails / drum of | 18-25 kg | 50 kg |
| Weight | 85 kg | 110 kg |



Art. no. **4322**

Low level pump stop kit for grease, suitable for 180 kg – drums, consisting of:

- Metal drum cover, ø 600 mm, with connection cables junction box;
- Follower plate, ø 590 mm, with rubber edge;
- Probe with contactless sensor;
- Solenoid valve for compressed air;
- Acoustic alarm device;
- Electronic control switch with transformer 230 VAC – 24 VDC, switch ON/OFF - START, indicator lamp in case of empty drum and bypass push button which allows to continue the grease flow again after the pump has been stopped.



Art. no. 4425

Manual lever action grease pump, suitable for 18/25 kg - pails. Standard suction tube length 360 mm; can be supplied also in different lengths on demand.

Art. no. 4426

Similar to art. no. 4425, but with suction tube length 335 mm for 16 kg – pails.

| Art. no. | Max outlet pressure | Delivery per stroke | Connections | Weight |
|-------------|---------------------|---------------------|--------------|--------|
| 4425 | 250 bar | 8 g | 1/4" BSP (M) | 2 kg |
| 4426 | 250 bar | 8 g | 1/4" BSP (M) | 2 kg |

Art. no. 4425
Art. no. 4426

Art. no. 5125

Portable, manual grease supply kit for 18/25 kg – pails, consisting of:

- Manual lever action grease pump, art. no. 4425;
- Metal drum cover, ø 290 – 330 mm, art. no. 074302*;
- Follower plate, ø 310 - 260 mm, art. no. 4314*;
- 1,5 m – rubber hose R1T, ø 1/4";
- Ball valve and rigid outlet pipe with 4 – jaws – hydraulic coupler, art.no. 4218.

| Art. no. | Max outlet pressure | Delivery per stroke | Connections | Weight | Dimensions (LxWxH) (mm) |
|-------------|---------------------|---------------------|--------------|--------|-------------------------|
| 5125 | 250 bar | 8 g | 1/4" BSP (M) | 5 kg | 340x340x630 |

Art. no. 5125

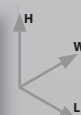


Art. no. 5190

Manual grease supply kit, consisting of metal 16 kg – pail with 2 wheels, pedal action pump, follower plate, ø 230 mm, art. no. 07 5131, 1,5 m – rubber hose R1T, ø 1/4", ball valve and rigid outlet pipe with 4 – jaws – hydraulic coupler.

| Art. no. | Max outlet pressure | Delivery per stroke | Connections | Weight | Dimensions (LxWxH) (mm) |
|-------------|---------------------|---------------------|--------------|--------|-------------------------|
| 5190 | 150 bar | 7 g | 1/4" BSP (M) | 8 kg | 510x580x880 |

Art. no. 5190



250 bar



Art. no. **5100**

Art. no. **5100**

Portable, manual grease supply kit, consisting of metal 16 kg – pail, lever action grease pump, follower plate, ø 230 mm, art. no. 07 5131, 1,5 m - rubber hose R1T, ø 1/4", ball valve and rigid outlet pipe with 4 – jaws – hydraulic coupler.



MADE IN ITALY!

| Art. no. | Max outlet pressure | Delivery per stroke | Connections | Weight | Dimensions (LxWxH) (mm) |
|-------------|---------------------|---------------------|--------------|--------|-------------------------|
| 5100 | 250 bar | 8 g | 1/4" BSP (M) | 5,5 kg | 240x490x630 |



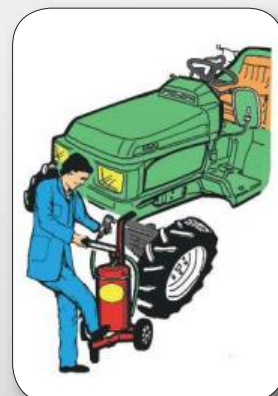
250 bar



Art. no. **5105**

Art. no. **5105**

Portable, manual grease supply kit, consisting of metal 16 kg – pail with 2 wheels, lever action grease pump, follower plate, ø 230 mm, art. no. 07 5131, 1,5 m - rubber hose, ø 1/4", ball valve and rigid outlet pipe with 4 – jaws – hydraulic coupler.



| Art. no. | Max outlet pressure | Delivery per stroke | Connections | Weight | Dimensions (LxWxH) (mm) |
|-------------|---------------------|---------------------|--------------|--------|-------------------------|
| 5105 | 250 bar | 8 g | 1/4" BSP (M) | 7,5 kg | 250x540x630 |



250 bar



Art. no. **5115**

Art. no. **5115**

Manual grease supply kit, consisting of metal 16 kg – pail with 2 wheels, lever action grease pump, follower plate, ø 230 mm, art. no. 07 5131, 1,5 m - rubber hose, ø 1/4", ball valve and rigid outlet pipe with 4 – jaws – hydraulic coupler.

Mounted on a trolley, art. no. 4350, with fixation bracket.

| Art. no. | Max outlet pressure | Delivery per stroke | Connections | Weight | Dimensions (LxWxH) (mm) |
|-------------|---------------------|---------------------|--------------|--------|-------------------------|
| 5115 | 250 bar | 8 g | 1/4" BSP (M) | 8 kg | 510x580x880 |



Grease Power 750 is a manual grease supply kit, composed by a spring - loaded pump combined with a special control gun, dispensing the grease in pressure degrees up to 750 bar.

This system can be used in 3 different ways, offering the following results:

1. Delivery of 0,3 g of grease per squeeze with up to 750 bar pressure when the switch of the control gun is on "high pressure" - position. Ideal for unblocking dirty or resinified grease nipple valves.
2. Delivery of 1,1 g of grease per squeeze when switch of the control gun is on "high volume" - position. For normal grease supply operations.
3. Keeping the lever of the control gun pushed and pressing simultaneously the pump rod down by foot, a continuous grease flow at low pressure can be created.

This grease supply kit - thanks to its compactness and its independence from any pneumatic or electric supply - is the ideal, mobile equipment for any application in the field of lubrication.



Art. no. **5110**

Portable, manual grease supply kit, consisting of:

- Metal 5 kg – pail with cover;
- Manual, spring - loaded piston grease pump;
- Follower plate;
- 1,5 m - rubber hose, \varnothing 1/2" mm;
- Control gun with selection switch and rigid outlet pipe with 4 – jaws – hydraulic coupler.



| Art. no. | Max outlet pressure | Max delivery per stroke | \varnothing suction tube | Length suction tube | Weight | Dimensions (LxWxH) (mm) |
|-------------|---------------------|-------------------------|----------------------------|---------------------|--------|-------------------------|
| 5110 | 750 bar | 8 g | 28 mm | 310 mm | 6,5 kg | 350x240x550 |



Art. no. **5111**

Portable, manual grease supply kit, suitable for 18/25 kg - pails, consisting of:

- Manual, spring - driven piston grease pump;
- Follower plate, 310 – 260 mm, art. no. 4314;
- 1,5 m - rubber hose, \varnothing 1/2" mm;
- Metal drum cover, \varnothing 290 – 330 mm, art. no. 4302;
- Control gun with selector lever and rigid outlet pipe with 4 – jaws – hydraulic coupler.



OPTIONAL
Art. no. **4215**
Extension with quick change coupling, length 130 mm, to be connected with hydraulic coupler.

| Art. no. | Max outlet pressure | Max delivery per stroke | \varnothing suction tube | Length suction tube | Weight | Dimensions (LxWxH) (mm) |
|-------------|---------------------|-------------------------|----------------------------|---------------------|--------|-------------------------|
| 5111 | 750 bar | 8 g | 28 mm | 370 mm | 5,8 kg | 350x480x630 |



Art. no. **5126**

Art. no. **5127**

Art. no. **5128**

Manual grease gun filler pump kit, consisting of manual lever action grease pump, metal drum cover, follower plate and rigid pipe with adapter for the connection of grease guns. Suitable for grease up to a viscosity of NLGI 2.



| Art. no. | Delivery | Ø suction tube | Length suction tube | Ø drum cover | Ø follower plate | Ø pails/drums | Suitable for pails/drums of | Weight |
|-------------|-------------|----------------|---------------------|--------------|------------------|---------------|-----------------------------|--------|
| 5126 | 30 g/stroke | 40 mm | 335 mm | 283 mm | 275 mm | 240-283 mm | 18 kg | 5 kg |
| 5127 | 30 g/stroke | 40 mm | 450 mm | 330 mm | 310 mm | 290-330 mm | 20 kg | 6 kg |
| 5128 | 30 g/stroke | 40 mm | 750 mm | 400 mm | 390 mm | 360-400 mm | 50 kg | 8 kg |

Art. no. **5126**

Art. no. **5127**

Art. no. **5128**

Art. no. **5129**

Art. no. **5130**

Art. no. **5131**

Manual grease transfer kit for the refilling in centralized lubrication systems, consisting of manual lever action grease pump, metal drum cover, follower plate, 2 m – rubber hose Ø 1/2", with quick coupling and curved filling spout with connector to quick coupling. Suitable for grease up to a viscosity of NLGI 2.

| Art. no. | Delivery | Ø suction tube | Length suction tube | Ø drum cover | Ø follower plate | Ø pails/drums | Suitable for pails/drums of | Weight |
|-------------|-------------|----------------|---------------------|--------------|------------------|---------------|-----------------------------|--------|
| 5129 | 30 g/stroke | 40 mm | 335 mm | 283 mm | 275 mm | 240-283 mm | 18 kg | 6 kg |
| 5130 | 30 g/stroke | 40 mm | 450 mm | 330 mm | 310 mm | 290-330 mm | 20 kg | 7 kg |
| 5131 | 30 g/stroke | 40 mm | 750 mm | 400 mm | 390 mm | 360-400 mm | 50 kg | 9 kg |

Art. no. **5129**

Art. no. **5130**

Art. no. **5131**

Art. no. **4923**

Art. no. **4963**

Art. no. **4983**

Pneumatic grease transfer kit for the refilling in centralized lubrication systems, consisting of pneumatic 25:1 - grease pump, metal drum cover, follower plate, 2 m – rubber hose Ø 1/2" and quick coupling. Suitable for grease up to a viscosity of NLGI 3.

| Art. no. | Delivery | Ø suction tube | Length suction tube | Ø drum cover | Ø follower plate | Ø pails/drums | Suitable for pails/drums of | Weight |
|-------------|------------|----------------|---------------------|--------------|------------------|---------------|-----------------------------|--------|
| 4923 | 7000 g/min | 28 mm | 450 mm | 330 mm | 350 mm | 290-330 mm | 20 kg | 10 kg |
| 4963 | 7000 g/min | 28 mm | 750 mm | 400 mm | 390 mm | 360-400 mm | 50 kg | 14 kg |
| 4983 | 7000 g/min | 28 mm | 950 mm | 600 mm | 590 mm | 560-600 mm | 180 kg | 16 kg |

Art. no. **4923**

Art. no. **4963**

Art. no. **4983**

LubTools is the Flexbimec brand specialized in the supply of manual lubrication equipment.

LubTools is offering a wide range of articles including grease nipples in galvanized and stainless steel, automatic lubricators, suction guns, lever and push type grease guns, funnels, measures and jerrycans.

In order to see the complete range and to choose the required items, please see our separate LubTools catalogue.



H1 - Art. no. **4241**



H2 - Art. no. **4242**



H3 - Art. no. **4343**



H1a - Art. no. **4241A**



M22 - Art. no. **4245**



M1 - Art. no. **4246**



D1 - Art. no. **4247**



D1a - Art. no. **4247A**



T1B - Art. no. **4244**



K1 - Art. no. **4256**
K2 - Art. no. **4257**
K3 - Art. no. **4258**



H1/S - Art. no. **4241S**
H2/S - Art. no. **4242S**
H3/S - Art. no. **4243S**



D2 - Art. no. **4248**
D3 - Art. no. **4249**



H2a - Art. no. **4242A**
H3a - Art. no. **4343A**



Art. no. **4240X**



Art. no. **4240**



Art. no. **4241/TL**
Art. no. **4241/TC**



Art. no. **4241/P**



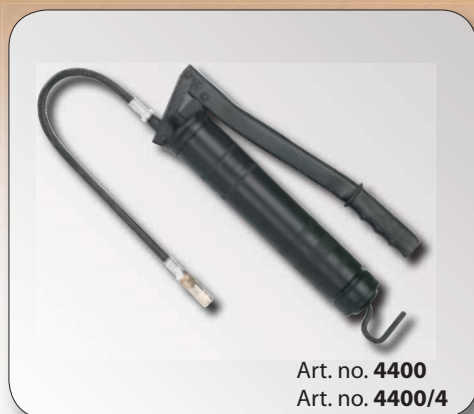
Art. no. **4250/60**



Art. no. **4250/120**



Art. no. **4250/240**



Art. no. **4400**
Art. no. **4400/4**

Lever action grease gun, suitable for the use with bulk grease or with grease cartridges. With steel braid outlet hose \varnothing ext. 10 mm x 300 mm length, M 10x1, and 4 – jaws – hydraulic coupler. Suitable for grease up to a viscosity of NLGI 2.

| Art. no. | Max delivery | Max outlet pressure | Capacity grease cartridge | \varnothing suitable grease cartridge | L. suitable grease cartridge | Weight | Dimensions (LxWxH) (mm) |
|---------------|--------------|---------------------|---------------------------|---|------------------------------|---------|-------------------------|
| 4400 | 1,2 g/stroke | 400 bar | 600 g | 56 mm | 500 mm | 1,70 kg | 150x480x60 |
| 4400/4 | 1,2 g/stroke | 400 bar | 400 g | 54 mm | 500 mm | 1,70 kg | 150x480x60 |



Art. no. **4450**
Art. no. **4450/4**

Pneumatic grease gun, suitable for the use with bulk grease or with grease cartridges. With steel braid outlet hose \varnothing ext. 10 mm x 300 mm length, M 10x1, and 4 – jaws – hydraulic coupler. It is a single action mechanism (non-continuous grease supply): when activating the trigger, the internal piston moves and supplies grease; when the trigger is released, the piston returns in its initial position. By repeating this procedure the grease can be dispensed. Compressed air pressure: 4 – 8 bar. Suitable for grease up to a viscosity of NLGI 2.

| Art. no. | Max delivery | Max outlet pressure | Capacity grease cartridge | \varnothing suitable grease cartridge | L. suitable grease cartridge | Weight | Dimensions (LxWxH) (mm) |
|---------------|--------------|---------------------|---------------------------|---|------------------------------|--------|-------------------------|
| 4450 | 1,2 g/stroke | 300 bar | 600 g | 56 mm | 500 mm | 2 kg | 240x440x70 |
| 4450/4 | 1,2 g/stroke | 300 bar | 400 g | 54 mm | 500 mm | 2 kg | 240x440x70 |



Art. no. **4452**
Art. no. **4452/4**

Electric grease gun with 12 V - battery, suitable for the use with bulk grease or with grease cartridges. With steel braid outlet hose \varnothing ext. 10 mm x 300 mm length, M 10x1, and 4 – jaws – hydraulic coupler. The grease is dispensed continuously; by pushing the trigger of the grease gun, the internal gears start moving and the grease is supplied. When the trigger is released again, the grease flow stops. Battery charger: 12 VDC (1300 mAh), time for recharging: 1 hour (according to the ROHS – directive). Battery recharger: 230 Vac (12 V DC, 50 Hz). Supplied in a plastic case with a lever grease gun head for the use as lever grease gun. Suitable for grease up to a viscosity of NLGI 2.

| Art. no. | Max delivery | Max outlet pressure | Capacity grease cartridge | \varnothing suitable grease cartridge | L. suitable grease cartridge | Weight | Dimensions (LxWxH) (mm) |
|---------------|--------------|---------------------|---------------------------|---|------------------------------|--------|-------------------------|
| 4452 | 8 g/stroke | 300 bar | 600 g | 56 mm | 500 mm | 7,5 kg | 540x430x110 |
| 4452/4 | 8 g/stroke | 300 bar | 400 g | 54 mm | 500 mm | 7,5 kg | 540x430x110 |



Art. no. **4405**

Cartridge with lithium grease, NLGI 2, with 600 g capacity. Diameter 56 mm, length 300 mm. Kinematic viscosity of the basing oil: 150 cSt, 40°C. Temperature range of use: -20°C - +120°C. According DIN 51502 K 2 K-20. Packaging unit: 15 pcs.

Art. no. **4406**

Cartridge with lithium grease, NLGI 2, with 400 g capacity. Diameter 52 mm, length 235 mm. Kinematic viscosity of the basing oil: 150 cSt, 40°C. Temperature range of use: -20°C - +120°C. According DIN 1284. Packaging unit: 15 pcs.



Art. no. **4200**

High pressure grease control gun, steel body, inlet connection 1/4" BSP (M), outlet connection M 10x1.

Art. no. **4201**

High pressure grease control gun art.no. 4200, but additionally equipped with a trigger guard.



Art. no. **4205**

High pressure grease control gun with 300 mm – steel braid rubber outlet hose ø ext. 10 mm and 4 - jaws - hydraulic coupler.

