BIJUR DELIMON
INTERNATIONAL

Smooth operations – From centralized lubrication and cooling systems

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Product Overview

With BIJUR DELIMON,

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We've all come to expect ongoing innovation, and this is particularly true in the field of centralized lubrication. As machines become bigger and drives move faster, technological advances spurn the need for new solutions. So in addition to minimizing wear caused by today's unnecessary friction, one of our goals is to consistently improve products. That's our job! And, when our teams of developers, engineers, system analysts and product specialists meet to discuss ground breaking innovation, the Kaizen motto"quality before capital" can often be heard.

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ZERTIFIZIERT ISO 9001 CERTIFIED

that's what you get.

- **system specific lubricant systems**
- **high-quality products that reduce your expenses and conserve resources**
- **state-of the-art electronics to monitor systems for proper lubricant dispensing and operation**
- **active protection for the environment from precise metering of lubricant**
- **lower maintenance and repair expenses**
- **friendly, free consultation**
- **installation by our own staff**
- **fast, efficient service**
- **training for your staff**
- **regular lubricant checks**

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Single Line System

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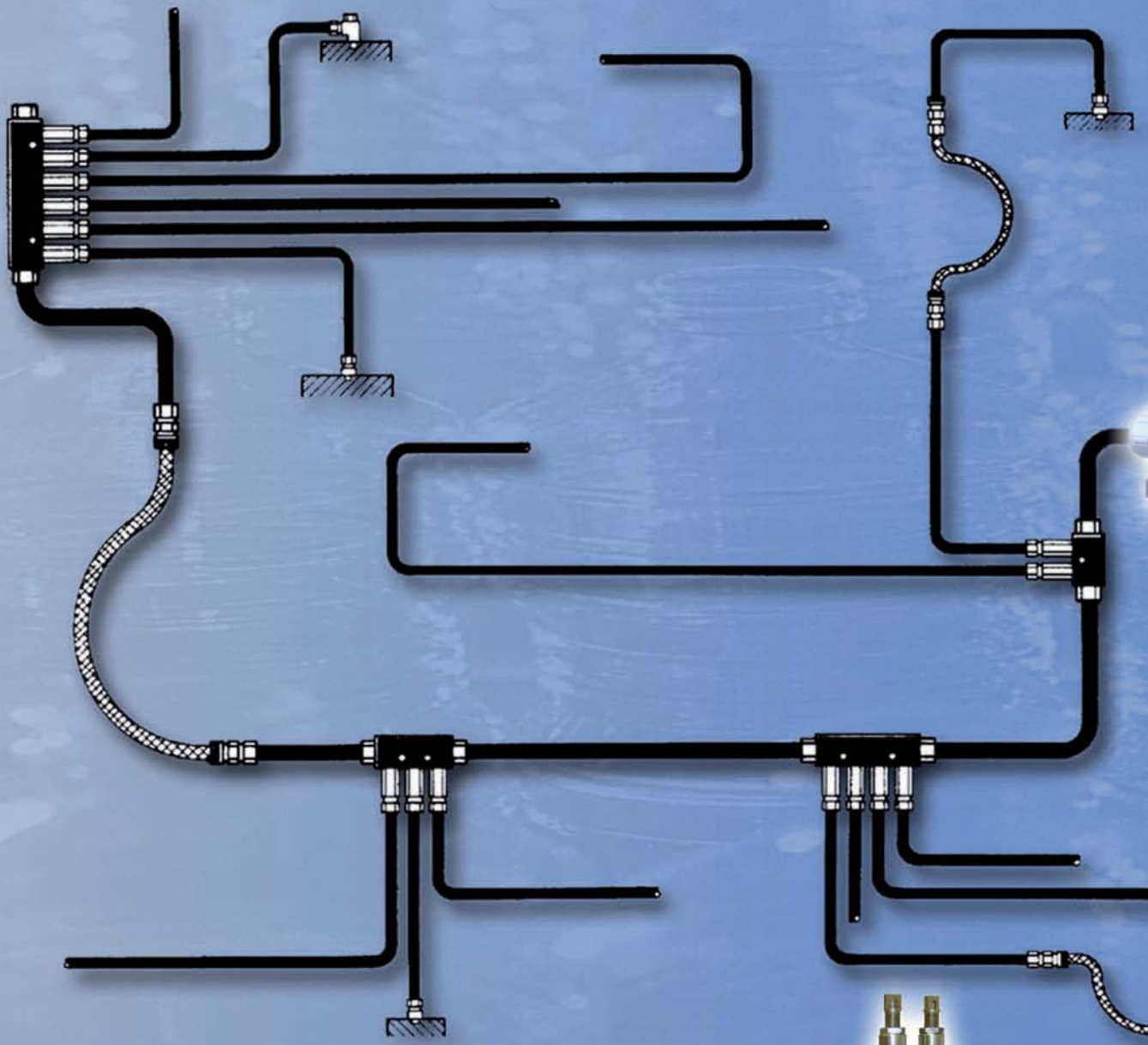

distributor ▶

Type	FL32 / FL33	FL42 / FL43	FL1 / FL11
Lubricant	grease up to NLGI No. 2	oil	grease up to NLGI No. 2
Output volume per stroke and outlet	FL32: 0.016 - 0.131 cm^3 FL33: 0.016 - 0.049 cm^3	FL42: 0.016 - 0.049 cm^3 FL43: 0.016 - 0.131 cm^3	FL1: 0.131 - 1.64 cm^3 FL11: 0.82 - 8.2 cm^3
max. pressure	238 bar	68 bar	241 bar

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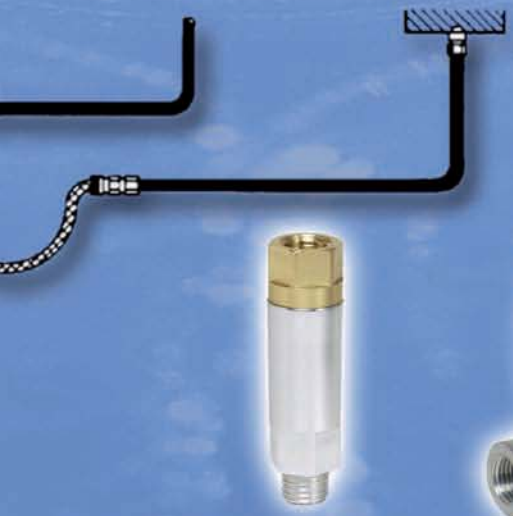
A main feed line connects the pump to distributor elements located near the lubrication points. Each friction point has its own element. During the lubrication process, the pump first raises, then lowers main line pressure in order to cycle the metering and distribution elements. Suitable for all compact to mid-sized machinery and equipment.

