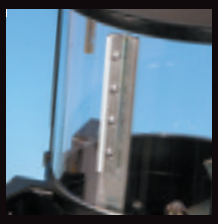
INTERLUBE

Leaders in Lubrication Solutions

Lubrication Systems for Vehicles & Plant

Interlube Systems Ltd - providers of the ultimate in lubrication solutions...

MULTI-LINE BEARING REQUIREMENTS & ACCESSORIES

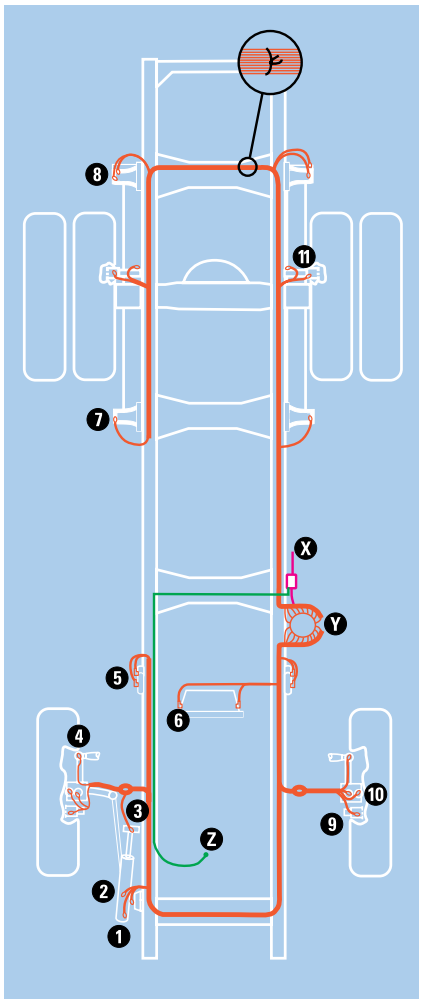
Typical Bearing Chart	Pumping Unit	
1. Power Steering Cylinder Front	0.015	0.025
2. Power Steering Cylinder Intermediate	0.015	0.025
3. Power Steering Cylinder Rear	0.015	0.025
4. Track Rod End	0.040	0.040
5. Shackle Pins Front	0.025	0.040
6. Clutch operating Shaft (Split Feed* - see note)	0.010	0.015
7. Spring Pins	0.015	0.025
8. Shackle Pins Rear	0.040	0.040
9. Brake Cam Shaft Front	0.010	0.015
10. King Pins	0.025	0.040
11. Brake Cam Shaft Rear	0.010	0.015

*Split Feeds are only permitted on oil lubrication systems.

Other Bearings usually connected to the lubrication system:

Balance Beam Bearings (2 feeds)	2 x 0.040	2 x 0.040
Drag Link Ball Joint	0.040	0.040
Gear Lever Linkage	0.010	0.015
Accelerator Cross Shaft	0.010	0.015
Pedal Linkages	0.010	0.015
Brake Slack Adjusters	0.015	0.025
Tipping Body Hinges	0.015	0.025
Fifth Wheel Coupling Pivot Point	0.015	0.025
Fifth Wheel Coupling Jaws	0.015	0.025

MULTI-LINE CHASSIS LAYOUT



X Control Box (XGS)
Y Pump Air Supply (XGS)
Z Ignition Controlled Electrical Supply

ACCESSORIES

Elbow Connectors

Elbows	
Part Number	**Thread Size**
PM90412	1/8PTF SAE
PM90484	1/4-28UNF
PM90485	5/16-24UNF
PM90487	1/8BSPT
PM90489	M6X1P
PM90490	M8X1P
PM90491	M8X1,25P
PM90492	M10X1P
PM90493	M10X1,5P

Straight Connectors

Part Number	Thread Size
PM80412	1/8PTF SAE
PM80484	1/4-28UNF
PM80485	5/16-24UNF
PM80487	1/8BSPT
PM80489	M6X1P
PM80490	M8X1P
PM80491	M8X1,25
PM80492	M10X1P
PM80493	M10X1,5P
25478-056	4mm to 4mm

GREASE

Premium Grade NGLI 000 / FG3,0

25717-284	12 x 1 Litre Bottles
25717-284 / 12.5K	12.5 KG Pail
25717-284 / 25K	25 KG Pail
25717-284 / 50K	50 KG Pail
25717-284 / 180K	180 KG Pail

NLGI Grade 2

25717-270 / 12.5K	12.5 KG Pail
25717-270 / 25K	25 KG Pail

Accessories

152823/25. . . .4mm OD soft grease filled tube x 25M
152823/50. . . .4mm OD soft grease filled tube x 50M
152824/25. . . .4mm OD Heavy grease filled tube x 25M
27233-507. . . .Cable ties

OA50397/1	2 off	Numbered sleeves 1 – 12
OA50397/2	2 off	Numbered sleeves 1 – 24
OA50397/3	2 off	Numbered sleeves 1 – 36
OA50397/4	2 off	Numbered sleeves 1 – 48
OA50397/5	2 off	Numbered sleeves 1 – 60