Art. no. **4206**

High pressure grease control gun art.no. 4205, but additionally equipped with a trigger guard.



Art. no. **4208**

High pressure grease control gun with rigid outlet pipe and 4 - jaws – hydraulic coupler.

Art. no. **4207**

High pressure grease control gun art.no. 4208, but additionally equipped with a trigger guard.



Art. no. **4209**

High delivery grease control gun for the transfer of grease, with rigid outlet, ø 20 mm. Working pressure up to 200 bar, burst pressure 350 bar.

Art. no. **4204**

Grease control gun for the transfer of grease, with rigid outlet, ø 16 mm. Working pressure up to 180 bar, burst pressure 320 bar.



Art. no. **4221**

High pressure rotating "Z" – swivel, connections M – F 1/4" BSP. For the installation between hose and control gun. Allows a complete 360° - rotation on the 3 axes, also under pressure.

Art. no. **4228**

Straight high pressure rotating swivel, connections M – F 1/4" BSP. For the installation between hose and control gun. Allows a complete 360° - rotation on the 1 axe, also under pressure.



Art. no. **4220** - Hydraulic 4 – jaws – coupler, standard version, steel body, height 36 mm, for hydraulic-type grease nipples according to DIN 71412, connection M 10x1.

Art. no. **4224** - Giant button head coupler, steel body, for button head grease nipples with \varnothing 22 mm according to DIN 3404; connection M 10x1.

Art. no. **4225** - Hydraulic 4 – jaws – coupler, steel body, for hydraulic-type grease nipples according to DIN 71412, connection M 10x1, with 90° – curved swivel adapter.

Art. no. **4226** - Button head coupler, steel body, for button head grease nipples with \varnothing 15 mm according to DIN 3404; connection M 10x1.

Art. no. **4227** - Reverse button head coupler, steel body, for button head grease nipples with \varnothing 15 mm according to DIN 3404; connection M 10x1.

Art. no. **4251** - Pointed coupler, steel body, for flush-type grease nipples according to DIN 3405; connection M 10x1.

Art. no. **4252** - Pin pointed coupler, steel body, for flush-type grease nipples according to DIN 3405; connection M 10x1.

Art. no. **4253** - Hollow-type coupler, steel body, for ball-type and hydraulic-type grease nipples according to DIN 71412; connection M 10x1.

Art. no. **4254** - Bayonet coupler, steel body, for bayonet grease nipples; connection M 10x1.

Art. no. **4255** - Hydraulic 4 – jaws – coupler, heavy duty version, steel body, height 48 mm, with ball valve, for hydraulic-type grease nipples according to DIN 71412, connection M 10x1. Suitable also for applications with oil.

All couplers are available also with thread G 1/8" (F) on demand.



Art. no. **4215** - Extension pipe for hydraulic 4 – jaws – couplers, length 130 mm, with quick coupling and connection M 10x1.

Art. no. **4216** - Double steel braid rubber outlet hose 1/4", SAE 100 R2 AT, length 400 mm; connections M 10x1 – 1/4" BSP (M).

Art. no. **4217** - Steel braid rubber outlet hose \varnothing ext. 10 mm, length 400 mm, max. working pressure 400 bar, burst pressure 1000 bar; connections M 10x1.

Art. no. **4217/1000** - Steel braid rubber outlet hose \varnothing ext. 10 mm, length 1000 mm, max. working pressure 400 bar, burst pressure 1000 bar; connections M 10x1.

Art. no. **4217+4220** - Steel braid rubber outlet hose \varnothing ext. 10 mm, length 400 mm, max. working pressure 400 bar, burst pressure 1000 bar with hydraulic 4 – jaws – coupler; connections M 10x1.

Art. no. **4218** - Angled rigid outlet pipe, length 200 mm, with hydraulic 4 – jaws – coupler; connections M 10x1.

Art. no. **4219** - Angled rigid outlet pipe, length 130 mm; connections M 10x1.

All outlet pipes and hoses are available also with thread G 1/8" (F) on demand.



Art. no. **4216 + 4233**

Double steel braid rubber outlet hose 1/4", length 400 mm, connection 1/4" (M), with quick coupling to be connected on grease containers in centralized lubrication systems for refilling.

Art. no. **4234**

Angled rigid outlet pipe, connection 1/2" (M), with quick coupling, for the grease refilling of lever grease guns through grease gun filler pumps.

Art. no. **4235**

Curved rigid outlet pipe, connection \varnothing 1/2" (M), for the refilling of grease containers in centralized lubrication systems.

Art. no. **4233**

Quick coupling, connection 1/4" (F), suitable for the refilling of grease containers in centralized lubrication systems.

Digital flow meters based on the oval gears measuring principle. The flow meters are instruments equipped with an electronic component that permits by the use of a sensor to measure the flow of grease passing through it and transmitting then a signal on a liquid crystal display. The use of this instrument is suitable in all grease supply systems and enables the user to control and to measure the grease flow. Not approved for fiscal transactions.



Art. no. 4286

Digital oval gears grease flow meter, series "Grease Control", with grease control gun, rigid outlet pipe and hydraulic 4 – jaws – coupler. The calibration of the meter can also be made by the user. Equipped with 2 batteries of 1,5 VDC.

Art. no. 4289

Digital oval gears grease flow meter, series "Grease Control", suitable for the use as inline meter. The calibration of the meter can also be made by the user. Equipped with 2 batteries of 1,5 VDC.

TECHNICAL DATA

| Art. no. | 4286 | 4289 |
|----------------------------|----------------------|------------------------|
| Connections | 1/4" BSP (M) | 1/8" BSP (F)- 10x1 (F) |
| Delivery min – max | 0,20 - 2 kg/min | 0,20 - 2 kg/min |
| Temperature | min +2°C – max +50°C | min +2°C – max +50°C |
| Max pressure | 400 bar | 400 bar |
| Precision | +/- 0,3% * | +/- 0,3% * |
| Total max (resettable) | 999,9 kg | 999,9 kg |
| Total max (non resettable) | 9999 kg | 9999 kg |
| Weight | 1,4 kg | 1,2 kg |

*Basic calibration made in factory with grease NLGI 0



Art. no. 4236

Digital oval gears grease flow meter, series "Grease Gate", with preset function of the desired grease quantity to be supplied. With grease control gun, rigid outlet pipe and hydraulic 4 – jaws – coupler.

The preset function introduces a certain degree of automation since it becomes possible to predetermine the dosages and to stop the grease flow automatically once the preselected value has been reached.

The calibration of the meter can also be made by the user.

TECHNICAL DATA

| Art. no. | 4236 |
|----------------------------|-----------------|
| Connections | 1/4" BSP (M) |
| Delivery min – max | 0,10 - 2 kg/min |
| Temperature | + 2°C / + 50°C |
| Max pressure | 300 bar |
| Precision | +/- 0,5%* |
| Lowest preselection value | 0,010 kg |
| Total max (resettable) | 999,9 kg |
| Total max (non resettable) | 9999 kg |
| Weight | 1,7 kg |

*Basic calibration made in factory with grease NLGI 0

Digital flow meters based on the oval gears measuring principle. The flow meters are instruments equipped with an electronic component that permits by the use of a sensor to measure the flow of grease passing through it and transmitting then a signal on a liquid crystal display. The use of this instrument is suitable in all grease supply systems and enables the user to control and to measure the grease flow. Not approved for fiscal transactions.



Art. no. 4285

Art. no. 4285

Digital oval gears grease flow meter, with grease control gun and rigid outlet pipe, for the measurement of regular quantities in grease transfer applications at relatively low pressure.

The calibration of the meter can also be made by the user.

TECHNICAL DATA

| Art. no. | 4285 |
|----------------------------|-----------------|
| Connections | 1/2" BSP (M) |
| Delivery min – max | 0,05 – 5 kg/min |
| Temperature | +2°C / + 50°C |
| Max pressure | 70 bar |
| Precision | +/- 1% * |
| Total max (resettable) | 999,9 kg |
| Total max (non resettable) | 9999 kg |
| Weight | 1,4 kg |

*Basic calibration made in factory with grease NLGI 0



Art. no. 4287

Art. no. 4287

Digital oval gears grease flow meter, with grease control gun and rigid outlet pipe, for the measurement of high quantities in grease transfer applications with pneumatic pumps of the series "Power Bull" at relatively low pressure.

The calibration of the meter can also be made by the user.

TECHNICAL DATA

| Art. no. | 4287 |
|----------------------------|-----------------|
| Connections | 1" BSP (M) |
| Delivery min – max | 0,5 – 20 kg/min |
| Temperature | +2°C / + 50°C |
| Max pressure | 150 bar |
| Precision | +/- 1% * |
| Total max (resettable) | 999,9 kg |
| Total max (non resettable) | 9999 kg |
| Weight | 3 kg |

*Basic calibration made in factory with grease NLGI 0



Art. no. **4301** Art. no. **4305L**
 Art. no. **4302** Art. no. **4305S**
 Art. no. **4302S** Art. no. **4305/TP**
 Art. no. **4305** Art. no. **4308**
 Art. no. **4308/TP**

Metal drum cover, available in different dimensions to suit to the various types of grease drums, including butterfly screws for the fixation of the cover on the drum as well as bung adapter for the fixation of the pump in vertical position.

| Art. no. | Suitable for external drum diameters of | Bore suitable for suction tube diameter of | Suitable for drums of | Weight |
|----------------|---|--|-----------------------|--------|
| 4301 | 240 - 283 mm | 28 mm | 18 kg | 2,4 kg |
| 4302 | 290 - 330 mm | 28 mm | 20 kg | 2,6 kg |
| 4302S | 310 - 350 mm | 28 mm | 25 kg | 2,6 kg |
| 4305 | 360 - 400 mm | 28 mm | 50 kg | 2,8 kg |
| 4305L | 348 - 388 mm | 28 mm | 50 kg | 2,8 kg |
| 4305S | 410 - 450 mm | 28 mm | 50 kg | 2,8 kg |
| 4305/TP | 360 - 400 mm | 40 mm | 50 kg | 2,8 kg |
| 4308 | 560 - 600 mm | 28 mm | 180 kg | 3,2 kg |
| 4308/TP | 560 - 600 mm | 40 mm | 180 kg | 3,2 kg |



Art. no. **4310** Art. no. **4315**
 Art. no. **4311** Art. no. **4317**
 Art. no. **4312** Art. no. **4317/TP**
 Art. no. **4312S** Art. no. **4319**
 Art. no. **4314** Art. no. **4319/TP**

Follower plate with rubber edge, available in different dimensions to suit to the various types of grease drums. The follower plate causes a constant grease level inside of the drum and helps to avoid any air pockets inside of the grease close to the suction tube as well as any disposals of grease on the inner surface of the drum.

| Art. no. | Total diameter follower plate | Diameter metal disc | Bore suitable for suction tube diameter of | Suitable for drums of | Weight |
|----------------|-------------------------------|---------------------|--|-----------------------|--------|
| 4310 | 205 mm | 150 mm | 28 mm | 5 kg | 0,7 kg |
| 4311 | 275 mm | 230 mm | 28 mm | 18 kg | 0,9 kg |
| 4312 | 350 mm | 285 mm | 28 mm | 20 kg | 1,5 kg |
| 4312S | 340 mm | 286 mm | 28 mm | 25 kg | 1,6 kg |
| 4314 | 310 mm | 260 mm | 28 mm | 20 kg | 1,3 kg |
| 4315 | 330 mm | 260 mm | 28 mm | 20 kg | 1,2 kg |
| 4317 | 390 mm | 325 mm | 28 mm | 50 kg | 1,7 kg |
| 4317/TP | 390 mm | 325 mm | 40 mm | 50 kg | 1,7 kg |
| 4319 | 590 mm | 540 mm | 28 mm | 180 kg | 4,0 kg |
| 4319/TP | 590 mm | 540 mm | 40 mm | 180 kg | 4,0 kg |



Art. no. **4340** Art. no. **4328** Art. no. **4341**

Art. no. **4328**

Plastic bung adapter for fixation of pumps, 2" BSP (M) x 28 mm.

Art. no. **4340**

Plastic bung adapter for fixation of pumps, 2" BSP (M) x 40 mm.

Art. no. **4341**

Plastic lock ring for bung adapter, 2" BSP (M), for art. nos. 4328 and 4340.

Art. no. **4326**

Hose, length 1200 mm, with connector for compressed air. This hose can be connected to the follower plates for 180 kg – drums and allows to set compressed air pressure under the follower plate when it has reached the low level in order to take it out of the drum again more easily.

Art. no. **4326**

Art. no. **4309**

Metal drum cover, including metal bung adapter and metal counter-ring, suitable for the use of pneumatic grease pumps of series "Power Bull" on 180 kg – drums.
Total diameter 600 mm, diameter of bore for suction tube in bung adapter of 50 mm.
Suitable for art. nos. 4048 – 4049 – 4050.

Art. no. **4309/70**

Metal drum cover such as art. no. 4309, but including bung adapter with diameter of bore for suction tube of 70 mm.
Suitable for art. nos. 4046 and 4047.

Art. no. **4309**
Art. no. **4309/70**

Art. no. **4320**

Follower plate with rubber edge, for applications with pneumatic grease pumps of series "Power Bull" on 180 kg – drums. The follower plate causes a constant grease level inside of the drum and helps to avoid any air pockets inside of the grease close to the suction tube as well as any disposals of grease on the inner surface of the drum.
Total diameter of follower plate 590 mm, diameter of metal disc 540 mm, diameter of bore for suction tube 50 mm. Suitable for art. nos. 4048 – 4049 – 4050.

Art. no. **4320/70**

Follower plate such as art. no. 4320, but diameter of bore for suction tube 70 mm. Suitable for art. nos. 4046 and 4047.

Art. no. **4320**
Art. no. **4320/70**

Art. no. **4343/50**

Art. no. **4343/70**

Art. no. **4343/50**

Metal bung adapter for the fixation of pumps, series "Power Bull", 2" BSP (M) x 50 mm, on drums.
Suitable for art. nos. 4048 – 4049 – 4050.

Art. no. **4343/70**

Metal bung adapter for fixation of pumps, series "Power Bull", 2" BSP (M) x 70 mm, on drums.
Suitable for art. nos. 4046 and 4047.

Art. no. **4343/71**

Metal lock ring for bung adapter, 2" BSP (M), for art. no. 4343/70.

Art. no. **4342/50**

Metal flange plate for fixation of pumps, series "Power Bull", with suction tube diameter 50 mm, without bung adapter. Suitable for art. nos. 4048 – 4049 – 4050.

Art. no. **4342/70**

Metal flange plate for fixation of pumps, series "Power Bull", with suction tube diameter 70 mm, without bung adapter. Suitable for art. nos. 4046 and 4047.

Art. no. **4342/70**

Art. no. **4342/50**

High pressure rubber hoses SAE 100 R2 AT – EN 853 – DIN 20022 – 15 N, with female, straight BSP – connections, suitable for the supply of grease. Ideal for the connection on pumps or hose reels.

Internal structure and coating: oil-resistant, synthetic rubber.

Reinforcement: 2 steel wire braided, highly resistant layers.

Cover coat: black synthetic rubber, oil-resistant and resistant to atmospheric influences.



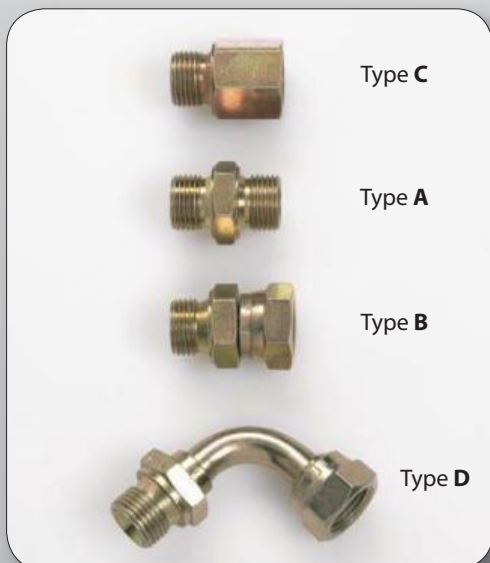
HOW TO ORDER

| Length | Ø 1/4" Art. no. | Ø 3/8" Art. no. | Ø 1/2" Art. no. | Ø 3/4" Art. no. | Ø 1" Art. no. | Ø 1 1/4" Art. no. |
|--------|-----------------|-----------------|-----------------|-----------------|---------------|-------------------|
| 1 m | 4501 | 47001 | 4801 | 28901 | 289501 | 281401 |
| 1,5 m | 45015 | 47015 | 48015 | 289015 | 2895015 | 2814015 |
| 2 m | 4502 | 4702 | 4802 | 28902 | 289502 | 281402 |
| 3 m | 4503 | 4703 | 4803 | 28903 | 289503 | 281403 |
| 5 m | 4505 | 4705 | 4805 | 28905 | 289505 | 281405 |
| 6 m | 4506 | 4706 | 4806 | 28906 | 289506 | 281406 |
| 10 m | 4510 | 4710 | 4810 | 28910 | 289510 | 281410 |
| 15 m | 4515 | 4715 | 4815 | 28915 | 289515 | 281415 |
| 20 m | 4520 | 4720 | 4820 | 28920 | 289520 | 281420 |
| 25 m | - | 4725 | 4825 | 28925 | 289525 | 281425 |
| 30 m | - | 4730 | 4830 | 28930 | 289530 | 281430 |
| 35 m | - | 4735 | 4835 | 28935 | 289535 | 281435 |
| 40 m | - | 4740 | 4840 | 28940 | 289540 | 281440 |

Other lengths available on demand!