TMD-5 automatic lubricators are motor driven piston pumps with a spring discharge. They are ideal for machines having up to 50 lubrication points.

L18P manual pumps are well suited for use with resistance type oil meter units (SLR) on medium size machines.



ZEM 32 / 33	ZEM 34	ZEM 35	ZEM 39
oil - 20 to 1500 cSt (soft greases NLGI 000 / 00 after consulting)	oil - 20 to 1500 cSt (soft greases NLGI 000 / 00 after consulting)	oil - 20 to 1500 cSt (soft greases NLGI 000 / 00 after consulting)	oil - 20 to 1500 cSt (soft greases NLGI 000 / 00 after consulting)
0.01 / 0.03 / 0.06 / 0.1 / 0.16 cm^3	0.01 / 0.03 / 0.06 / 0.1 / 0.16 cm^3	0.1 / 0.2 / 0.4 / 0.6 cm^3	0.2 / 0.4 / 0.6 / 1.0 / 1.5 cm^3
45 bar	45 bar	45 bar	45 bar

Dual Line System

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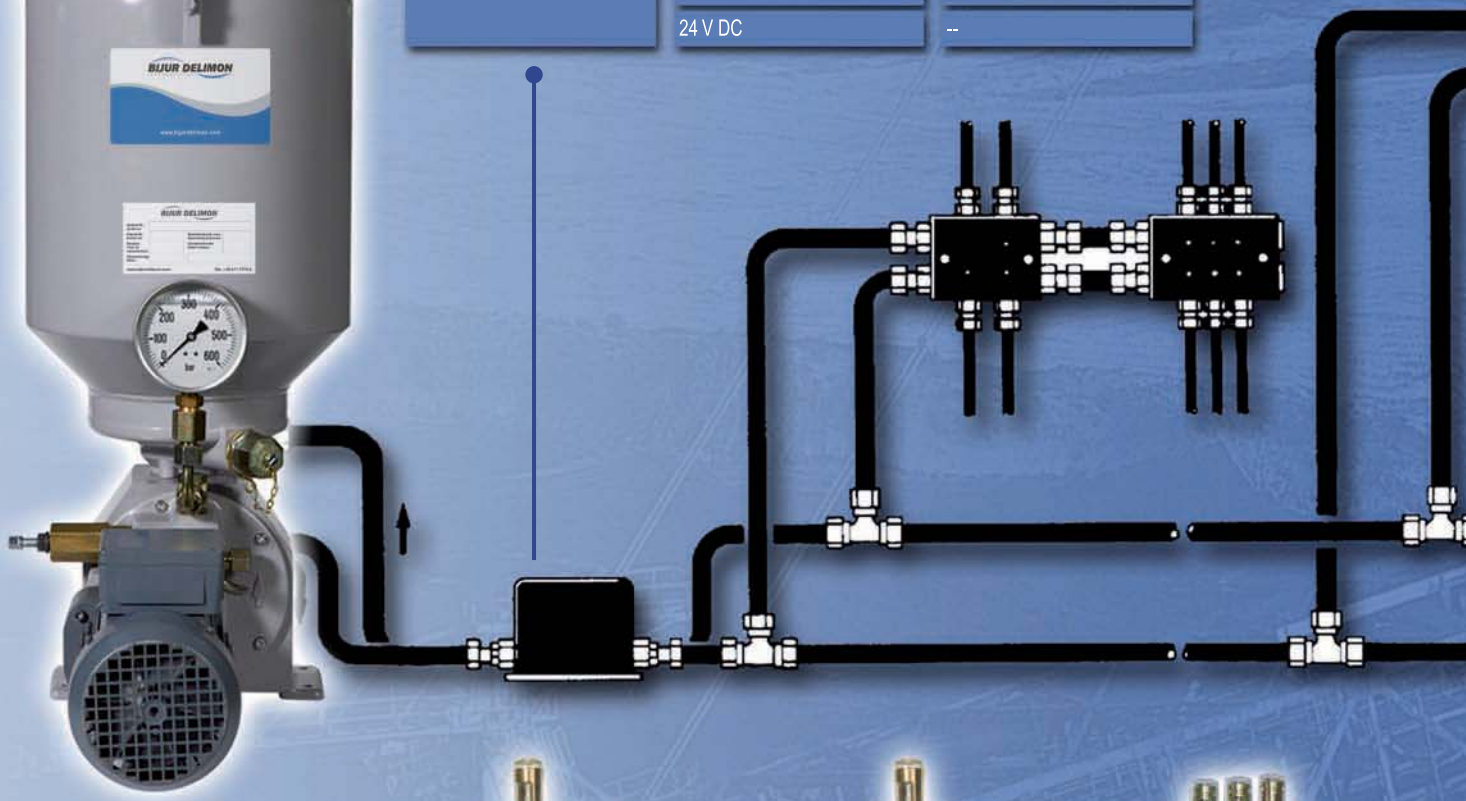
Type	BM-B	BS-B	DC37
Operating pressure max.	400 bar	400 bar	310 bar
Reservoir	8 / 15 / 30 liter	30 / 60 / 100 liter	15 / 45 kg
Output volume	2 / 4 l/h	7 / 14 / 22 l/h	9 kg/h
Lubricant	Oil / grease to NLGI No. 3	Oil / grease to NLGI No. 3	Oil / grease to NLGI No. 2

Type	SA-V	DR4
Operating pressure	400 bar	40 to 350 bar
Temperature range	-20 to +80°C	-20 to +100°C
Power supply	110-127 / 200-240 V AC	--
	24 V DC	--



distributor ▶

Type	DDM	SDM	ZV-B – flange distributor
Lubricant	oil or grease (max. NLGI No. 3)	oil or grease (max. NLGI No. 3)	oil / grease / liquid grease
Output volume per stroke and outlet	0.1 - 1.0 cm^3 (DDM 1) 0.5 - 5.0 cm^3 (DDM 5) 3.0 - 15.0 cm^3 (DDM 15)	0.2 - 2.0 cm^3 (SDM 1) 1.0 - 10.0 cm^3 (SDM 5) 6.0 - 30.0 cm^3 (SDM 15)	1.5 - 3.0 cm^3 optionally adjustable
max. pressure	350 bar	350 bar	400 bar

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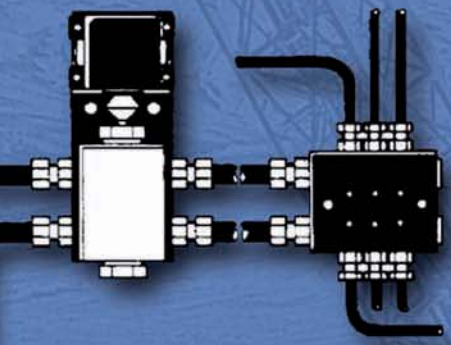
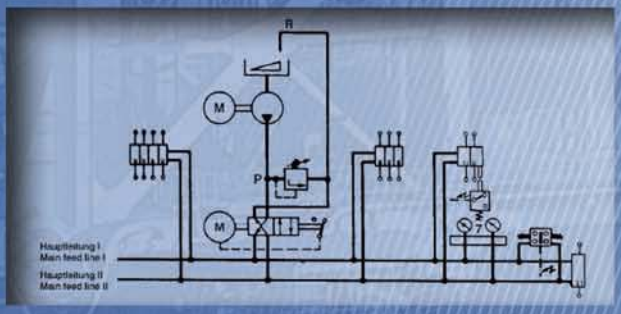
DC42
300 (350) bar
45 / 90 kg
19.2 / 28.8 kg/h
Oil / grease to NLGI No. 2



Main pressure and return lines are connected through a changeover valve. Via this electrically or hydraulically activated device, two mainline pipes are alternately connected with the feed and return lines of the pump. All distributor elements are connected to the two main line pipes. To achieve more precision in lubricant distribution, additional progressive dividers may be installed down stream from each dual line divider outlet. Line change over is achieved by utilizing a differential pressure switching device at the end of the line. After one pressure change has taken place in the two main line pipes, all lubrication points have been supplied with lubricant. Excellently suited for all applications; particularly for harsh operating conditions and large plants.



DDJ	DM	ZV-B	ZV-C
oil or grease (max. NLGI No. 3)	oil or grease (max. NLGI No. 3)	oil / grease / liquid grease	oil / grease / liquid grease
0.13 - 0.6 cm^3	0.2 - 1.2 cm^3 0.6 - 2.25 cm^3 1.2 - 5.1 cm^3 3.0 - 14.25 cm^3 6.0 - 28.5 cm^3	0.5 - 1.5 - 3.0 cm^3 optionally adjustable	15.0 cm^3 adjustable
350 bar	350 bar	400 bar	400 bar

Multi Line System

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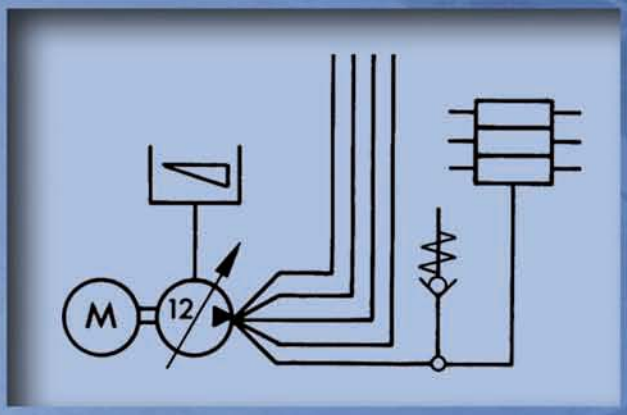
Type	FZ-A
Operating pressure max.	200 bar
Reservoir	2.5 / 8 / 15 / 30 liter
Outlets	1 to 12
Output	0.01 to 0.63 cm³/min
Lubricant	Grease to NLGI No. 2

for oil / grease / liquid grease

Lubrication points are connected directly to the pump via pipelines without the need for installing distributors. Metering of lubricant for each single friction point takes place directly from the pump. System extension and monitoring capability for friction points can be affected through the installation of progressive distributors. Suitable for supplying lubricant to friction points on all equipment.



distributor ▶

Type	M2500	ZP - A/C
Lubricant	oil or grease to NLGI No. 2	oil / grease / liquid grease
Output volume per stroke and outlet	0.08 - 1.31 cm³	0.1 / 0.2 / 0.3 cm³
max. pressure	240 bar	160 bar