TECHNICAL DATA

| Nominal diameter | Ø 1/4" | Ø 3/8" | Ø 1/2" | Ø 3/4" | Ø 1" | Ø 1 1/4" |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Internal diameter (mm) | 6,4 mm | 9,5 mm | 12,7 mm | 19 mm | 25,4 mm | 31,8 mm |
| Wire braid diameter (mm) | 12,7 mm | 16,7 mm | 19,8 mm | 25,4mm | 33,3 mm | 40,5 mm |
| External diameter (mm) | 15 mm | 19 mm | 22,2 mm | 27,7 mm | 35,6 mm | 43,5 mm |
| Working pressure (bar) | 400 bar | 330 bar | 275 bar | 105 bar | 88 bar | 63 bar |
| Burst pressure (bar) | 1600 bar | 1320 bar | 1100 bar | 420 bar | 350 bar | 250 bar |
| Min bending radius (mm) | 100 mm | 130 mm | 180 mm | 240 mm | 300 mm | 420 mm |
| Working temperature | min -40°C, max +100°C | min -40°C, max +100°C | min -40°C, max +100°C | min -40°C, max +100°C | min -40°C, max +100°C | min -40°C, max +100°C |
| Weight (kg/m) | 0,36 kg/m | 0,53 kg/m | 0,63 kg/m | 0,61 kg/m | 0,94 kg/m | 1,19 kg/m |



Type C

Type A

Type B

Type D

Type A

Double male connection adapter, BSP, galvanized steel.

Art. no. **9911** 1/2" x 3/8"

Art. no. **9912** 1/2" x 1/4"

Art. no. **4223** 1/4" x 1/4"

Type B

Male – female swivel connection adapter, BSP, galvanized steel.

Art. no. **4229** 1/4" x 1/4"

Type C

Male – female connection adapter, BSP, galvanized steel.

Art. no. **9905** 1/2" x 1/4"

Art. no. **9906** 1/2" x 3/8"

Art. no. **4231** 1/4" x 1/4"

Type D

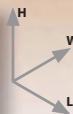
90°- curved male – female connection adapter, BSP, galvanized steel.

Art. no. **4232** 1/4" x 1/4"



Automatic, spring – driven hose reel, standard series, in painted steel, including rubber hoses SAE 100 R2 AT with female connection threads, suitable for the supply of grease at high pressure.

| Art. no. | Ø hose | Length hose | Max working pressure | Reel width | Ø reel | Art. no. suitable swivel bracket | Weight | Dimensions (LxWxH) (mm) |
|-----------|--------|-------------|----------------------|------------|--------|----------------------------------|--------|-------------------------|
| 9016+4510 | 1/4" | 10 m | 400 bar | 120 mm | 450mm | 9767 | 17 Kg | 250x550x450 |
| 9016+4710 | 3/8" | 10 m | 330 bar | 120 mm | 450mm | 9767 | 20 Kg | 250x550x450 |
| 9016+4810 | 1/2" | 10 m | 275 bar | 120 mm | 450mm | 9767 | 18 Kg | 250x550x450 |
| 9016+4515 | 1/4" | 15 m | 400 bar | 120 mm | 450mm | 9767 | 18 Kg | 250x550x450 |
| 9016+4715 | 3/8" | 15 m | 330 bar | 120 mm | 450mm | 9767 | 21 Kg | 250x550x450 |
| 9016+4815 | 1/2" | 15 m | 275 bar | 120 mm | 450mm | 9767 | 20 Kg | 250x550x450 |
| 9021+4520 | 1/4" | 20 m | 400 bar | 150 mm | 450mm | 9768 | 26 Kg | 260x550x450 |
| 9021+4720 | 3/8" | 20 m | 330 bar | 150 mm | 450mm | 9768 | 28 Kg | 260x550x450 |
| 9021+4820 | 1/2" | 20 m | 275 bar | 150 mm | 450mm | 9768 | 27 Kg | 260x550x450 |



Automatic, spring – driven hose reel, adjustable arms series, in painted steel, including rubber hoses SAE 100 R2 AT with female connection threads, suitable for the supply of grease at high pressure.

| Art. no. | Ø hose | Length hose | Max working pressure | Reel width | Ø reel | Art. no. suitable swivel bracket | Weight | Dimensions (LxWxH) (mm) |
|-----------|--------|-------------|----------------------|------------|--------|----------------------------------|--------|-------------------------|
| 9090+4510 | 1/4" | 10 m | 400 bar | 120 mm | 450mm | 9767 | 20 Kg | 250x550x450 |
| 9090+4710 | 3/8" | 10 m | 330 bar | 120 mm | 450mm | 9767 | 20 Kg | 250x550x450 |
| 9090+4810 | 1/2" | 10 m | 275 bar | 120 mm | 450mm | 9767 | 22 Kg | 250x550x450 |
| 9091+4515 | 1/4" | 15 m | 400 bar | 120 mm | 450mm | 9767 | 25 Kg | 250x550x450 |
| 9091+4520 | 1/4" | 20 m | 400 bar | 120 mm | 450mm | 9767 | 26 Kg | 250x550x450 |
| 9092+4720 | 3/8" | 20 m | 400 bar | 120 mm | 450mm | 9767 | 27 Kg | 250x550x450 |
| 9093+4725 | 3/8" | 25 m | 330 bar | 150 mm | 450mm | 9768 | 31 Kg | 280x550x450 |
| 9083+4530 | 1/4" | 30 m | 400 bar | 150 mm | 540mm | 9777 | 42 Kg | 250x590x600 |
| 9083+4730 | 3/8" | 30 m | 330 bar | 150 mm | 540mm | 9777 | 44 Kg | 250x590x600 |
| 9083+4830 | 1/2" | 30 m | 275 bar | 150 mm | 540mm | 9777 | 45 Kg | 250x590x600 |



Automatic, spring – driven hose reel, enclosed series, in painted steel, including rubber hoses SAE 100 R2 AT with female connection threads, suitable for the supply of grease at high pressure.

| Art. no. | Ø hose | Length hose | Max working pressure | Reel width | Ø reel | Art. no. suitable swivel bracket | Weight | Dimensions (LxWxH) (mm) |
|-----------|--------|-------------|----------------------|------------|--------|----------------------------------|--------|-------------------------|
| 9013+4510 | 1/4" | 10 m | 400 bar | 120 mm | 450mm | 9778 | 20 kg | 250x550x450 |
| 9013+4710 | 3/8" | 10 m | 330 bar | 120 mm | 450mm | 9778 | 20 kg | 250x550x450 |
| 9013+4810 | 1/2" | 10 m | 275 bar | 120 mm | 450mm | 9778 | 20 kg | 250x550x450 |
| 9013+4515 | 1/4" | 15 m | 400 bar | 120 mm | 450mm | 9778 | 23 kg | 250x550x450 |
| 9013+4715 | 3/8" | 15 m | 330 bar | 120 mm | 450mm | 9778 | 23 kg | 250x550x450 |
| 9013+4815 | 1/2" | 15 m | 275 bar | 120 mm | 450mm | 9778 | 24 kg | 250x550x450 |
| 9023+4520 | 1/4" | 20 m | 400 bar | 150 mm | 450mm | 9778 | 26 kg | 280x550x450 |
| 9023+4720 | 3/8" | 20 m | 330 bar | 150 mm | 450mm | 9778 | 26 kg | 280x550x450 |
| 9023+4820 | 1/2" | 20 m | 275 bar | 150 mm | 450mm | 9778 | 27 kg | 280x550x450 |



For other hose reel models please see chapter "Hose reels" on page 208!

FLEXBIMEC produces a wide range of pneumatic oil pumps that offers an appropriate solution for any kind of fluid viscosity, required delivery, pumping distance, necessary outlet pressure, ambient temperature as well as for simultaneous fluid supplies and any type of storage container.

In the following charts the essential data for selecting the adequate pump for the individual requirements are shown.

For more detailed information please see the following pages.

Compression ratio 1:1

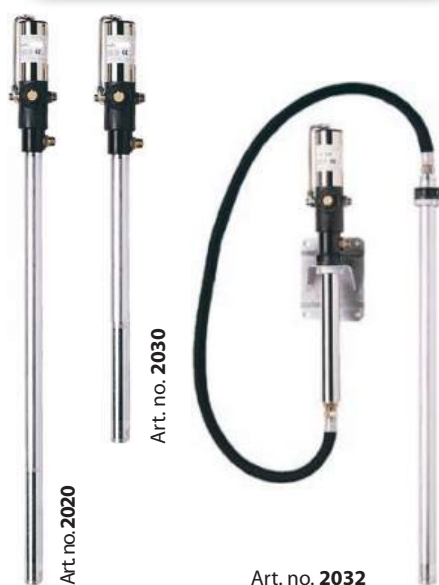


| Art. no. | Delivery | | | |
|----------|----------|--|--|--|
| 2040 | 48 l/min | | | |
| 2043 | 35 l/min | | | |
| 2043L | 35 l/min | | | |
| 2044 | 35 l/min | | | |
| 2047 | 35 l/min | | | |
| 2047/L | 35 l/min | | | |
| 2049 | 35 l/min | | | |
| 1045 | 35 l/min | | | |

These pumps are recommended for the use
- at pumping distances up to 15 m,
- with low viscosity fluids.

See page 40!

Compression ratio 3:1



| Art. no. | Delivery | | | |
|----------|----------|--|--|--|
| 2020 | 24 l/min | | | |
| 2030 | 24 l/min | | | |
| 2073 | 17 l/min | | | |
| 2074 | 17 l/min | | | |
| 2032 | 21 l/min | | | |
| 2033 | 21 l/min | | | |
| 2020TWDE | 28 l/min | | | |
| 2030TWDE | 28 l/min | | | |

These pumps are recommended for the use
- at pumping distances up to 100 m,
- with low and medium viscosity fluids.

See pages 41 and 43!

Compression ratio 5:1



| Art. no. | Delivery | | | |
|------------|----------|--|--|--|
| 2025 | 15 l/min | | | |
| 2035 | 15 l/min | | | |
| 2075 | 13 l/min | | | |
| 2075/L | 13 l/min | | | |
| 2076 | 13 l/min | | | |
| 2061 | 17 l/min | | | |
| 2025TWDE | 22 l/min | | | |
| 2035TWDE | 22 l/min | | | |
| 2075/LTWDE | 20 l/min | | | |
| 2076TWDE | 20 l/min | | | |

These pumps are recommended for the use
- at pumping distances up to 200 m,
- with low and medium viscosity fluids,
- with high viscosity fluids at shorter pumping distances.

See pages 42 – 43 – 44!

Legend

| | | | | | | | | | | | |
|--------------|--|------------|--|-------------|--|-----------|--|------------|--|-------------------------|--|
| Oil SAE 0/40 | | Oil SAE 90 | | Oil SAE 240 | | Waste oil | | Antifreeze | | Windshield washer fluid | |
|--------------|--|------------|--|-------------|--|-----------|--|------------|--|-------------------------|--|

The **FLEXBIMEC** oil pump range is completed by the industrial pump series **"Power Bull"** with high delivery pumps for the supply of fluid lubricants in demanding conditions. These pumps are particularly recommended for the distribution of medium or high viscosity oils in applications or pipeworks where a simultaneous supply in different distribution points at high pressure and high delivery is required. The elevated quality of the used materials and the innovative constructional concept of the pneumatic motors of this line assure the following characteristics and advantages:

- Efficiency of a constant flow,
- Low noise level,
- Limited number of piston strokes,
- Low vibrations,
- Easy maintenance and interchangeability of components,
- Included overpressure control valve,
- Included drain device for condensation water in order to avoid a spraying into the surrounding area.

Series "Tapir"



Art. no. 2012 Art. no. 2013 Art. no. 2016

| Art.no. | Ratio | Delivery | | | |
|---------|-------|----------|--|--|--|
| 2012 | 6:1 | 32 l/min | | | |
| 2013 | 2:1 | 48 l/min | | | |
| 2014 | 5:1 | 18 l/min | | | |
| 2015 | 5:1 | 18 l/min | | | |
| 2016 | 6:1 | 32 l/min | | | |

These pumps are recommended

- to achieve high deliveries in the use with low viscosity fluids (art. no. 2013),
- for the use with low and medium viscosity fluids at pumping distances of more than 300 m,
- for the use with high viscosity fluids at long pumping distances (art. nos. 2012 and 2016)
- for simultaneous fluid supplies.

See page 45!

Industrial pump series "Power Bull" Single acting models



Art. no. 2056 Art. no. 2055 Art. no. 2096 Art. no. 2098
Art. no. 2097

| Art.no. | Ratio | Delivery | | | |
|---------|-------|-----------|--|--|--|
| 2055 | 10:1 | 27 l/min | | | |
| 2056 | 16:1 | 15 l/min | | | |
| 2096 | 4:1 | 50 l/min | | | |
| 2097 | 10:1 | 40 l/min | | | |
| 2098 | 1,5:1 | 122 l/min | | | |

These pumps are recommended

- to achieve very high deliveries in the use with low viscosity fluids (art. no. 2098),
- for the use with low and medium viscosity fluids at pumping distances of more than 300 m,
- for the use with high viscosity fluids at long pumping distances (art. nos. 2055, 2056 2096, 2097),
- for simultaneous fluid supplies.

See page 47!

Industrial pump series "Power Bull" Double acting models



Art. no. 2092 Art. no. 2093 Art. no. 2094

| Art.no. | Ratio | Delivery | | | |
|---------|-------|----------|--|--|--|
| 2057 | 10:1 | 27 l/min | | | |
| 2058 | 16:1 | 15 l/min | | | |
| 2088 | 4:1 | 64 l/min | | | |
| 2091 | 6:1 | 42 l/min | | | |
| 2092 | 7:1 | 40 l/min | | | |
| 2093 | 4:1 | 62 l/min | | | |
| 2094 | 6:1 | 55 l/min | | | |

These pumps are recommended

- to achieve high deliveries in the use with low viscosity fluids,
- for the use with low and medium viscosity fluids at pumping distances of more than 300 m,
- for the use with high viscosity fluids at long pumping distances,
- for simultaneous fluid supplies.

See pages 46 and 48!

Legend

| | | | | | |
|--------------|------------|-------------|-----------|------------|-------------------------|
| Oil SAE 0/40 | Oil SAE 90 | Oil SAE 240 | Waste oil | Antifreeze | Windshield washer fluid |
|--------------|------------|-------------|-----------|------------|-------------------------|

Pneumatic pumps for the transfer of low viscosity oils and antifreeze at high delivery and short pumping distances.

1:1 Compression ratio

Single acting - 35 l/min



Art. no. **2043**
Oil
Waste oil
Art. no. **2049**
Pure antifreeze

Single acting - 35 l/min



Art. no. **2043/L**
Oil
Art. no. **2047/L**
Pure antifreeze

Double acting - 48 l/min



Art. no. **2040**
Oil

Single acting - 35 l/min



Art. no. **2044** **Oil**
Art. no. **2047** **Pure antifreeze / Waste oil**

| Art. no. | 2040 | 2043 2049 | 2044 2047 | 2043/L 2047/L |
|---|-------------------------------|--------------|--------------|------------------|
| Compressed air supply | Pressure Min 2 bar, Max 8 bar | | | |
| Compression ratio | 1,4 : 1 | 1,3 : 1 | 1,3 : 1 | 1,3 : 1 |
| Outlet pressure | 10 bar | 9 bar | 9 bar | 9 bar |
| Delivery | 48 l/min | 35 l/min | 35 l/min | 35 l/min |
| Connection compressed air | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) |
| Connection lubricant outlet | 3/4" BSP (M) | 3/4" BSP (M) | 3/4" BSP (M) | 3/4" BSP (M) |
| Max air consumption with 8 bar pressure | 210 l/min | 210 l/min | 210 l/min | 210 l/min |
| Length suction tube | 950 mm | 250 mm | - | 950 mm |
| Diameter suction tube | 55 mm | 55 mm | 55 mm | 55 mm |
| Suitable for drums of | 208 l | Spec. | Spec. | 208 l |
| Weight | 6,6 Kg | 4,4 Kg | 4,5 kg | 5,2 kg |
| Dimensions (LxWxH) (mm) | 95x95x1180 | 110x110x530 | 110x110x530 | 95x95x1180 |

The a. m. performance values are based upon the following test conditions:
Hydraulic oil ISO 32 at 22°C -- Compressed air pressure 8 bar -- free flow outlet.



Art. no. **7180**

Art. no. **7150**

OPTIONAL

Maintenance advise

- It is recommended to use rubber hoses with a diameter of min. 3/4".
- For a continuous use of the pump it is recommended to install a compressed air treatment unit, composed of pressure regulator with manometer and moisture separator (art. no. 7180) or pressure regulator with manometer, moisture separator and lubricator (art. nos. 7150) at the compressed air inlet of the pump.
- Any installed valves, curves, filters, ball valves or flow meters will reduce the delivery of the pump.

See accessories on pages 49 – 50 and 58 – 69!

Pneumatic pumps for the supply of low and medium viscosity oils and antifreeze for the use in mobile kits or in pipeworks.

3:1 Compression ratio

Double acting - 23,7 l/min



Art. no. **2030**
Oil

Double acting - 23,7 l/min



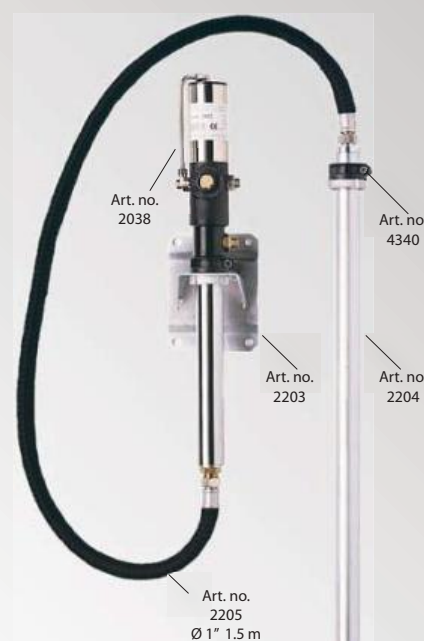
Art. no. **2020**
Oil
Art. no. **2020130**
IBC 1000 l

Single acting - 16,7 l/min



Art. no. **2073**
Oil
Art. no. **2074**
Pure antifreeze

Double acting - 20,5 l/min



Art. no. **2032**
Oil
Art. no. **2033**
Pure antifreeze
Art. no. **2032130**
IBC 1000 l
Art. no. **2033130**
IBC 1000 l

| Art. no. | 2030 | 2020 | 2020130 | 2073 2074 | 2032 2033 | 2032130 2033130 |
|---|---------------------------|--------------|--------------|--------------|--------------|--------------------|
| Compressed air supply | Pressure Min 2, Max 8 bar | | | | | |
| Compression ratio | 3 : 1 | 3 : 1 | 3 : 1 | 3 : 1 | 3 : 1 | 3 : 1 |
| Outlet pressure | 24 bar | 24 bar | 24 bar | 24 bar | 24 bar | 24 bar |
| Delivery | 23,7 l/min | 23,7 l/min | 23,7 l/min | 16,7 l/min | 20,5 l/min | 20,5 l/min |
| Connection compressed air | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) |
| Connection lubricant outlet | 1/2" BSP (M) | 1/2" BSP (M) | 1/2" BSP (M) | 1/2" BSP (M) | 1/2" BSP (M) | 1/2" BSP (M) |
| Max air consumption with 8 bar pressure | 210 l/min | 210 l/min | 210 l/min | 210 l/min | 210 l/min | 210 l/min |
| Length suction tube | 750 mm | 950 mm | 1300 mm | 950 mm | 950 mm | 1300 mm |
| Diameter suction tube | 40 mm | 40 mm | 40 mm | 40 mm | 45 mm | 45 mm |
| Suitable for drums of | 60 l | 208 l | 1000 l | 208 l | 208 l | 1000 l |
| Weight | 5 kg | 5,7 kg | 5,9 kg | 5,6 kg | 5,2 kg | 5,4 kg |
| Dimensions (LxWxH) (mm) | 95x95x1070 | 95x95x1270 | 95x95x1500 | 95x95x1270 | 95x95x530 | 95x95x1500 |

The a. m. performance values are based upon the following test conditions:
Hydraulic oil ISO 32 at 22°C -- Compressed air pressure 8 bar -- free flow outlet

See accessories on pages
49 - 50 and 58 - 69!



Pneumatic pumps for the supply of medium and high viscosity oils for the use in mobile kits or in pipeworks.

5:1 Compression ratio

Double acting - 15 l/min



Art. no. **2035**
Oil

Double acting - 15 l/min



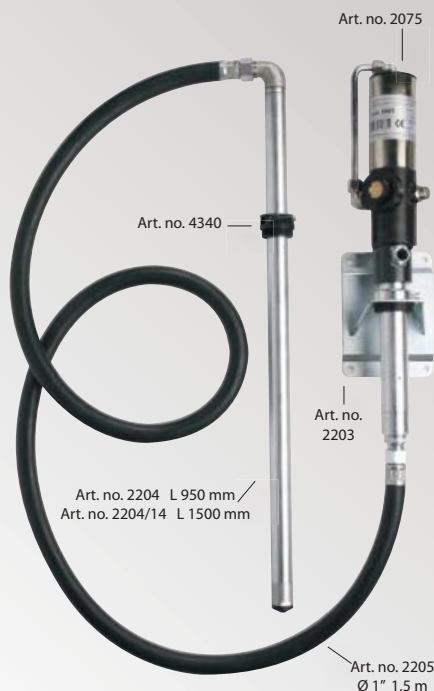
Art. no. **2025**
Oil
Art. no. **2025130**
IBC 1000 l

Single acting - 13 l/min



Art. no. **2075/L**
Oil

Single acting - 13 l/min



Art. no. **2076**

Art. no. **2076130**
IBC 1000 l

| Art. no. | 2035 | 2025 2025130 | 2061 2061130 | 2075/L | 2076 2076130 |
|---|-------------------------------|-----------------|-----------------|--------------|-----------------|
| Compressed air supply | Pressure Min 2 bar, Max 8 bar | | | | |
| Compression ratio | 5 : 1 | 5 : 1 | 5 : 1 | 5 : 1 | 5 : 1 |
| Outlet pressure | 40 bar | 40 bar | 40 bar | 40 bar | 40 bar |
| Delivery | 15 l/min | 15 l/min | 18 l/min | 13 l/min | 13 l/min |
| Connection compressed air | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) |
| Connection lubricant outlet | 1/2" BSP (M) | 1/2" BSP (M) | 1/2" BSP (M) | 1/2" BSP (M) | 1/2" BSP (M) |
| Max air consumption with 8 bar pressure | 210 l/min | 210 l/min | 210 l/min | 210 l/min | 210 l/min |
| Length suction tube | 750 mm | 950/1300 mm | 950/1300 mm | 950 mm | 950/1300 mm |
| Diameter suction tube | 40 mm | 40 mm | 40 mm | 40 mm | 40 mm |
| Suitable for drums of | 60 l | 208/1000 l | 208/1000 l | 208 l | 208/1000 l |
| Weight | 5,2 kg | 5,8 kg | 5,4 kg | 4,5 kg | 5 kg |
| Dimensions (LxWxH) (mm) | 95x95x1070 | 95x95x1270 | 95x95x1270 | 95x95x1270 | 95x95x950 |

Double acting - 18 l/min



Art. no. **2061**

Art. no. **2061130**
IBC 1000 l

The a. m. performance values are based upon the following test conditions:
Hydraulic oil ISO 32 at 22°C -- Compressed air pressure 8 bar -- free flow outlet

See accessories on pages
49 – 50 and 58 – 69!

Pneumatic oil pumps with double compressed air outlet distributor, assuring higher delivery rates compared to the standard Art. no.1s.

SERIE TWDE



| Art. no. | 2020TWDE | 2030TWDE | 2025TWDE | 2035TWDE | 2075/LTWDE |
|---|-------------------------------|--------------|--------------|--------------|--------------|
| Compressed air supply | Pressure Min 2 bar, Max 8 bar | | | | |
| Compression ratio | 3 : 1 | 3 : 1 | 5 : 1 | 5 : 1 | 5 : 1 |
| Outlet pressure | 24 bar | 24 bar | 40 bar | 40 bar | 40 bar |
| Delivery | 28 l/min | 28 l/min | 22 l/min | 22 l/min | 17 l/min |
| Connection compressed air | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) | 1/4" BSP (F) |
| Connection lubricant outlet | 1/2" BSP (M) | 1/2" BSP (M) | 1/2" BSP (M) | 1/2" BSP (M) | 1/2" BSP (M) |
| Max air consumption with 8 bar pressure | 230 l/min | 230 l/min | 260 l/min | 260 l/min | 230 l/min |
| Length suction tube | 950 mm | 650 mm | 950 mm | 650 mm | 950 mm |
| Diameter suction tube | 40 mm | 40 mm | 40 mm | 40 mm | 32 mm |
| Suitable for drums of | 208 l | 60 l | 208 l | 60 l | 208 l |
| Weight | 5,5 kg | 5 kg | 5,7 kg | 5,3 kg | 4 kg |
| Dimensions (LxWxH) (mm) | 95x95x1270 | 95x95x1070 | 95x95x1270 | 95x95x1070 | 95x95x1270 |

The a. m. performance values are based upon the following test conditions:
Hydraulic oil ISO 32 at 22°C -- Compressed air pressure 8 bar -- free flow outlet

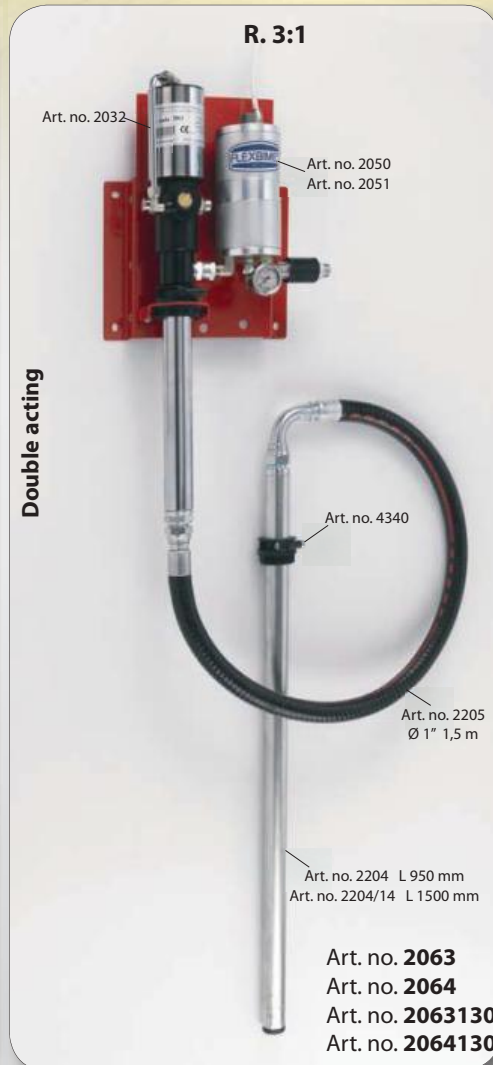
See accessories on pages
49 – 50 and 58 – 69!



- It is recommended to use rubber hoses with a diameter of min. 3/4".
- For a continuous use of the pump it is recommended to install a compressed air treatment unit, composed of pressure regulator with manometer and moisture separator (art. no. 7180) or pressure regulator with manometer, moisture separator and lubricator (art. nos. 7150) at the compressed air inlet of the pump.
- Any installed valves, curves, filters, ball valves or flow meters will reduce the delivery of the pump.

Pneumatic pumps for the supply of oils, approved for fiscal transactions according to the European Directive 2004/22/EC, better known as Measurement Instrument Directive (MID) MI-005, meeting also the requirements of OIML R117-1 (DIN 19217).

SERIES MID



Art. no. 2050 - 2051

Automatic air separator kits, suitable to separate the air eventually present in the suction line from the oil, available with (= art. no. 2051) or without (= art. no. 2050) automatic pump stop device, approved according to OIML R117-1; includes also manometer for the control of the outlet pressure and non-return valve.

By installing the air separator at the fluid outlet of a pump can be achieved the working conditions needed to meet the requirements of the directive MID MI-005 in combination with an oil flow meter that must also be approved for fiscal transactions.

Art. no. 2050 Air separator kit without automatic pump stop device

Art. no. 2051 Air separator kit with automatic pump stop device (stopping the pump as soon as air is sucked into the suction line due to an empty drum or tank)

| Art. no. | 2023 | 2024 | 2063 | 2064 | 2063130 | 2064130 |
|--|---------------------------|--------|--------------|--------|--------------|---------|
| Compressed air supply | Pressure Min 2, Max 8 bar | | | | | |
| Compression ratio | 3 : 1 | | | | | |
| Outlet pressure | 20 bar | | | | | |
| Delivery | Min 0,5 - Max 5 l/min | | | | | |
| Connection compressed air | 1/4" BSP (F) | | | | | |
| Connection lubricant outlet | 1/2" BSP (M) | | | | | |
| Max air consumption with 8 bar pressure | 210 l/min | | | | | |
| Length suction tube | 950 mm | | | | 1500 mm | |
| Diameter suction tube | 40 mm | | | | | |
| Suitable for drums of | 208 l | | | | 1000 l | |
| Weight | 8,5 kg | 8,6 kg | 8,8 kg | 8,9 kg | 9 kg | 9,1 kg |
| Dimensions (LxWxH) (mm) | 95x1200x1300 | | 95x1200x1300 | | 95x1200x1400 | |

The a. m. performance values are based upon the following test conditions:
Hydraulic oil ISO 32 at 22°C -- Compressed air pressure 8 bar -- free flow outlet

Art. no. 2023 Art. no. 2063

Double acting pneumatic pumps, for the mounting directly in 208 l – drums (= art. no. 2023, based on pump art. no. 2020) or as wall-mounted pump kits (= art. no. 2063, based on pump art. no. 2032) with air separator kit art.no. 2050 (without automatic pump stop) **according to OIML R117-1**, approved for the use in fiscal transactions.

Art. no. 2024 Art. no. 2064

Double acting pneumatic pumps, for the mounting directly in 208 l – drums (= art. no. 2024, based on pump art. no. 2020) or as wall-mounted pump kits (= art. no. 2064, based on pump art. no. 2032) with air separator kit art. no. 2051 (with automatic pump stop, stopping the pump as soon as air is sucked into the suction line due to an empty drum or tank) **according to OIML R117-1**, approved for the use in fiscal transactions.

See accessories on pages
49 – 50 and 58 – 69!

Pneumatic pumps for the supply of medium and high viscosity oils for the use in mobile kits or in pipeworks.

SERIES TAPIR



| Art. no. | 2013 | 2015 | 2012 | 2014 | 2016 |
|---|---------------------------|--------------|--------------|--------------|--------------|
| Compressed air supply | Pressure Min 2, Max 8 bar | | | | |
| Compression ratio | 2 : 1 | 5 : 1 | 6 : 1 | 5 : 1 | 6 : 1 |
| Outlet pressure | 16 bar | 40 bar | 48 bar | 40 bar | 48 bar |
| Delivery | 48 l/min | 18 l/min | 32 l/min | 18 l/min | 32 l/min |
| Connection compressed air | 1/4" BSP (F) | 1/4" BSP (F) | 1/2" BSP (F) | 1/4" BSP (F) | 1/2" BSP (F) |
| Connection lubricant outlet | 3/4" BSP (M) | | | | |
| Max air consumption with 8 bar pressure | 220 l/min | 220 l/min | 260 l/min | 220 l/min | 260 l/min |
| Length suction tube | 950 mm | | | | |
| Diameter suction tube | 55 mm | 40 mm | 40 mm | 40 mm | 40 mm |
| Suitable for drums of | 208 l | | | | |
| Weight | 8,5 kg | 8,2 kg | 12 kg | 8,2 kg | 12 kg |
| Dimensions (LxWxH) (mm) | 95x95x1270 | | | 95x95x1500 | |

The a. m. performance values are based upon the following test conditions:
Hydraulic oil ISO 32 at 22°C -- Compressed air pressure 8 bar -- free flow outlet

See accessories on pages
49 – 50 and 58 - 69!



Heavy duty pneumatic pumps, industrial pump series "Power Bull", designed for the supply of oil under demanding conditions. Particularly suitable for the oil distribution in pipeworks and installations where a simultaneous supply of oil is required on different dispensing points at high pressure and/or with a high delivery.

SERIES POWER BULL

R. 10:1

Delivery 27 l/min



Art. no. 2057

R. 16:1

Delivery 15 l/min



Art. no. 2058

R. 4:1

Delivery 64 l/min



Art. no. 2088

R. 6:1

Delivery 42 l/min



Art. no. 2091

| Art. no. | 2057 | 2058 | 2088 | 2091 |
|---|-------------------------------|--------------------------|--------------------------|--------------------------|
| Compressed air supply | Pressure Min 1 bar, Max 8 bar | | | |
| Compression ratio | 10 : 1 | 16 : 1 | 4 : 1 | 6 : 1 |
| Delivery | 27 l/min | 15 l/min | 64 l/min | 42 l/min |
| Outlet pressure | 80 bar | 128 bar | 32 bar | 48 bar |
| Max frequency strokes/min | 150 | 120 | 150 | 120 |
| Max air consumption with 8 bar pressure | 2,05 m ³ /min | 1,92 m ³ /min | 2,05 m ³ /min | 1,92 m ³ /min |
| Diameter pneumatic piston | 100 mm | 125 mm | 100 mm | 125 mm |
| Diameter suction tube | 50 x 40 mm | 50 x 40 mm | 55 x 50 mm | 55 x 50 mm |
| Connection lubricant outlet | 1" BSP (M) | | | |
| Connection compressed air | 1/2" BSP (M) | | | |
| Suitable for drums of | 208 l | | | |
| Weight | 15 kg | 16 kg | 16 kg | 17 kg |



Art. no. 7180/12 Art. no. 7150/12

OPTIONAL Maintenance advice

In order to avoid a slowing-down or even a blocking of the pump due to a freezing of generated condensation water closing the air outlet of the motor, we recommend the installation of the above shown air treatment units at the compressed air connection of the pump.