Progressive System

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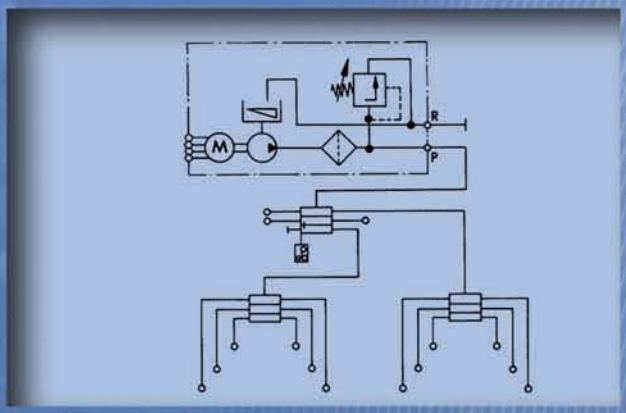
Type	FZ-B
Operating pressure max.	200 bar
Reservoir	2.5 / 8 / 15 / 30 liter
Outlets	1 or 2
Output	0.06 to 7.56 cm³/min
Lubricant	Grease to NLGI No. 2

A main lubricant line connects the pump with progressive distributors. The distributors meter lubricant received from the pump, feeding it onward to the various friction points. Varying ratios of lubricant distribution are achieved utilizing feed rates initially selected during system design. Progressive systems are easily monitored and controlled. In fact, in certain applications they can be combined and monitored in conjunction with other systems.

for oil / grease / liquid grease



ZP - B/D

oil / grease / liquid grease

0.5 / 1.2 / 2.0 cm³

300 bar

PVE – block construction

oil / grease / liquid grease

0.07 cm³

160 (300) bar

PVB - block construction

oil / grease / liquid grease

0.17 cm³

160 bar

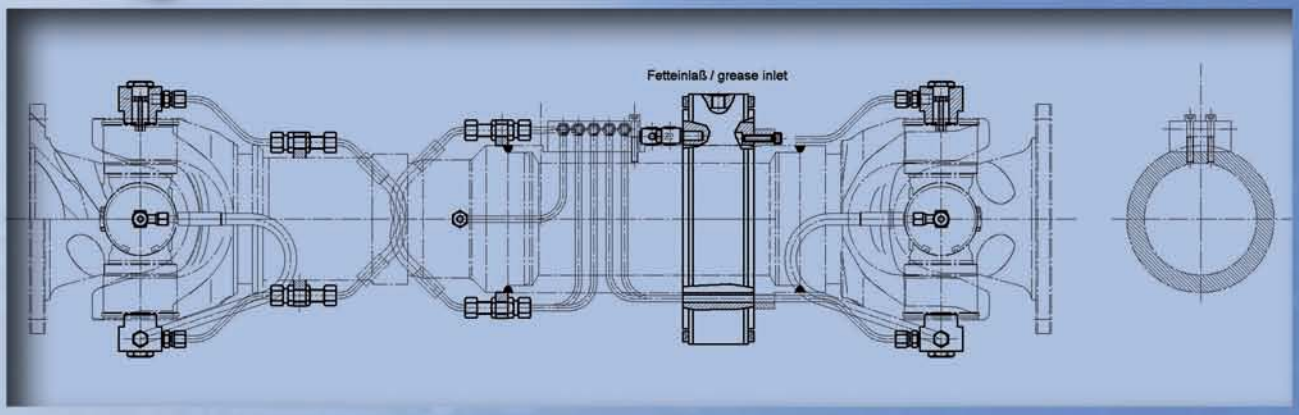
E 4 - block construction

oil / grease / liquid grease

0.4 cm³

160 bar

Cardan Shaft Lubrication – Synsafe



The Synsafe transmission ring is an integral component of a central lubrication system, specifically designed for transmitting lubricant onto a rotating shaft during normal operation. Synsafe makes it possible for individual or multiple lubrication points to be lubricated even though rotational movement is occurring. Cardan shafts are but one example of a typical application. The Synsafe lubricant transmission ring is a ring-in-ring system. The system's outer and inner rings are tied to each other utilizing a roller bearing, radially sealed off from the outside. There are four G 1/4 threaded cross holes on the outer ring and one G 1/8 outlet thread provided on the inner ring. The cross holes serve to provide and inlet for the lubricant, while the other threaded cross holes can be utilized for mounting the outer ring. Lubricant then flows through internal channels from the inlet to the outlet side.

A pressure relief unit serves to relieve pressure within the ring following the lubrication process. This protects the seals from overheating. For distribution of lubricant on the shaft, we recommend PVE or PVB type progressive distributors. Since Synsafe is integrated into a central lubrication system, it can be utilized in single-line, progressive or dual-line systems. Depending on the type of system selected, lubricant can be fed cyclically or continuously using any injector, valve or distributor technology, and is compatible with any type of corresponding control system.

Technical data:	
Operating pressure max.	50 bar
Output volume	1000 cm^3/h
Number of inlets	1
Number of outlets	4
Operating temperature	-10 to +120°C
Lubricants	grease NLGI No. 000 to 3 (DIN 51818)

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Air-oil Lubrication System

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SKYJET

SKYJET benefits include:

- 50% reduced air consumption
- Precise oil dosing
- Ease of installation.

Air-oil lubrication is facilitated by affixing an air metering block to a progressive lubrication system divider. Lubricant is then introduced into a continuously flowing stream of compressed air. Lubricant deposited on the inner pipe wall is then carried along by the compressed air flow. Because lubricant is extended along the pipeline, the initial pulsed oil feed from the divider is essentially turned into a stream providing continuous lubrication to the point of friction. Suitable for all system sizes and wide variation in the volumes to be metered.

Today, air-oil lubrication technology is widely accepted and utilized in a wide variety of mechanical engineering applications, and thoughout hi-tech plants. As examples, air-oil lubrication is frequently found on continuous casting equiment, cold and hot strip mills and various rolling mills throughout the steel and aluminum industries. Robust lubrication procedures, better yet – significantly automated systems – ensure ongoing operational safety, longer equipment service life and lower maintenance costs. Plus, because lubricant consumption is reduced, air-oil installations are also Eco-friendy. Combining all of these benefits, SKYJET systems offer tailor-made solutions for each application and provide decisive advantages.