The a. m. performance values are based upon the following test conditions:
Hydraulic oil ISO 32 at 22°C -- Compressed air pressure 8 bar -- free flow outlet

See accessories on pages
49 – 50 and 58 – 69!

Heavy duty pneumatic pumps, industrial pump series "Power Bull", designed for the supply of oil under demanding conditions. Particularly suitable for the oil distribution in pipeworks and installations where a simultaneous supply of oil is required on different dispensing points at high pressure and/or with a high delivery.

SERIES POWER BULL



Art. no. 2056

Art. no. 2055

Art. no. 2096
Art. no. 2097

Art. no. 2098



| Art. no. | 2055 | 2056 | 2096 | 2097 | 2098 |
|---|-------------------------------|--------------------------|------------|--------------------------|--------------------------|
| Compressed air supply | Pressure Min 1 bar, Max 8 bar | | | | |
| Compression ratio | 10 : 1 | 16 : 1 | 4 : 1 | 10 : 1 | 1,5 : 1 |
| Delivery | 27 l/min | 15 l/min | 50 l/min | 40 l/min | 122 l/min |
| Outlet pressure | 80 bar | 128 bar | 32 bar | 80 bar | 12 bar |
| Max frequency strokes/min | 150 | 120 | | | |
| Max air consumption with 8 bar pressure | 2,05 m ³ /min | 1,92 m ³ /min | | 1,80 m ³ /min | 1,92 m ³ /min |
| Diameter pneumatic piston | 100 mm | 125 mm | 125 mm | 160 mm | 125 mm |
| Diameter suction tube | 50 x 40 mm | 50 x 40 mm | 80 x 70 mm | 80 x 70 mm | 110 x 100 mm |
| Connection lubricant outlet | 1" BSP (M) | | | | |
| Connection compressed air | 1/2" BSP (F) | | | | |
| Application | Wall mounted pump | | | | |
| Weight | 15 kg | 16 kg | 20 kg | 23 kg | 21 kg |

The a. m. performance values are based upon the following test conditions:
Hydraulic oil ISO 32 at 22°C -- Compressed air pressure 8 bar -- free flow outlet

See accessories on pages
49 – 50 and 58 - 69!

Heavy duty pneumatic pumps, industrial pump series "Power Bull", designed for the supply of oil under demanding conditions. Particularly suitable for the oil distribution in pipeworks and installations where a simultaneous supply of oil is required on different dispensing points at high pressure and/or with a high delivery.

SERIES POWER BULL



Art. no. **2092**

Art. no. **2093**

Art. no. **2094**



| Art. no. | 2092 | 2093 | 2094 |
|---|-------------------------------|--------------------------|--------------------------|
| Compressed air supply | Pressure Min 1 bar, Max 8 bar | | |
| Compression ratio | 7 : 1 | 4 : 1 | 6 : 1 |
| Delivery | 40 l/min | 62 l/min | 55 l/min |
| Outlet pressure | 56 bar | 32 bar | 48 bar |
| Max frequency strokes/min | 120 | 120 | 60 |
| Max air consumption with 8 bar pressure | 1,92 m ³ /min | 1,92 m ³ /min | 1,80 m ³ /min |
| Diameter pneumatic piston | 125 mm | 125 mm | 160 mm |
| Diameter suction tube | 55 x 50 mm | 80 x 70 mm | 80 x 70 mm |
| Connection lubricant outlet | 1" BSP (M) | | |
| Connection compressed air | 1/2" BSP (F) | | |
| Application | Wall mounted pump | | |
| Weight | 15 kg | 20 kg | 32 kg |

The a. m. performance values are based upon the following test conditions:
Hydraulic oil ISO 32 at 22°C -- Compressed air pressure 8 bar -- free flow outlet

See accessories on pages
49 – 50 and 58 - 69!



Art. no. **2214**

Art. no. 2214/50

Wall bracket in galvanized steel, suitable for the installation of pneumatic oil pumps, series "Power Bull", art. nos. 2055 – 2056. Dimensions: 290 x 290 x 250 mm – \varnothing cylinder 50 mm. Distances between fixation holes: 230 x 205 mm.

Art. no. 2214/55

Wall bracket in galvanized steel, suitable for the installation of pneumatic oil pumps, series "Power Bull", art. no. 2092. Dimensions: 290 x 290 x 250 mm – \varnothing cylinder 55 mm. Distances between fixation holes: 230 x 205 mm.

Art. no. 2214/80

Wall bracket in galvanized steel, suitable for the installation of pneumatic oil pumps, series "Power Bull", art. nos. 2093 – 2094 – 2096 – 2097. Dimensions: 290 x 290 x 250 mm – \varnothing cylinder 80 mm. Distances between fixation holes: 230 x 205 mm.

Art. no. 2214/110

Wall bracket in galvanized steel, suitable for the installation of pneumatic oil pumps, series "Power Bull", art. no. 2098. Dimensions: 290 x 290 x 250 mm – \varnothing cylinder 110 mm. Distances between fixation holes: 230 x 205 mm.



Art. no. **2216**
Art. no. **2218**

Art. no. 2216

Suction tube in galvanized steel, \varnothing 55 mm, length 950 mm, with 90° - curved connection 1 1/4" BSP (M), with foot valve. Suitable for the use of wall-mounted pneumatic oil pumps, series "Power Bull", with 208 l – drums.

Art. no. 2218

Rubber suction hose SAE 100 R1 AT, \varnothing 1 1/4", connections 1 1/4" BSP (F-F), length 1500 mm.

Suction tubes and suction hoses in other lengths available on demand!



Art. no. **4343**

Art. no. 4343/50

Metal bung adapter for the fixation of pumps, series "Power Bull", on drums or tanks. Connection 2" BSP (M) x 50 mm. Suitable for art. nos. 2057 – 2058.

Art. no. 4343/55

Metal bung adapter for the fixation of pumps, series "Power Bull", on drums or tanks. Connection 2" BSP (M) x 55 mm. Suitable for art. nos. 2088 – 2091.



Art. no. **4342/55**

Art. no. **4342/50**

Art. no. 4342/50

Metal flange plate for fixation of pumps, series "Power Bull", with suction tube diameter 50 mm, without bung adapter. Suitable for art. nos. 2055 - 2056 – 2057 - 2058.

Art. no. 4342/55

Metal flange plate for fixation of pumps, series "Power Bull", with suction tube diameter 55 mm, without bung adapter. Suitable for art. nos. 2088 – 2091 - 2092.



Art. no. **7180/12**

Art. no. **7150/12**

Art. no. 7180/12

Art. no. 7150/12

Compressed air treatment unit, composed of pressure regulator with manometer and moisture separator (art. no. 7180/12) or pressure regulator with manometer, condensation water separator and lubricator (art. no. 7150/12). Connections: BSP 1/2".



Art. no. **2203**

Art. no. **2203**

Wall bracket in galvanized steel, suitable for the installation of pneumatic oil pumps, standard series.

Dimensions: 170 x 140 x 235 mm.

Distances between fixation holes: 140 x 200 mm.



Art. no. **2204**
Art. no. **2204/14**

Art. no. **2204**

Suction tube in galvanized steel, \varnothing 40 mm, length 950 mm, with 90° - curved connection 1" BSP (M), with foot valve. Suitable for the use of wall-mounted pneumatic oil pumps, standard series, with 208 l - drums.

Art. no. **2204/14**

Suction tube in galvanized steel, \varnothing 40 mm, length 1100 mm, with 90° - curved connection 1" BSP (M), with foot valve. Suitable for the use of wall-mounted pneumatic oil pumps, standard series, with 1000 l - IBC -tanks.

Art. no. **2205**

Rubber suction hose SAE 100 R1 AT, \varnothing 1", connections 1" BSP (F-F), length 1500 mm.

Suction tubes and suction hoses in other lengths available on demand!



Art. no. **4340**



Art. no. **4341**

Art. no. **4340**

Plastic bung adapter for the fixation of pumps on drums, connection 2" BSP (M) x 40 mm.

Art. no. **4341**

Plastic lock ring, 2", for bung adapter art. no. 4340.



Art. no. **2212**

Art. no. **2212**

Steel mounting plate, for the fixation of pneumatic pumps and accessories on 1000 l - IBC - tanks. Prepared for bung adapter for the fixation of pumps, connection thread 3/4" BSP (F).

Dimensions: 270 x 270 mm.



Art. no. **2217**

Art. no. **2217**

Connection adapter for 1000 l - IBC - tanks in PP, \varnothing 70 mm, connection 1" BSP (M).



Art. no. **8534**

Art. no. **8534**

Metal rack for wall mounting of pumps, length 1350 mm.



Portable pneumatic and electric pumps, suitable for the transfer of small fluid quantities.



Art. no. **6302**
Art. no. **6303**
Art. no. **6304**
Art. no. **6305**
Art. no. **6308**
Art. no. **6309**

Electric gear pump for the transfer of low viscosity oil, antifreeze, diesel, water.
Suitable for an intermittent use.

Pump body in brass, gears in bronze and pump shaft in stainless steel.

Electric cable and crocodile clamps not included.



| Art. no. | Voltage | Current drain | Protection category | Delivery | Outlet pressure | Connections | Weight | Dimensions (LxWxH) (mm) |
|-------------|---------|---------------|---------------------|----------|-----------------|--------------|--------|-------------------------|
| 6302 | 12 Vdc | 6,5 A | IP 55 | 5 l/min | 2 bar | 3/8" BSP (F) | 1,5 kg | 165x160x80 |
| 6303 | 12 Vdc | 6,5 A | IP 55 | 9 l/min | 4 bar | 3/8" BSP (F) | 2,5 kg | 165x166x80 |
| 6304 | 24 Vdc | 3,5 A | IP 55 | 5 l/min | 2 bar | 3/8" BSP (F) | 1,5 kg | 165x160x80 |
| 6305 | 12 Vdc | 6,5 A | IP 55 | 15 l/min | 4 bar | 3/8" BSP (F) | 4 kg | 180x230x83 |
| 6308 | 24 Vdc | 3,5 A | IP 55 | 9 l/min | 4 bar | 3/8" BSP (F) | 2,5 kg | 165x166x80 |
| 6309 | 24 Vdc | 3,5 A | IP 55 | 15 l/min | 4 bar | 3/8" BSP (F) | 4 kg | 180x230x83 |



Art. no. **6312**
Art. no. **6314**
Art. no. **6324**
Art. no. **6326**

Electric gear pump for the transfer of low viscosity oil, antifreeze, diesel, water.

Suitable for an intermittent use.

Pump body in brass, gears in bronze and pump shaft in stainless steel. With metal cover, ON-/OFF switch and 1 m - cable with alligator clamps for battery connection.



| Art. no. | Voltage | Current drain | Protection category | Delivery | Outlet pressure | Connections | Weight | Dimensions (LxWxH) (mm) |
|-------------|---------|---------------|---------------------|----------|-----------------|--------------|--------|-------------------------|
| 6312 | 12 Vdc | 6,5 A | IP 55 | 6 l/min | 2 bar | 3/8" BSP (F) | 2,5 kg | 165x160x80 |
| 6314 | 12 Vdc | 6,5 A | IP 55 | 15 l/min | 4 bar | 3/8" BSP (F) | 4,5 kg | 185x240x85 |
| 6324 | 24 Vdc | 3,5 A | IP 55 | 6 l/min | 2 bar | 3/8" BSP (F) | 2,5 kg | 165x160x80 |
| 6326 | 24 Vdc | 3,5 A | IP 55 | 15 l/min | 4 bar | 3/8" BSP (F) | 4,5 kg | 185x240x85 |



Art. no. **6559**
Art. no. **1058**

Pneumatic rotary gear pump for the transfer of low viscosity oil, antifreeze, diesel, water.

Pump body in brass (art. no. 6559) or in stainless steel (art. no. 1058), gears in bronze, seals in Viton® and pump shaft in stainless steel.



| Art. no. | Compressed air supply | Outlet pressure | Delivery | Connections | Weight | Dimensions (LxWxH) (mm) |
|-------------|-----------------------|-----------------|------------|--------------|--------|-------------------------|
| 6559 | 4 bar | 4 bar | 10,5 l/min | 3/8" BSP (F) | 1,5 kg | 165x160x80 |
| 1058 | 4 bar | 4 bar | 10,5 l/min | 3/8" BSP (F) | 1,5 kg | 165x160x80 |





Art. no. **6125** - 110 Vac
Art. no. **6122** - 230 Vac
Art. no. **6128** - 400 Vac

Electric gear pump, self-priming, protection category IP 55, for the supply of oil, antifreeze, diesel, water at medium pressure; guarantees a constant flow and a low noise level.

Pump body in stainless steel, gears in bronze and pump shaft in stainless steel.

Includes a bypass valve preset on 15 bar pressure and 1,5 m - electric cable with SCHUKO plug.



| Art. no. | Voltage | Power | Current drain | Rpm | Outlet pressure | Delivery l/min | Connections | Weight |
|-------------|----------------|---------|---------------|------|-----------------|----------------|--------------|--------|
| 6125 | 110Vac - 60 Hz | 0,55 kw | 4 A | 2800 | 15 bar | 10,5 | 3/8" BSP (F) | 7,5 kg |
| 6122 | 230Vac - 50 Hz | 0,55 kw | 4 A | 2800 | 15 bar | 10,5 | 3/8" BSP (F) | 7,5 kg |
| 6128 | 400Vac - 50 Hz | 0,55 kw | 4 A | 2800 | 15 bar | 10,5 | 3/8" BSP (F) | 7,5 kg |



Art. no. **6141** - 230 Vac
Art. no. **6129** - 400 Vac

Electric, self-priming gear pump for the supply of oil, antifreeze, diesel, water at medium pressure; guarantees a constant flow and a low noise level. Pump body in stainless steel, gears in bronze and pump shaft in stainless steel.

Kit includes a bypass valve preset on 15 bar pressure, an inline oil filter, a manometer for outlet pressure control, a 1,5 m - electric cable with SCHUKO plug and an electronic pressure switch that starts the pump once the control gun is activated and stops it again due to the pressure increase in the circuit once the gun is closed. Protection category IP 55.



| Art. no. | Voltage | Power | Current drain | Rpm | Outlet pressure | Delivery l/min | Connections | Weight |
|-------------|----------------|---------|---------------|------|-----------------|----------------|--------------|---------|
| 6141 | 230Vac - 50 Hz | 0,55 kw | 4 A | 2800 | 15 bar | 10,5 | 3/8" BSP (F) | 11,5 kg |
| 6129 | 400Vac - 50 Hz | 0,55 kw | 4 A | 2800 | 15 bar | 10,5 | 3/8" BSP (F) | 11,5 kg |



Art. no. **6124**

Electric, self-priming gear pump for the supply of oil, approved for fiscal transactions according to the European **Directive 2004/22/EC**, better known as Measurement Instrument Directive (MID) MI-005, meeting also the requirements of **OIML R117-1 (DIN 19217)**.

Consisting of:

- electric, self-priming 230 VAC gear pump, art. no. 6122;
- automatic air separator kit, art. no. 2054, suitable to separate the air eventually present in the suction line from the oil, with automatic pump stop device, approved according to OIML R117-1; includes also manometer for the control of the outlet pressure and non-return valve;
- control box with push button and electric connection cable;
- double electronic pressure switch that starts the pump once the control gun is activated and stops it again due to the pressure increase in the circuit once the gun is closed;
- bypass valve preset on 15 bar pressure;
- 1,5 m - electric cable with SCHUKO plug;

Protection category IP 55.



| Art. no. | Voltage | Power | Current drain | Rpm | Outlet pressure | Delivery l/min | Connections | Weight |
|-------------|----------------|---------|---------------|------|-----------------|----------------|--------------|--------|
| 6124 | 230Vac - 50 Hz | 0,55 kw | 4 A | 2800 | 15 bar | 10 | 1/2" BSP (M) | 13 Kg |



33 l/min
53 l/min

Art. no. **6133** - 110 Vac
Art. no. **6135** - 230 Vac
Art. no. **6138** - 400 Vac
Art. no. **6145** - 230 Vac
Art. no. **6149** - 400 Vac

Electric, self-priming gear pump, for the supply of oil under demanding conditions at medium pressure and with long pumping distances; guarantees a constant flow and delivery, even after long pumping distances or with simultaneous supplies.

Available with motors in 230 Vac, 400 Vac and 110 Vac.

Includes a bypass valve preset on 28 bar pressure.

Electric cable with plug not included.



| Art. no. | Voltage | Power | Current drain | Rpm | Outlet pressure | Delivery l/min | Connections IN - OUT | Weight |
|-------------|-----------------|--------|---------------|------|-----------------|----------------|-------------------------|--------|
| 6133 | 110 Vac - 60 Hz | 1,5 Kw | 6 A | 1400 | 28 bar | 33 | 1" BSP (M) - 1" BSP (M) | 28 kg |
| 6135 | 230 Vac - 50 Hz | 1,5 kw | 6 A | 1400 | 28 bar | 33 | 1" BSP (M) - 1" BSP (M) | 28 kg |
| 6138 | 400 Vac - 50 Hz | 1,5 kw | 5 A | 1400 | 28 bar | 33 | 1" BSP (M) - 1" BSP (M) | 30 kg |
| 6145 | 230 Vac - 50 Hz | 2,2 kw | 6 A | 1400 | 28 bar | 53 | 1" BSP (M) - 1" BSP (M) | 30 kg |
| 6149 | 400 Vac - 50 Hz | 2,2 kw | 5 A | 1400 | 28 bar | 53 | 1" BSP (M) - 1" BSP (M) | 32 kg |



33 l/min

Kit 6136

Kit 6136

Electric gear pump, art. no. 6135, equipped with kit art.no. 7373 consisting of pressure accumulator, inline oil filter, non-return valve, manometer, connection adapters and an electronic pressure switch that starts the pump once the control gun is activated and stops it again due to the pressure increase in the circuit once the gun is closed. The pressure accumulator guarantees a constant oil flow by avoiding continuous starts and stops of the motor that could cause damages in case of dispensing small quantities.

Includes a bypass valve preset on 28 bar pressure.

Electric cable with plug not included.



| Art. no. | Voltage | Power | Current drain | Rpm | Outlet pressure | Delivery l/min | Connections IN - OUT | Weight |
|-------------|-----------------|--------|---------------|------|-----------------|----------------|---------------------------|--------|
| 6136 | 230 Vac - 50 Hz | 1,5 kw | 6 A | 1400 | 28 bar | 33 | 1" BSP (M) - 3/4" (M) BSP | 33 kg |



Kit 3049
Kit 3050

Kit 3049

Encased oil supply kit, composed of: electric gear pump, art. no. 6136, metal and lockable cover, art. no. 7376, and safety switch of protection category IP 55, art. no. 7370, with 3 m - cable and plug.

Kit 3050

Encased oil supply kit, such as art. no. 3049, but including electric gear pump, art. no. 6145, with delivery 53 l/min. Ideal for pipework installations.



| Art. no. | Voltage | Power | Current drain | Rpm | Outlet pressure | Delivery l/min | Connections IN - OUT | Weight |
|-------------|-----------------|--------|---------------|------|-----------------|----------------|-------------------------|--------|
| 3049 | 230 Vac - 50 Hz | 1,5 kw | 6 A | 1400 | 28 bar | 33 | 1" BSP (M) - 1" BSP (M) | 37 kg |
| 3050 | 230 Vac - 50 Hz | 2,2 kw | 6 A | 1400 | 28 bar | 53 | 1" BSP (M) - 1" BSP (M) | 39 kg |

Art. no. 2954

Electronic oval gears flow meter with pulse transmitter, suitable for oil and antifreeze. Appropriate to the use in combination with electronic oil monitoring systems by the use of an external receiver.

| Art. no. | Connections | Max flow (l/min) | Operating temperature range | Max working pressure (bar) | Accuracy | Number of pulses | Weight |
|-------------|--------------|------------------|-----------------------------|----------------------------|------------|------------------|--------|
| 2954 | 1/2" BSP (F) | 20 | +10°C / +50°C | 70 | + / - 0,5% | 78/l | 0,6 Kg |

Art. no. 2954

Art. no. 2955

Electronic oval gears flow meter with pulse transmitter, suitable for oil and antifreeze, including a solenoid valve, an inline filter and a wall bracket. Appropriate to the use in combination with electronic oil monitoring systems by the use of an external receiver.

| Art. no. | Connections | Max flow (l/min) | Operating temperature range | Max working pressure (bar) | Accuracy | Number of pulses | Weight |
|-------------|--------------|------------------|-----------------------------|----------------------------|------------|------------------|--------|
| 2955 | 1/2" BSP (F) | 20 | +10°C / +50°C | 70 | + / - 0,5% | 78/l | 1,2 Kg |

Art. no. 2955

Art. no. 2959

Electronic oval gears flow meter with pulse transmitter, body in stainless steel AISI 303. Appropriate to the use in combination with electronic oil monitoring systems by the use of an external receiver.

| Art. no. | Connections | Max flow (l/min) | Operating temperature range | Max working pressure (bar) | Accuracy | Number of pulses | Weight |
|-------------|--------------|------------------|-----------------------------|----------------------------|------------|------------------|--------|
| 2959 | 1/2" BSP (F) | 20 | +10°C / +50°C | 70 | + / - 0,5% | 78/l | 1,3 Kg |

Art. no. 2959

Art. no. 2957

Electronic oval gears flow meter with pulse transmitter, body in stainless steel AISI 303, including a stainless steel solenoid valve and a wall bracket; suitable for the use with water-based fluids and AdBlue® (DEF). Appropriate to the use in combination with electronic oil monitoring systems by the use of an external receiver.

| Art. no. | Connections | Max flow (l/min) | Operating temperature range | Max working pressure (bar) | Accuracy | Number of pulses | Weight |
|-------------|--------------|------------------|-----------------------------|----------------------------|------------|------------------|--------|
| 2957 | 1/2" BSP (F) | 20 | +10°C / +50°C | 70 | + / - 0,5% | 78/l | 1,2 Kg |

Art. no. 2957

Art. no. 2853

Electronic oval gears high delivery flow meter with pulse transmitter, suitable for oil, diesel and antifreeze. Appropriate to the use in combination with electronic oil monitoring systems by the use of an external receiver.

| Art. no. | Connections | Max flow (l/min) | Operating temperature range | Max working pressure (bar) | Accuracy | Number of pulses | Weight |
|-------------|--------------|------------------|-----------------------------|----------------------------|------------|------------------|--------|
| 2853 | 1/2" BSP (F) | 70 | +10°C / +50°C | 50 | + / - 0,5% | 39/l | 1,6 Kg |

Art. no. 2853



RUBBER HOSES AND FITTINGS FOR OIL

High pressure rubber hoses SAE 100 R1 AT, with female, straight BSP – connections, suitable for the supply of oil, diesel, petrol and water. Ideal for the connection on pumps or hose reels.

Internal structure and coating: synthetic rubber, resistant to oil, diesel, petrol and hydraulic fluids.
Reinforcement: 1 steel wire braided, highly resistant layer.

HOW TO ORDER

| Length | Ø 1/2" Art. no. | Ø 3/4" Art. no. | Ø 1" Art. no. | Ø 1 1/4" Art. no. |
|--------|--------------------|--------------------|------------------|----------------------|
| 0,5 m | 287005 | 289005 | 2895005 | 281401 |
| 1 m | 28701 | 28901 | 289501 | 2814005 |
| 1,5 m | 287015 | 289015 | 2895015 | 2814015 |
| 2 m | 28702 | 28902 | 289502 | 281402 |
| 3 m | 28703 | 28903 | 289503 | 281403 |
| 5 m | 28705 | 28905 | 289505 | 281405 |
| 6 m | 28706 | 28906 | 289506 | 281406 |
| 7 m | 28707 | 28907 | 289507 | 281410 |
| 10 m | 28710 | 28910 | 289510 | 281415 |
| 15 m | 28715 | 28915 | 289515 | 281420 |
| 20 m | 28720 | 28920 | 289520 | 281425 |
| 25 m | 28725 | 28925 | 289525 | 281430 |
| 30 m | 28730 | 28930 | 289530 | 281435 |
| 40 m | 28740 | 28940 | 289540 | 281440 |

Other lengths available on demand!

TECHNICAL DATA

| Nominal diameter | 1/2" | 3/4" | 1" | 1 1/4" |
|--------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Internal diameter (mm) | 12,7 mm | 19 mm | 25 mm | 31,8 mm |
| Wire braid diameter (mm) | 18,3 mm | 25,4 mm | 33,3 mm | 40,5 mm |
| External diameter (mm) | 20,6 mm | 27,7 mm | 35,6 mm | 43,5 mm |
| Working pressure (bar) | 160 bar | 105 bar | 88 bar | 63 bar |
| Test pressure (bar) | 385 bar | 255 bar | 190 bar | 120 bar |
| Burst pressure (bar) | 640 bar | 420 bar | 350 bar | 250 bar |
| Min. bending radius (mm) | 180 mm | 240 mm | 300 mm | 420 mm |
| Working temperature | min -40°C max +100°C | min -40°C max +100°C | min -40°C max +100°C | min -40°C max +100°C |
| Weight (kg/m) | 0,430 Kg/m | 0,610 Kg/m | 0,940 Kg/m | 1,19 kg/m |

Type C



Type A



Type B



Type D



Type A Double male connection adapter, BSP, galvanized steel

Art. no. **9910** 1/2" x 1/2"
Art. no. **9911** 1/2" x 3/8"
Art. no. **9912** 1/2" x 1/4"
Art. no. **9915** 1/2" x 3/4"
Art. no. **9924** 1" x 3/4"
Art. no. **9925** 3/4" x 3/4"
Art. no. **9927** 1" x 1"
Art. no. **9928** 1" x 1/2"
Art. no. **9948** 1" 1/4" x 1"

Type B Male – female swivel connection adapter, BSP, galvanized steel

Art. no. **9901** 1/2" x 1/2"

Type C Male – female connection adapter, BSP, galvanized steel

Art. no. **9905** 1/2" x 1/4"
Art. no. **9906** 1/2" x 3/8"
Art. no. **9902** 1/2" x 1/2"
Art. no. **9903** 1/2" x 3/4"

Type D 90° curved male – female connection adapter, BSP, galvanized steel

Art. no. **9939** 1/2" x 1/2"



High pressure rubber hoses in accordance with SAE 100 R1AT, with swaged female BSP connection threads (swivel nuts), suitable for the supply of **oils** and **diesel** at high pressure.

Internal structure in oil-resistant, synthetic rubber, coating in rubber highly resistant to abrasion, ozone and atmospheric influences. Reinforcement: 1 steel wire braided, highly resistant layer.

| Art. no. | Nominal ø | Internal ø | External ø | Working pressure | Burst pressure | Min bending radius | Working temperature (min/max) | Weight |
|---------------|-----------|------------|------------|------------------|----------------|--------------------|-------------------------------|-----------|
| 287XX | 1/2" | 12,7 mm | 20,6 mm | 160 bar | 640 bar | 180 mm | -40/+100°C | 0,43 kg/m |
| 289XX | 3/4" | 19,0 mm | 27,7 mm | 105 bar | 420 bar | 240 mm | -40/+100°C | 0,61 kg/m |
| 2895XX | 1" | 25,4 mm | 35,6 mm | 88 bar | 350 bar | 300 mm | -40/+100°C | 0,94 kg/m |

XX= stands for the required hose length in meters (f. ex. 287**15** = 15 m).



High pressure rubber hoses in accordance with SAE 100 R2AT, with swaged female BSP connection threads (swivel nuts), suitable for the supply of **grease** and **water** at high pressure.

Internal structure in oil-resistant, synthetic rubber, coating in rubber highly resistant to abrasion, ozone and atmospheric influences. Reinforcement: 2 steel wire braided, highly resistant layers.

| Art. no. | Nominal ø | Internal ø | External ø | Working pressure | Burst pressure | Min bending radius | Working temperature (min/max) | Weight |
|---------------|-----------|------------|------------|------------------|----------------|--------------------|-------------------------------|-----------|
| 45XX | 1/4" | 6,4 mm | 15 mm | 400 bar | 1600 bar | 100 mm | -40/+100°C | 0,36 kg/m |
| 47XX | 3/8" | 9,5 mm | 19 mm | 330 bar | 1320 bar | 130 mm | -40/+100°C | 0,53 kg/m |
| 48XX | 1/2" | 12,7 mm | 22,2 mm | 275 bar | 1100 bar | 180 mm | -40/+100°C | 0,63 kg/m |
| 488XX | 3/4" | 19 mm | 29,3 mm | 215 bar | 850 bar | 240 mm | -40/+100°C | 0,92 kg/m |
| 4885XX | 1" | 25,4 mm | 38,1 mm | 165 bar | 650 bar | 300 mm | -40/+100°C | 1,38 kg/m |

XX= stands for the required hose length in meters (f. ex. 287**15** = 15 m)



High pressure, **blue antistaining rubber hoses**, in accordance with SAE 100 R2AT, with swaged female BSP connection threads (swivel nuts), suitable for the supply of **water** at high pressure (f. ex. in combination with high pressure cleaners).

Internal structure in oil-resistant, synthetic rubber, coating in rubber highly resistant to abrasion, ozone and atmospheric influences. Reinforcement: 2 steel wire braided, highly resistant layers.

| Art. no. | Nominal ø | Internal ø | External ø | Working pressure | Burst pressure | Min bending radius | Working temperature (min/max) | Weight |
|---------------|-----------|------------|------------|------------------|----------------|--------------------|-------------------------------|-----------|
| 46XXAM | 5/16" | 7,9 mm | 15 mm | 400 bar | 1600 bar | 85 mm | -10/+160°C | 0,36 kg/m |
| 47XXAM | 3/8" | 9,5 mm | 18 mm | 400 bar | 1600 bar | 90 mm | -10/+160°C | 0,46 kg/m |

XX= stands for the required hose length in meters (f. ex. 287**15** = 15 m)



Low pressure rubber hoses in accordance with SAE 100 R6 – DIN EN 854, with swaged female BSP connection threads (swivel nuts), suitable for the supply of **diesel** and **water** at low pressure.

Internal structure in oil-resistant, synthetic rubber, coating in rubber highly resistant to abrasion, ozone and atmospheric influences. Reinforcement: 1 textile braided and 1 steel wire braided layer.

| Art. no. | Nominal ø | Internal ø | External ø | Working pressure | Burst pressure | Min bending radius | Working temperature (min/max) | Weight |
|----------------|-----------|------------|------------|------------------|----------------|--------------------|-------------------------------|-----------|
| 288XX | 3/4" | 19 mm | 26 mm | 17 bar | 97 bar | 140 mm | -40/+100°C | 0,32 kg/m |
| 2896XX | 1" | 25 mm | 32 mm | 17 bar | 97 bar | 152 mm | -40/+100°C | 0,43 kg/m |
| 2897XX | 1'1/4" | 32 mm | 43 mm | 10 bar | 40 bar | 185 mm | -40/+100°C | 1,02 kg/m |
| 28997XX | 1'1/2" | 38 mm | 50 mm | 10 bar | 40 bar | 225 mm | -40/+100°C | 1,60 kg/m |

XX= stands for the required hose length in meters (f. ex. 287**15** = 15 m)



Low pressure synthetic rubber hoses CASER with swaged female BSP connection threads (swivel nuts) in brass (on demand also in stainless steel), suitable for the use with **hot water** in food industry applications.