Spray Lubrication System

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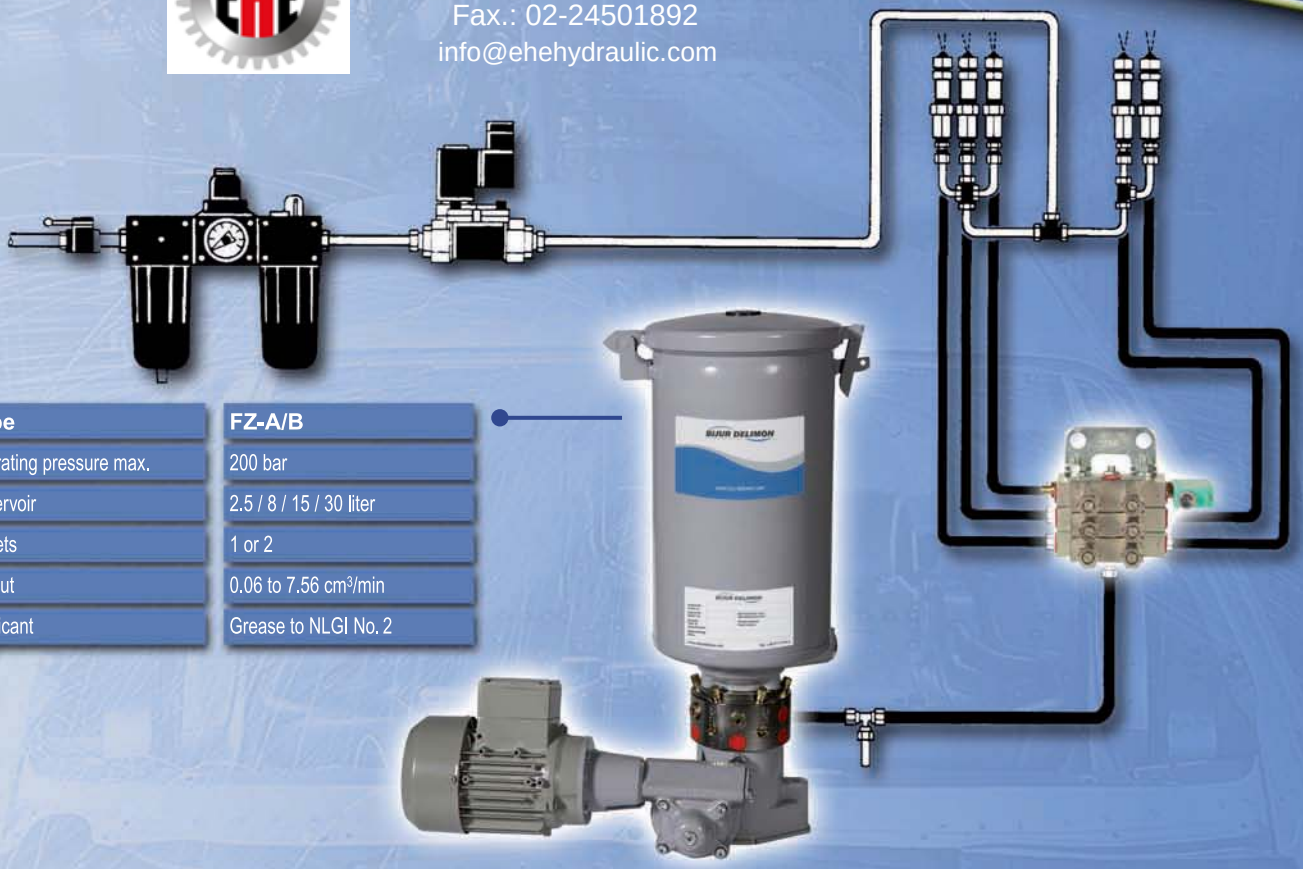
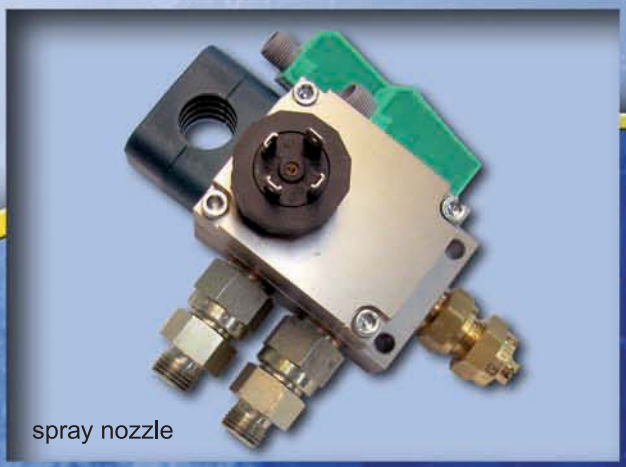