Internal structure white, food industry – qualified synthetic rubber, coating in blue rubber highly resistant to abrasion, heat, ozone and atmospheric influences. Reinforcement with highly resistant synthetic cord. In accordance with FDA food industry standards.

| Art. no. | Nominal ø | Internal ø | External ø | Working pressure | Burst pressure | Min bending radius | Working temperature (min/max) | Weight |
|--------------|-----------|------------|------------|------------------|----------------|--------------------|-------------------------------|-----------|
| 187XX | 1/2" | 12 mm | 22 mm | 15 bar | 45 bar | 100 mm | -35/+110°C | 0,35 kg/m |
| 189XX | 3/4" | 19 mm | 31 mm | 15 bar | 45 bar | 112 mm | -35/+110°C | 0,51 kg/m |

XX= stands for the required hose length in meters (f. ex. 287**15** = 15 m)



Low pressure hoses in hydrocarbon resistant black rubber with swaged female BSP connection threads (swivel nuts), suitable for the use with **fuels** and **petrol** in accordance with **norm EN 1761:1994**. Smooth internal structure in black rubber, resistant to hydrocarbons with an aromatic content of not more than 60 % and unleaded petrol with a max MTBE - content of 5 %. Cover in conductive black rubber, highly resistant to abrasion, ozone and atmospheric influences. Reinforcement with highly resistant synthetic cord. Resistant to inflammability in accordance with code of practice for flammable fluids TRbF 131, part 2, no. 5.5.

| Art. no. | Nominal ø | Internal ø | External ø | Working pressure | Burst pressure | Min bending radius | Working temperature (min/max) | Weight |
|---------------|-----------|------------|------------|------------------|----------------|--------------------|-------------------------------|-----------|
| 2894XX | 1" | 25 mm | 38 mm | 18 bar | 81 bar | 182 mm | -30/+70°C | 0,85 kg/m |

XX= stands for the required hose length in meters (f. ex. 287**15** = 15 m)



Low pressure synthetic GPH rubber hoses (General Purpose Hoses) with swaged female BSP connection threads (swivel nuts) in stainless steel, suitable for the use with **AdBlue®/DEF/AUS32**, **water at low and high temperatures**, **chemical fluids**, **acids**, **glycol** and **compressed air** at low pressure. Internal structure in conductive black rubber, cover in black rubber, highly resistant to abrasion, heat, ozone and atmospheric influences. Reinforcement with highly resistant synthetic cord. In accordance with norm BS 2050:1978.

| Art. no. | Nominal ø | Internal ø | External ø | Working pressure | Burst pressure | Min bending radius | Working temperature (min/max) | Weight |
|---------------|-----------|------------|------------|------------------|----------------|--------------------|-------------------------------|-----------|
| 2898XX | 1/2" | 13 mm | 21 mm | 20 bar | 60 bar | 100 mm | -40/+120°C | 0,26 kg/m |
| 2899XX | 3/4" | 19 mm | 30 mm | 20 bar | 60 bar | 112 mm | -40/+120°C | 0,57 kg/m |

XX= stands for the required hose length in meters (f. ex. 287**15** = 15 m)



Low pressure, blue PVC – hoses with swaged female BSP connection threads (swivel nuts) in brass, suitable for the use with **compressed air** and **water** at low pressure. Reinforcement with highly break resistant polyester cord.

| Art. no. | Nominal ø | Internal ø | External ø | Working pressure | Burst pressure | Min bending radius | Working temperature (min/max) | Weight |
|--------------|-----------|------------|------------|------------------|----------------|--------------------|-------------------------------|-----------|
| 38XX | 3/8" | 10 mm | 16,5 mm | 40 bar | 120 bar | 80 mm | -15 / +50°C | 0,19 kg/m |
| 277XX | 1/2" | 13 mm | 20 mm | 40 bar | 120 bar | 100 mm | -15 / +50°C | 0,25 kg/m |
| 399XX | 3/4" | 19 mm | 28 mm | 40 bar | 120 bar | 112 mm | -15 / +50°C | 0,47 kg/m |

XX= stands for the required hose length in meters (f. ex. 287**15** = 15 m)

| Art. no. | Page | Art. no. | Page | Art. no. | Page | Art. no. | Page | Art. no. | Page | Art. no. | Page |
|----------|------|-------------|------|----------|------|----------|------|----------|------|----------|------|
| 1045 | 184 | 2038 | 41 | 2119 | 59 | 2689 | 180 | 2958 | 117 | 3123 | 250 |
| 1049 | 184 | 2040 | 40 | 2121 | 59 | 2703 | 66 | 2959 | 67 | 3124 | 250 |
| 1050 | 184 | 2043 | 40 | 2125 | 142 | 2710 | 66 | 2971 | 74 | 3125 | 250 |
| 1052 | 188 | 2043/L | 40 | 2127 | 142 | 2712 | 66 | 2971MID | 74 | 3126 | 250 |
| 1053 | 188 | 2044 | 40 | 2128 | 142 | 2735 | 182 | 2974MID | 85 | 3127 | 250 |
| 1054 | 188 | 2045 | 123 | 2129 | 142 | 2736 | 179 | 2980C | 73 | 3129 | 251 |
| 1055 | 188 | 2046 | 123 | 2130 | 142 | 277XX | 243 | 2982 | 73 | 3130 | 251 |
| 1056 | 188 | 2047 | 40 | 2132 | 59 | 2814XX | 36 | 2984 | 82 | 3132 | 251 |
| 1058 | 51 | 2047/L | 40 | 2133 | 59 | 2822 | 180 | 2984MID | 83 | 3135 | 252 |
| 1064 | 188 | 2049 | 40 | 2140 | 59 | 2823 | 159 | 2985 | 85 | 3161 | 126 |
| 1065 | 188 | 2050 | 91 | 2142 | 59 | 2824 | 54 | 2985MID | 85 | 3164 | 130 |
| 1066 | 188 | 2051 | 91 | 2159 | 58 | 2826 | 62 | 2986 | 142 | 3167 | 130 |
| 1071 | 184 | 2052 | 91 | 2160 | 58 | 2829 | 62 | 2987MID | 73 | 3172 | 135 |
| 1072 | 184 | 2053 | 91 | 2161 | 58 | 2830 | 62 | 2991 | 76 | 3173 | 125 |
| 1079 | 185 | 2055 | 47 | 2162 | 58 | 2831 | 62 | 2991X | 77 | 3177 | 124 |
| 1081 | 185 | 2056 | 47 | 2166 | 180 | 2836 | 63 | 2991XB | 77 | 3178 | 124 |
| 1082 | 185 | 2057 | 46 | 2180 | 58 | 2851 | 64 | 2991MID | 77 | 3179 | 126 |
| 1083 | 185 | 2058 | 46 | 2181 | 58 | 2852 | 159 | 2992 | 82 | 3180 | 133 |
| 1085 | 185 | 2061 | 42 | 2182 | 58 | 2853 | 67 | 2992MID | 83 | 3182 | 132 |
| 1104 | 186 | 2061130 | 42 | 2183 | 182 | 2854 | 64 | 2993 | 76 | 3183 | 125 |
| 1106 | 186 | 2063 | 44 | 2185 | 58 | 2855 | 64 | 2994 | 84 | 3185 | 122 |
| 1107 | 59 | 2063130 | 44 | 2203 | 50 | 2859 | 159 | 2995 | 142 | 3185/20 | 122 |
| 1108 | 186 | 2064 | 44 | 2204 | 50 | 2860 | 159 | 2996 | 142 | 3185/110 | 122 |
| 1109 | 186 | 2064130 | 44 | 2205 | 50 | 2861 | 160 | 2997 | 142 | 3186 | 122 |
| 1110 | 186 | 2073 | 41 | 2210 | 137 | 2863 | 159 | 2998 | 142 | 3186/110 | 122 |
| 1111 | 186 | 2074 | 41 | 2212 | 50 | 2864 | 159 | .011 | 142 | 3190 | 132 |
| 1112 | 186 | 2075/L | 42 | 2214 | 49 | 2865 | 159 | 3000 | 81 | 3191 | 127 |
| 1113 | 186 | 2075/L TWDE | 43 | 2216 | 49 | 2866 | 159 | 3005 | 81 | 3192 | 133 |
| 1114 | 186 | 2076 | 42 | 2217 | 50 | 2867 | 171 | 3017 | 136 | 3193 | 127 |
| 1312 | 183 | 2076130 | 42 | 2218 | 49 | 2869 | 159 | 3018 | 136 | 3195 | 131 |
| 1313 | 183 | 2088 | 46 | 2250 | 91 | 287XX | 242 | 3020 | 135 | 3198 | 131 |
| 187XX | 243 | 2091 | 46 | 2253 | 181 | 288XX | 242 | 3024 | 128 | 3199 | 137 |
| 189XX | 243 | 2092 | 48 | 2256 | 181 | 289XX | 242 | 3025 | 128 | 3244 | 123 |
| 1955 | 116 | 2093 | 48 | 2257 | 110 | 2894XX | 243 | 3027 | 129 | 3254 | 122 |
| 2012 | 45 | 2094 | 48 | 2258 | 110 | 2895XX | 242 | 3040 | 253 | 3254/110 | 122 |
| 2013 | 45 | 2096 | 47 | 2259 | 110 | 2896XX | 242 | 3041 | 253 | 3292 | 123 |
| 2014 | 45 | 2097 | 47 | 2260 | 110 | 2897 | 181 | 3049 | 53 | 3293 | 123 |
| 2015 | 45 | 2098 | 47 | 2264 | 123 | 2897XX | 242 | 3050 | 53 | 3299 | 124 |
| 2016 | 45 | 2101 | 195 | 2265 | 160 | 2898XX | 243 | 3060 | 128 | 3316 | 190 |
| 2020 | 41 | 2104 | 59 | 2267 | 160 | 2899XX | 243 | 3065 | 129 | 3318 | 191 |
| 2020TWDE | 43 | 2106 | 59 | 2268 | 160 | 28997XX | 242 | 3079 | 136 | 3318/316 | 191 |
| 2020130 | 41 | 2107/09 | 238 | 2270 | 98 | 2910 | 78 | 3080 | 128 | 3320 | 193 |
| 2023 | 44 | 2107/10 | 158 | 2271 | 98 | 2912 | 76 | 3085 | 134 | 3323 | 192 |
| 2024 | 44 | 2107/11 | 238 | 2301 | 72 | 2914 | 78 | 3090 | 129 | 3324 | 191 |
| 2025 | 42 | 2107/33 | 158 | 2301X | 72 | 2914X | 79 | 3095 | 134 | 3324/316 | 191 |
| 2025TWDE | 43 | 2107/34 | 158 | 2302 | 72 | 2914XB | 79 | 3099 | 137 | 3325 | 190 |
| 2025130 | 42 | 2107/35 | 59 | 2303 | 72 | 2914MID | 79 | 3100 | 248 | 3326 | 194 |
| 2030 | 41 | 2107/36 | 59 | 2363 | 72 | 2918 | 80 | 3101 | 248 | 3327 | 57 |
| 2030TWDE | 43 | 2108 | 59 | 2508 | 66 | 2918MID | 80 | 3106 | 248 | 3329 | 194 |
| 2032 | 41 | 2109 | 195 | 2545 | 65 | 2934 | 84 | 3111 | 249 | 3340 | 191 |
| 2032130 | 41 | 2110 | 59 | 2608 | 66 | 2937 | 63 | 3112 | 249 | 3340/316 | 191 |
| 2033 | 41 | 2114 | 59 | 2626 | 61 | 2942 | 63 | 3115 | 170 | 3345 | 192 |
| 2033130 | 41 | 2115 | 59 | 2629 | 61 | 2954 | 67 | 3117 | 250 | 3350 | 190 |
| 2035 | 42 | 2116 | 59 | 2630 | 61 | 2955 | 67 | 3118 | 249 | 3352 | 192 |
| 2035TWDE | 43 | 2117 | 59 | 2633 | 61 | 2957 | 67 | 3122 | 250 | 3354 | 192 |

| Art. no. | Page | Art. no. | Page | Art. no. | Page | Art. no. | Page | Art. no. | Page | Art. no. | Page |
|----------|------|-----------|------|----------|------|----------|------|-------------|------|----------|------|
| 3358 | 57 | 3493 | 145 | 4231 | 36 | 4312 | 34 | 4920C | 18 | 5423 | 56 |
| 3359 | 57 | 3495 | 144 | 4232 | 36 | 4312S | 34 | 4920C/E | 18 | 5434 | 56 |
| 3374 | 193 | 3521 | 201 | 4233 | 31 | 4314 | 34 | 4921 | 17 | 5450 | 55 |
| 3385 | 193 | 3524 | 201 | 4234 | 31 | 4315 | 34 | 4922 | 17 | 5463 | 75 |
| 3396 | 57 | 3526 | 201 | 4235 | 31 | 4317 | 34 | 4923 | 27 | 5463MID | 75 |
| 3406 | 144 | 38XX | 243 | 4236 | 32 | 4317/TP | 34 | 4950 | 19 | 5480 | 187 |
| 3408 | 71 | 399XX | 243 | 4240 | 28 | 4319 | 34 | 4960 | 19 | 5491 | 175 |
| 3416 | 146 | 4018 | 10 | 4240X | 28 | 4319/TP | 34 | 4960C | 19 | 5493 | 175 |
| 3419 | 146 | 4019 | 11 | 4241 | 28 | 4320 | 35 | 4961 | 21 | 5495 | 187 |
| 3422 | 141 | 4020 | 10 | 4241A | 28 | 4320/70 | 35 | 4963 | 27 | 5496 | 175 |
| 3423 | 141 | 4021 | 11 | 4241/P | 28 | 4322 | 23 | 4980 | 19 | 5604 | 70 |
| 3424 | 141 | 4019TWDE | 13 | 4241S | 28 | 4326 | 34 | 4980C | 19 | 5650 | 70 |
| 3425 | 71 | 4021TWDE | 13 | 4241/TC | 28 | 4328 | 34 | 4981 | 21 | 5658 | 70 |
| 3426 | 71 | 4022 | 12 | 4241/TL | 28 | 4338 | 20 | 4983 | 27 | 5659 | 70 |
| 3427 | 71 | 4025 | 16 | 4242 | 28 | 4340 | 34 | 4990 | 20 | 5670 | 70 |
| 3428 | 71 | 4043 | 12 | 4242A | 28 | 4341 | 34 | 4990C | 20 | 5671 | 70 |
| 3429 | 71 | 4046 | 15 | 4242S | 28 | 4342/50 | 35 | 4995 | 21 | 5675 | 70 |
| 3430 | 71 | 4047 | 15 | 4243 | 28 | 4342/55 | 49 | 4997/20 | 23 | 5676 | 70 |
| 3433 | 71 | 4048 | 15 | 4243A | 28 | 4342/70 | 35 | 4997/60 | 23 | 5677 | 70 |
| 3435 | 71 | 4049 | 15 | 4243S | 28 | 4343/50 | 35 | 4999 | 22 | 5678 | 70 |
| 3436 | 71 | 4050 | 15 | 4244 | 28 | 4343/55 | 49 | 4999/200INP | 22 | 5679 | 70 |
| 3447 | 71 | 4060 | 10 | 4245 | 28 | 4343/70 | 35 | 5000 | 16 | 5680 | 70 |
| 3448 | 71 | 4061 | 11 | 4246 | 28 | 4347/71 | 35 | 5011 | 16 | 5685 | 71 |
| 3449 | 71 | 4061TWDE | 13 | 4247 | 28 | 4350 | 254 | 5031 | 16 | 5686 | 71 |
| 3451 | 145 | 4062 | 12 | 4247A | 28 | 4351 | 254 | 5032 | 16 | 5687 | 71 |
| 3452 | 145 | 4080 | 10 | 4248 | 28 | 4352 | 254 | 5040 | 16 | 5688 | 70 |
| 3453 | 145 | 4081 | 11 | 4249 | 28 | 4357 | 144 | 5060 | 16 | 5689 | 70 |
| 3454 | 145 | 4081TWDE | 13 | 4250/60 | 28 | 4360 | 254 | 5080 | 16 | 5903 | 198 |
| 3455 | 145 | 4082 | 12 | 4250/120 | 28 | 4379 | 96 | 5081 | 16 | 5904 | 199 |
| 3456 | 145 | 4083 | 12 | 4250/240 | 28 | 4380 | 254 | 5100 | 25 | 5905 | 199 |
| 3457 | 145 | 4200 | 30 | 4251 | 31 | 4389 | 254 | 5105 | 25 | 5906 | 199 |
| 3458 | 145 | 4201 | 30 | 4252 | 31 | 4397 | 254 | 5110 | 26 | 5908 | 198 |
| 3459 | 145 | 4204 | 30 | 4253 | 31 | 4398 | 254 | 5111 | 26 | 5945 | 200 |
| 3460 | 145 | 4205 | 30 | 4254 | 31 | 4400 | 29 | 5115 | 25 | 5946 | 200 |
| 3461 | 145 | 4206 | 30 | 4255 | 31 | 4400/4 | 29 | 5125 | 24 | 5953 | 198 |
| 3462 | 145 | 4207 | 30 | 4256 | 28 | 4405 | 29 | 5126 | 27 | 6122 | 52 |
| 3463 | 145 | 4208 | 30 | 4257 | 28 | 4406 | 29 | 5127 | 27 | 6124 | 52 |
| 3465 | 145 | 4209 | 30 | 4258 | 28 | 4425 | 24 | 5128 | 27 | 6125 | 52 |
| 3466 | 145 | 4215 | 31 | 4285 | 33 | 4426 | 24 | 5129 | 27 | 6128 | 52 |
| 3467 | 145 | 4216 | 31 | 4286 | 32 | 4450 | 29 | 5130 | 27 | 6129 | 52 |
| 3468 | 145 | 4216+4233 | 31 | 4287 | 33 | 4450/4 | 29 | 5131 | 27 | 6132 | 176 |
| 3469 | 145 | 4217 | 31 | 4289 | 32 | 4452 | 29 | 5190 | 24 | 6133 | 53 |
| 3470 | 145 | 4217/1000 | 31 | 4301 | 34 | 4452/4 | 29 | 5200 | 56 | 6135 | 53 |
| 3471 | 145 | 4217+4220 | 31 | 4302 | 34 | 45XX | 242 | 5216 | 56 | 6136 | 53 |
| 3472 | 145 | 4218 | 31 | 4302S | 34 | 46XX AM | 242 | 5300 | 55 | 6138 | 53 |
| 3473 | 145 | 4219 | 31 | 4305 | 34 | 4699 | 200 | 5301 | 55 | 6141 | 52 |
| 3474 | 145 | 4220 | 31 | 4305L | 34 | 47XX | 242 | 5303 | 55 | 6145 | 53 |
| 3475 | 146 | 4221 | 30 | 4305S | 34 | 47XX AM | 242 | 5400 | 55 | 6149 | 53 |
| 3476 | 146 | 4223 | 36 | 4305/TP | 34 | 4701 | 18 | 5403 | 54 | 6153 | 176 |
| 3481 | 144 | 4224 | 31 | 4308 | 34 | 48XX | 242 | 5405 | 54 | 6154 | 176 |
| 3482 | 124 | 4225 | 31 | 4308/TP | 34 | 488XX | 242 | 5409 | 55 | 6155 | 176 |
| 3485 | 144 | 4226 | 31 | 4309 | 35 | 4885XX | 242 | 5410 | 54 | 6160 | 176 |
| 3486 | 144 | 4227 | 31 | 4309/70 | 35 | 4910 | 20 | 5416 | 187 | 6218 | 152 |
| 3490 | 145 | 4228 | 30 | 4310 | 34 | 4911 | 20 | 5417 | 187 | 6219 | 152 |
| 3491 | 145 | 4229 | 36 | 4311 | 34 | 4920 | 18 | 5420 | 54 | 6220 | 152 |

| Art. no. | Page | Art. no. | Page | Art. no. | Page | Art. no. | Page | Art. no. | Page | Art. no. | Page |
|----------|------|----------|------|----------|------|-----------|------|----------|------|----------|------|
| 6227 | 156 | 6654 | 111 | 6802 | 195 | 7330 | 202 | 8250 | 86 | 8569 | 98 |
| 6227C | 156 | 6655 | 111 | 6805 | 195 | 7331 | 202 | 8300 | 139 | 8571 | 99 |
| 6230 | 151 | 6656 | 111 | 6812 | 196 | 7340 | 120 | 8304 | 138 | 8572 | 99 |
| 6245 | 151 | 6660 | 111 | 6813 | 196 | 7344 | 245 | 8307 | 119 | 8573 | 99 |
| 6246 | 151 | 6661 | 111 | 6814 | 196 | 7360 | 120 | 8308 | 138 | 8574 | 99 |
| 6247 | 155 | 6662 | 111 | 6815 | 196 | 7361+7355 | 120 | 8309 | 119 | 8580 | 100 |
| 6248 | 151 | 6670 | 110 | 6820 | 196 | 7383 | 117 | 8318 | 140 | 8581 | 100 |
| 6249 | 151 | 6671 | 110 | 6821 | 196 | 7394 | 102 | 8319 | 140 | 8582 | 100 |
| 6252 | 150 | 6672 | 110 | 6822 | 196 | 7395 | 102 | 8320 | 140 | 8583 | 100 |
| 6253 | 150 | 6690 | 111 | 6823 | 196 | 7396 | 102 | 8321 | 140 | 8591 | 101 |
| 6254 | 150 | 6691 | 111 | 6830 | 196 | 7397 | 102 | 8322 | 140 | 8592 | 101 |
| 6255 | 150 | 6692 | 111 | 6840 | 196 | 7398 | 102 | 8323 | 140 | 8593 | 101 |
| 6256 | 150 | 6693 | 111 | 6871 | 194 | 7406 | 195 | 8400 | 244 | 8594 | 101 |
| 6257 | 150 | 6694 | 111 | 6872 | 194 | 7550 | 194 | 8403 | 244 | 8591/S | 101 |
| 6302 | 51 | 6695 | 111 | 6873 | 194 | 7553 | 194 | 8407 | 245 | 8592/S | 101 |
| 6303 | 51 | 6696 | 111 | 6874 | 194 | 7704 | 194 | 8408 | 245 | 8593/S | 101 |
| 6304 | 51 | 6697 | 111 | 6875 | 194 | 7705 | 200 | 8412 | 232 | 8594/S | 101 |
| 6305 | 51 | 6698 | 111 | 6876 | 194 | 7740 | 197 | 8413 | 245 | 8595 | 101 |
| 6308 | 51 | 6699 | 111 | 6877 | 194 | 7741 | 197 | 8415 | 244 | 8596 | 101 |
| 6309 | 51 | 6700 | 158 | 6878 | 195 | 7742 | 197 | 8417 | 244 | 8597 | 101 |
| 6312 | 51 | 6701 | 158 | 6882 | 195 | 7743 | 197 | 8457 | 245 | 8598 | 101 |
| 6314 | 51 | 6702 | 158 | 6883 | 195 | 7810 | 142 | 8524 | 94 | 8599 | 101 |
| 6324 | 51 | 6702/B | 171 | 6884 | 195 | 7811 | 142 | 8524/SE | 94 | 8595/S | 101 |
| 6326 | 51 | 6709 | 181 | 6885 | 195 | 7816 | 102 | 8525 | 95 | 8596/S | 101 |
| 6435 | 152 | 6721 | 158 | 6930 | 168 | 7818 | 141 | 8526 | 241 | 8597/S | 101 |
| 6437 | 141 | 6725 | 158 | 6931 | 168 | 7819 | 141 | 8527 | 94 | 8598/S | 101 |
| 6446 | 189 | 6726 | 158 | 6933 | 168 | 8204 | 87 | 8529 | 97 | 8599/S | 101 |
| 6528 | 116 | 6728 | 171 | 6934 | 168 | 8205 | 87 | 8530 | 97 | 8601 | 245 |
| 6529 | 120 | 6729 | 181 | 6935 | 168 | 8205MID | 87 | 8530/SP | 97 | 8621 | 92 |
| 6532 | 114 | 6738 | 153 | 6938 | 170 | 8206 | 87 | 8531 | 97 | 8634 | 92 |
| 6556 | 148 | 6739 | 153 | 7008 | 143 | 8206MID | 87 | 8532 | 94 | 8684 | 93 |
| 6557 | 148 | 6741 | 155 | 7009 | 143 | 8207 | 87 | 8532/SE | 94 | 8685 | 93 |
| 6559 | 51 | 6743 | 177 | 7010 | 143 | 8207MID | 87 | 8533 | 95 | 8745 | 120 |
| 6561 | 168 | 6744 | 177 | 7150 | 40 | 8208 | 86 | 8534 | 50 | 8752 | 119 |
| 6600 | 160 | 6745 | 177 | 7150/12 | 49 | 8209 | 86 | 8536 | 97 | 8795 | 114 |
| 6603 | 160 | 6747 | 178 | 7150/38 | 203 | 8210 | 86 | 8539 | 97 | 8803 | 114 |
| 6605C | 155 | 6748 | 178 | 7151 | 203 | 8214 | 96 | 8542 | 90 | 8806 | 114 |
| 6607 | 160 | 6750 | 155 | 7151/12 | 203 | 8215 | 86 | 8542MID | 90 | 8815 | 114 |
| 6608 | 160 | 6751 | 178 | 7151/38 | 203 | 8217 | 100 | 8543 | 90 | 8854 | 116 |
| 6611 | 160 | 6752 | 178 | 7180 | 40 | 8218 | 143 | 8543MID | 90 | 8857 | 117 |
| 6613 | 160 | 6752MID | 179 | 7180/12 | 49 | 8220 | 96 | 8545 | 72 | 8864 | 117 |
| 6614 | 160 | 6753 | 178 | 7180/38 | 203 | 8223/220 | 174 | 8547MID | 89 | 8867 | 117 |
| 6621 | 160 | 6755 | 153 | 7200 | 203 | 8223/430 | 174 | 8548 | 88 | 8870 | 116 |
| 6622 | 160 | 6766 | 154 | 7238 | 111 | 8224/95 | 173 | 8548/10 | 88 | 8871 | 116 |
| 6623 | 160 | 6768 | 154 | 7239 | 111 | 8224/120 | 174 | 8548MID | 89 | 8872 | 116 |
| 6639 | 110 | 6769 | 154 | 7240 | 111 | 8224/190 | 174 | 8549 | 88 | 8873 | 116 |
| 6640 | 110 | 6770 | 154 | 7241 | 111 | 8225/125 | 174 | 8549/10 | 88 | 8874 | 114 |
| 6641 | 110 | 6771 | 154 | 7242 | 111 | 8225/200 | 174 | 8549MID | 89 | 8876 | 114 |
| 6642 | 160 | 6772 | 149 | 7244 | 111 | 8225/430 | 174 | 8558 | 21 | 8877 | 115 |
| 6643 | 110 | 6773 | 154 | 7301 | 202 | 8225/600 | 174 | 8563 | 98 | 8878 | 114 |
| 6647 | 160 | 6776 | 149 | 7304 | 202 | 8226 | 252 | 8564 | 98 | 8879 | 115 |
| 6648 | 110 | 6782 | 154 | 7305 | 202 | 8229 | 252 | 8565 | 98 | 8884 | 115 |
| 6650 | 110 | 6783 | 154 | 7306 | 202 | 8231 | 173 | 8566 | 98 | 8920 | 118 |
| 6651 | 110 | 6800 | 196 | 7307 | 202 | 8235 | 173 | 8567 | 98 | 8950 | 118 |
| 6652 | 110 | 6801 | 195 | 7308 | 202 | 8237 | 173 | 8568 | 98 | 8951 | 118 |

| Art. no. | Page | Art. no. | Page | Art. no. | Page | Art. no. | Page | Art. no. | Page | Art. no. | Page |
|--------------|------|--------------|------|-----------------|------|-------------|------|----------|------|----------|------|
| 8952 | 245 | 9065 | 226 | 9254 | 228 | 9550 | 230 | 9818 | 109 | 9925 | 68 |
| 8953 | 118 | 9066 | 226 | 9254+28815 | 161 | 9551 | 230 | 9825 | 109 | 9927 | 68 |
| 9001 | 104 | 9070 | 219 | 9254+289610 | 161 | 9552 | 230 | 9828 | 109 | 9928 | 68 |
| 9005 | 106 | 9072 | 233 | 9255 | 228 | 9553 | 230 | 9838 | 109 | 9939 | 68 |
| 9013 | 213 | 9074 | 215 | 9255+28830 | 161 | 9558 | 231 | 9839 | 109 | 9940 | 241 |
| 9013+28708 | 69 | 9075 | 233 | 9255+289620 | 161 | 9559 | 231 | 9840 | 109 | 9941 | 241 |
| 9013+28710 | 69 | 9076 | 232 | 9256 | 228 | 9560 | 231 | 9841 | 109 | 9942 | 241 |
| 9013+28715 | 69 | 9078 | 236 | 9261 | 229 | 9561 | 229 | 9842 | 109 | 9943 | 241 |
| 9013+4510 | 37 | 9079 | 232 | 9262 | 229 | 9562 | 229 | 9843 | 109 | 9944 | 241 |
| 9013+4515 | 37 | 9079+289720 | 167 | 9263 | 229 | 9563 | 229 | 9844 | 109 | 9947 | 240 |
| 9013+4710 | 37 | 9079+2899715 | 167 | 9264 | 229 | 9564 | 229 | 9845 | 109 | 9948 | 68 |
| 9013+4715 | 37 | 9083 | 215 | 9270 | 235 | 9570 | 219 | 9846 | 109 | 9949 | 240 |
| 9013+4810 | 37 | 9083+4530 | 37 | 9315 | 223 | 9572 | 233 | 9847 | 109 | 9950 | 238 |
| 9013+4815 | 37 | 9083+4730 | 37 | 9400+3610 | 206 | 9574 | 215 | 9848 | 109 | 9951 | 238 |
| 9016 | 212 | 9083+4830 | 37 | 9400+3615 | 206 | 9575 | 233 | 9849 | 109 | 9952 | 238 |
| 9016+28708 | 69 | 9084 | 219 | 9405 | 207 | 9576 | 232 | 9850 | 109 | 9953 | 238 |
| 9016+28710 | 69 | 9085 | 221 | 9408 | 206 | 9578 | 236 | 9851 | 109 | 9955 | 239 |
| 9016+28715 | 69 | 9086 | 216 | 9409 | 207 | 9579 | 232 | 9852 | 109 | 9958 | 238 |
| 9016+4510 | 37 | 9088 | 217 | 9410 | 234 | 9584 | 218 | 9853 | 109 | 9961 | 239 |
| 9016+4515 | 37 | 9089 | 233 | 9413 | 234 | 9584+289615 | 163 | 9854 | 109 | 9962 | 239 |
| 9016+4710 | 37 | 9090 | 214 | 9418 | 235 | 9585 | 221 | 9855 | 109 | 9963 | 239 |
| 9016+4715 | 37 | 9090+28708 | 69 | 9510 | 234 | 9586 | 216 | 9856 | 109 | 9964 | 239 |
| 9016+4810 | 37 | 9090+28710 | 69 | 9511 | 234 | 9589 | 217 | 9857 | 109 | 9966 | 239 |
| 9016+4815 | 37 | 9090+4510 | 37 | 9517 | 212 | 9590 | 214 | 9858 | 109 | 9967 | 239 |
| 9021 | 212 | 9090+4710 | 37 | 9521 | 212 | 9591 | 214 | 9859 | 109 | 9969 | 238 |
| 9021+28720 | 69 | 9090+4810 | 37 | 9522 | 212 | 9592 | 214 | 9871 | 205 | 9973 | 238 |
| 9021+4520 | 37 | 9091 | 214 | 9523 | 223 | 9593 | 214 | 9872 | 109 | 9974 | 238 |
| 9021+4720 | 37 | 9091+28715 | 69 | 9524 | 223 | 9595 | 218 | 9873 | 204 | 9975 | 238 |
| 9021+4820 | 37 | 9091+4515 | 37 | 9525 | 225 | 9595+28810 | 163 | 9874 | 204 | 9979 | 238 |
| 9022 | 212 | 9091+4520 | 37 | 9525+28818 | 165 | 9095+289608 | 163 | 9875 | 204 | 9981 | 239 |
| 9023 | 213 | 9092 | 214 | 9525+289615 | 165 | 9596 | 218 | 9876 | 205 | 9982 | 239 |
| 9023+28720 | 69 | 9092+28720 | 69 | 9525/EX +289415 | 172 | 9596+28815 | 163 | 9877 | 205 | 9983 | 239 |
| 9023+4520 | 37 | 9092+4720 | 37 | 9527/EX +289408 | 172 | 9596+289612 | 163 | 9878 | 205 | 9986 | 239 |
| 9023+4720 | 37 | 9093 | 214 | 9529 | 224 | 9598 | 219 | 9879 | 204 | 9987 | 239 |
| 9023+4820 | 37 | 9093+28725 | 69 | 9529+28812 | 165 | 9599 | 220 | 9880 | 204 | 9988 | 240 |
| 9024 | 213 | 9093+4725 | 37 | 9529+289608 | 165 | 9754 | 213 | 9881 | 204 | 9989 | 240 |
| 9024+28808 | 162 | 9095 | 218 | 9530 | 215 | 9758 | 214 | 9882 | 204 | 9991 | 240 |
| 9025 | 213 | 9095+28810 | 162 | 9531 | 222 | 9760 | 212 | 9883 | 204 | 9992 | 240 |
| 9026 | 223 | 9095+289608 | 162 | 9531+289708 | 166 | 9761 | 234 | 9884 | 205 | 9993 | 240 |
| 9030 | 224 | 9096 | 218 | 9532 | 223 | 9764 | 218 | 9885 | 205 | 9994 | 240 |
| 9030+28812 | 164 | 9096+28815 | 162 | 9534 | 219 | 9765 | 212 | 9886 | 205 | 9996 | 240 |
| 9030+289608 | 164 | 9096+289612 | 162 | 9536 | 225 | 9767 | 212 | 9887 | 205 | 9997 | 240 |
| 9031 | 222 | 9097 | 218 | 9536+28830 | 165 | 9768 | 212 | 9888 | 205 | | |
| 9031+289708 | 166 | 9097+28818 | 164 | 9536+289625 | 165 | 9769 | 218 | 9889 | 205 | | |
| 9032 | 223 | 9097+289615 | 164 | 9536/EX+289425 | 172 | 9770 | 215 | 9890 | 204 | | |
| 9034 | 225 | 9098 | 219 | 9538 | 222 | 9773 | 218 | 9901 | 68 | | |
| 9036 | 225 | 9099 | 220 | 9538+289715 | 167 | 9775 | 214 | 9902 | 68 | | |
| 9036+28830 | 164 | 9210 | 237 | 9538+289720 | 167 | 9776 | 218 | 9903 | 68 | | |
| 9036+289525 | 164 | 9212 | 237 | 9539 | 222 | 9777 | 215 | 9905 | 36 | | |
| 9038 | 222 | 9214 | 237 | 9539+2899715 | 167 | 9778 | 213 | 9906 | 36 | | |
| 9038+289715 | 166 | 9216 | 237 | 9546 | 213 | 9779 | 241 | 9910 | 68 | | |
| 9038+289720 | 166 | 9218 | 237 | 9546+28808 | 163 | 9780 | 241 | 9911 | 36 | | |
| 9039 | 222 | 9251 | 228 | 9547 | 213 | 9781 | 241 | 9912 | 36 | | |
| 9039+2899715 | 166 | 9252 | 228 | 9548 | 213 | 9784 | 82 | 9915 | 68 | | |
| 9060 | 227 | 9253 | 228 | 9549 | 213 | 9817 | 109 | 9924 | 68 | | |



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