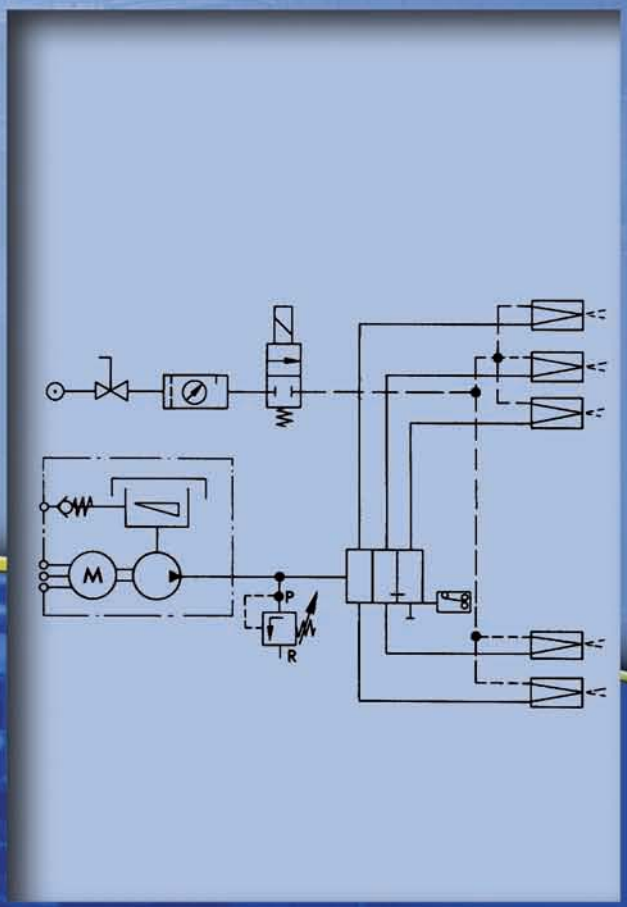
Type	FZ-A/B
Operating pressure max.	200 bar
Reservoir	2.5 / 8 / 15 / 30 liter
Outlets	1 or 2
Output	0.06 to 7.56 cm^3/min
Lubricant	Grease to NLGI No. 2

for grease or liquid grease

Using a centralized oil or grease system, lubricant is metered and fed into spray nozzles. It is then entrained in the nozzle by the flowing compressed air. Spray patterns can be tailored to the application through the use of omnidirectional or fan jet nozzle inserts. Spray nozzles provide and achieve excellent distribution of lubricants. Simple nozzle design combined with rugged construction afford long functional life with minimal maintenance expense.



spray nozzle



Oil Recirculation Systems

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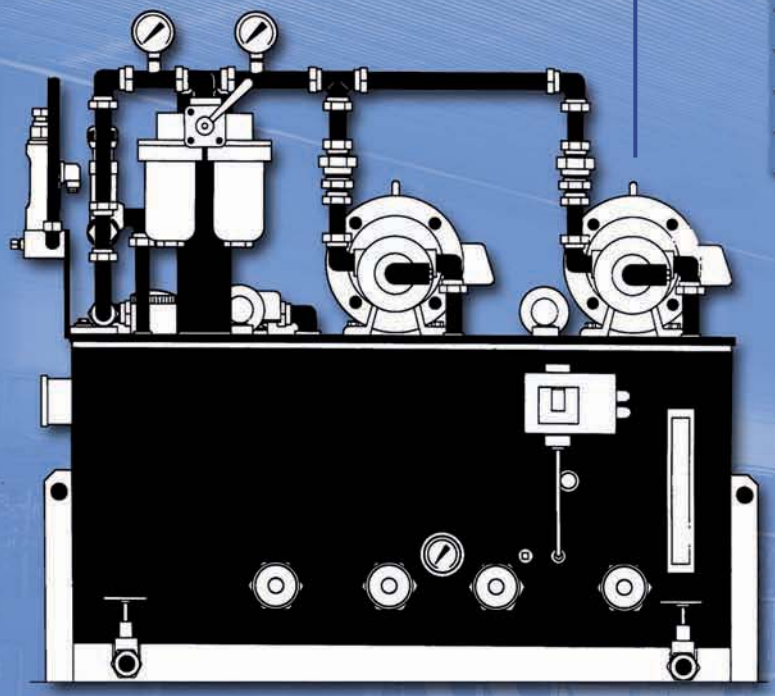
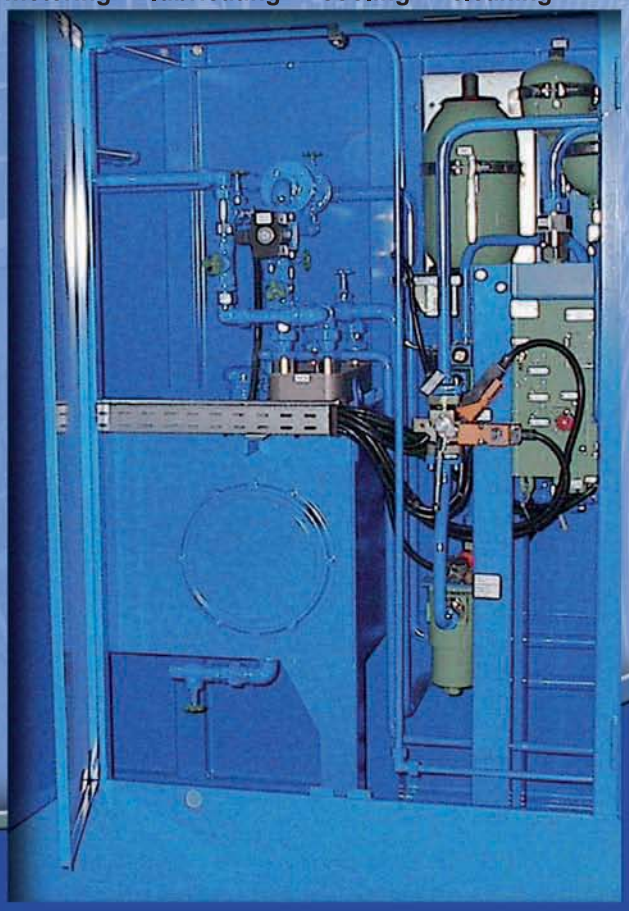


Type	Oil recirculation unit
Reservoir size	4 to 20.000 liter
Output	0.06 to 1.200 l/min
Viscosity	ISO VG 33 to 680 cSt
Temperature	15 to 60°C

Flow meter -
to 20 l/min. max.,
regardless of viscosity

Reservoir stored oil is metered by restrictors, or alternatively by progressive dividers, then delivered to lubrication points from where it flows back into the reservoir for conditioning. Suitable for keeping bearings at a moderate operating temperature and for removing contamination.

Common applications:
metering — lubricating — cooling — cleaning



Type WS-E Chain conveyor lubrication system

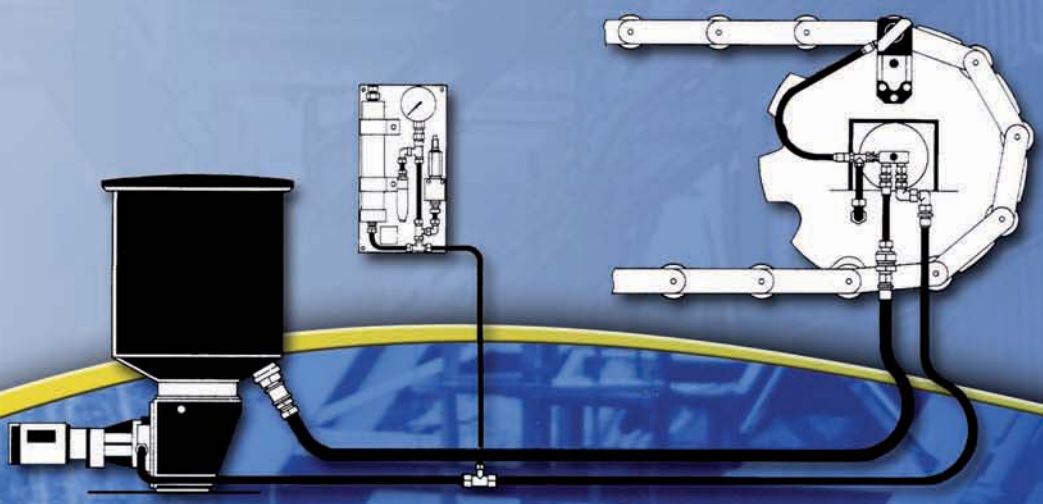
for oil

This system is designed to feed very small volumes of oil to lubrication points on conveyor chain. With the WS-E pump, up to 12 individual chain lubrication points can be serviced; without use of compressed air. Additional lubrication points may be serviced in multi-strand applications. The big advantage of the system lies in its ability to meter small volumes of oil; 0.01 cm^3 and/or 0.025 cm^3 per lubrication point, and per lubricating cycle. Its ability to apply a well-aimed spray where it's needed - without the use of compressed air – is also appreciated throughout the automotive industry. (German registered utility model DGM 7 826 547).

Type RK-C Chain conveyor lubrication system

for grease or liquid grease

RK-C chain lubricators are utilized to provide lubricant to existing grease nipples on conveyors; e.g. apron conveyors or sugar beet conveyors. This lubrication system ensures that continuous, automatic lubrication takes place with a minimum of moving parts. Lubricating heads are controlled by a rotary slide valve, and lubrication of the bolts at the chain wheel takes place during the reversing phase.



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Gear wheel lubrication system

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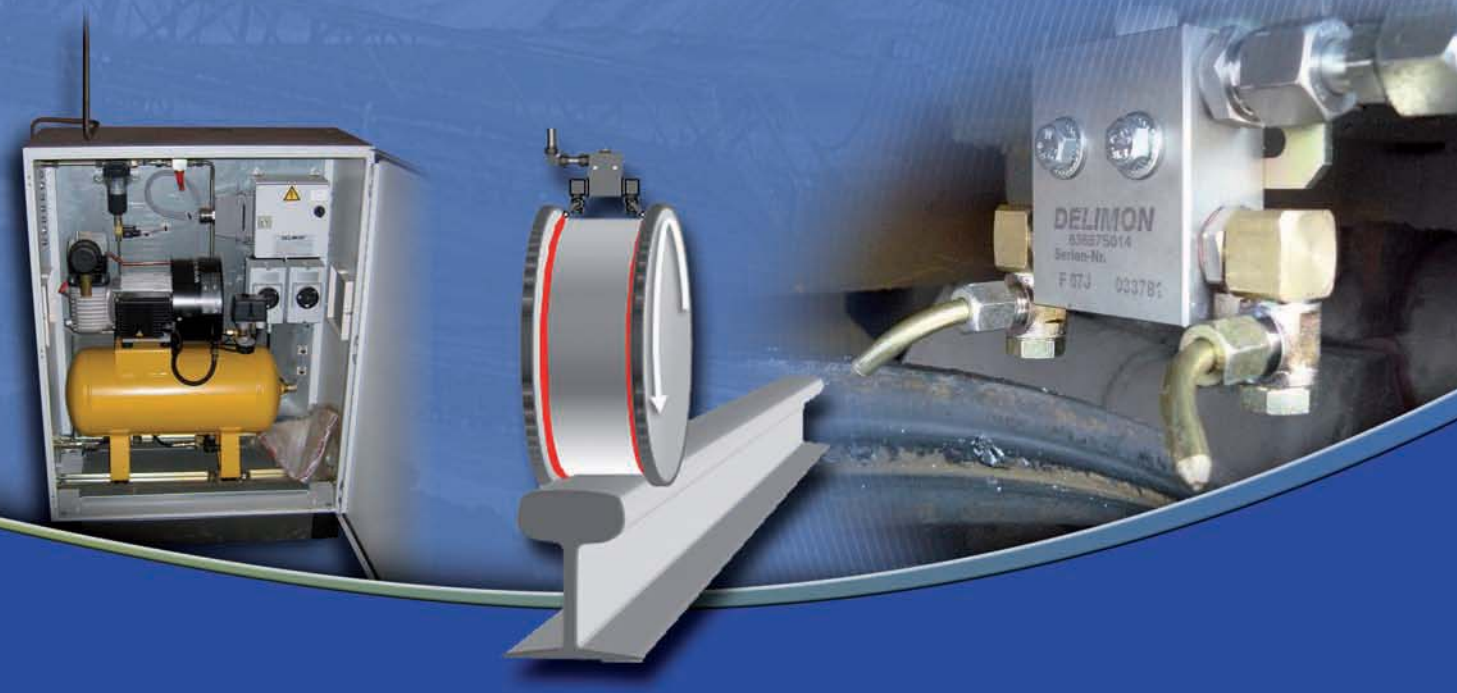
for grease or liquid grease

With the gear wheel lubircation system it's now possible to precisely apply a perfect film of lubricant onto gear teeth. Controlling the grease supply being fed to the meshing teeth is accomplished by staggering the height and positioning of outlet holes on the mating teeth of our lubricating pinion. The introduction of grease into the lubricating pinion is accomplished utilizing one of our many pumps.

Crane track lubrication system CraneJet

for grease or liquid grease

The CraneJet lubrication system is designed to reduce friction and wear on wheel flanges and rails common to crane systems. At automatically controlled intervals, low volumes of precisely metered lubricant are sprayed onto the rails and wheel flanges of the crane drive's leading wheel set utilizing compressed air. During operation, it is then transferred over to the rail flanks of following wheel sets.



Mobile wheel flange lubrication system

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Railjet

Whenever subway trains, freight trains or trams quietly run from one station to the next, the silence is probably due to Railjet ~ the mobile wheel flange lubrication system from Delimon. Wheel flange lubrication not only effectively reduces friction and wear on wheels and rails, it also reduces the generation of noise.

Utilizing compressed air, lubricant is sprayed onto the wheel flanges, and as the train rolls, lubricant automatically transfers from the flanks on the wheels flanges to the following wheel sets.

Advantages

- 5 to 15 % reduction in required driving energy
- Flange wear reduction up to 80%
- Cost reduction from reduction of reprofiling intervals
- Preservation of environment through noise attenuation

And there's more! The system easilly dispenses biodegradeable lubricants... low weight spray nozzles, 265g, facilitate ease of installation and adjustment... and an intelligent electronic controller enables adaption to all operational requirements.

Silent Speed ToR

Top of Rail = Friction Modification

- reduction of noise in curves
- reduction of wear
- reduction of corrugation
- reliable
- easy to apply
- environmentally friendly

Stationary rail lubrication

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StaTrack

Wherever track systems carry heavy loads, whenever heavy loads cause heightened noise, Railway engineers employ StaTrack:

- in narrow radius track systems
- in grooved rails in open and closed track beds in public roads

StaTrack - decentralized

StaTrack systems feed lubricant to various points positioned on the tracks. It operates utilizing a central grease pump which delivers lubricant through high-pressure lines directly to points along the rails. For double track applications, two pumps, working independently of each other, can be installed in a single cabinet.

StaTrack - centralized

Centralized systems are utilized in applications where multiple tracks are installed within confined areas; e.g. in industrial yards, or at the exists and entrances of car sheds. Utilization of progressive distributors make it possible to supply lubricant to individual tracks via a common pump. On-site *track distributors* make this possible. Use of progressive distributors also permits comprehensivre monitoring of system operation.

Advantages

- Reduced wear of both wheel and rail
- Noise abatement
- Biodegradable lubricants provide good adherence, can be precisely metered and provide an environmentally friendly solution.
- Lubrication times and intervals are adaptable to local conditions.
- Minimal lubricant consumption
- Increased reliability

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Cooling

Our Cooling Division specialized in the design, assembly and installation of industrial cooling systems. Regardless of your requirements, our Cooling project team stands ready to provide standard or custom built equipment to satisfy your application and temperature control requirements. Benefits of our water cooling system include:

- Accurate control of flow, pressure and temperature
- Reduced water charges
- Reduced operating costs
- Reduced corrosion problems
- Reduced maintenance costs
- Extended equipment life

Chillers

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Dry air cooler

Pump station

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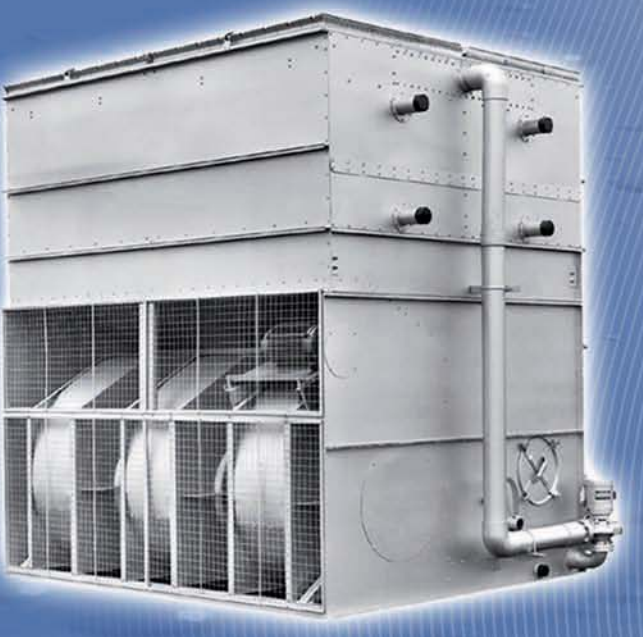
Roll coolant systems



Evaporative cooling tower

A great package: high-tech measuring devices plus world-class service

With Bijur Delimon International you can reduce wear, avoid downtime, guarantee precision and reliability... and, be environmentally friendly. This is what you'll come to expect when you partner with us for all of your centralized lubrication needs ~ plus much, much more...

Total Lubrication Management

Our "Total Lubrication Management" system provides everything you need... from one source. By placing appropriate maintenance, new equipment and quality service at your disposal, centralized lubrication becomes effective and efficient – within your facility – safely, functionally and instantly.

"Total Lubrication Management" focuses on providing all of your requirements for:

- lubrication systems and parts
- oil and grease
- system selection, design and installation
- preventive maintenance
- applications engineering and service
- documentation for all service and maintenance
- clean-up and waste disposal
- inventory management

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