Looming Accessories

Plastic tape 1" Black 1755-830
Spiral Binding (1-2 lines) 1837-001
Spiral Binding 8mm I/D (3-4 lines) 1837-002
Spiral Binding 10mm I/D (5-7 lines) 1837-003
Spiral Binding 14mm I/D (8-12 lines) . . .1837-004

Grease Specifications

NGLI 000 / FG3,0

Colour . . . . . Amber
Texture . . . . . Fluid, Tacky
NLGI 000
Soap Type. . . . . Calcium
Penetration @ 25°C 445-475
Base Viscosity @ 40°C . . . . . 35 to 45 CST
Drop Point . . . . . N/A

NLGI Grade 2

Colour . . . . . Pale Amber
Texture . . . . . Slightly Fibrous
NLGI 2
Soap Type . . . . . Lithium
Penetration @ 25°C 265-295
Base Viscosity @ 40°C 125cSt
Drop Point . . . . . 185°C

Part of the

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ISSUE 09/2010 IS1295

MULTI-LINE SYSTEMS

The mulit-line system is a straightforward and highly effective system for centralised lubrication. Each bearing point is supplied directly from the pumping unit via an individual feed line. Inside the pump a cam rotates and operates the pumping units sequentially as it turns, and also operates the paddle blade which draws grease into the pumping chamber.

The feed lines are run as a loom along the vehicle and lines branch off to each separate point. It is a simple system that is straightforward to install and requires no distribution or manifold blocks. Individual bearing lubrication means that should a line break, only that point is affected, not the complete system.

The system is capable of handling lubricants from SAE80/90 oil upto and including NLGI grade 2 grease. The system generally runs at low pressure, typically 3-4 bar The feed lines are 4mm OD semi rigid black nylon tube, UV stabilised, rated 140 Bar (14 N/m). Fittings used at bearing point are generally the pushfit type, although compression fittings are also available. System monitoring is possible by means of a cam rotation switch.

AC 1

PUMPING UNITS

Positive displacement pumping units are available in six different stroke outputs to cater for varying output requirements, and are colour coded for easy identification. They are supplied complete with outlet fittings suitable for 4mm, 6mm & 3/16" OD tubing, max pressure rated to 120 bar 12n/M.

Colour	Stroke output cc	For 4mm tube	For 3/16" tube	For 6mm tube
Red	0.010	78033	78043	78053
Green	0.015	78034	78044	78054
Yellow	0.025	78035	78045	78055
Blue	0.040	78036	78046	78056
Grey	0.060	78037	78047	78057
Black	0.100	78038	78048	78058

Blanking plug for unused outlets 34237-402

The operating parameters for Multiline pumps with standard greases are shown below:

LUBRICANT	
NLGI Grade 2	Down to 10°F / -12°C
NLGI Grade 1	Down to 0°F / -18°C
NLGI Grade 0	Down to -10°F / -23°C
NLGI Grade 00	Down to -20°F / -29°C
NLGI Grade 000	Down to -30°F/ -35°C
Do not use heavy, tackified greases or Bentone (clay based) high temperature grease.	
Upper Temp Limit on all pumps +40°C	

A full list of fittings and spares for multi-line systems can be found in the 'AC Service Manual'. For information regarding Installation of multi-line systems, a separate booklet is available.

Systems can be supplied as complete kits to suit specific applications

Typical applications include tippers, refuse vehicles, sweepers, trailers, and cranes.




MULTI-LINE SYSTEM - AC RANGE

The AC range of pumps are compact electrically operated multi-line pumps which come in two versions with three reservoir sizes. They are a simple but highly effective pump that will provide reliable and virtually maintenance free operation in a wide variety of applications

- Electrically operated 12/24V DC
- Suitable for use with oil and grease upto and including NLGI grade II
- Serves upto 60 points (over 60 consult Interlube)
- Six colour coded pumping units available with different outputs
- Multi position timer with memory
- Manual override on all models

AC1 & AC2
Maximum 36
Lubrication Points

AC 2

AC3 (3 Litre Reservoir)
Maximum 60
Lubrication Points

AC 3

Ordering Method AC1 X X X (1.25 Litre reservoir)
AC2 X X X (2 Litre reservoir)

	Cycle Time
1	2.5 Mins*
2	9 Mins
3	12 Mins
4	15 Mins

	12V. D.C.
2	24V. D.C.

	12 Points
2	24 Points
3	36 Points**

** Suitable for oil and fluid grease up to 000 grade only

1 Continuous operation – 0.4rpm
2 3 4 Cycle time includes run time of 2.5mins & delay period
**A faster motor with a speed of 0.75rpm is available giving a continuous cycle time of 1.33rpm*

Ordering Method AC3 X X X / X

	Delay Period
0	Continuous double speed
1	Continuous standard speed*
2	3 Minute delay
3	7 Minute delay
4	11 Minute delay
5	15 Minute delay
6	19 Minute delay
7	24 Minute delay
8	30 Minute delay
9	36 Minute delay

	12V.
2	24V.

	12 Points
2	24 Points
3	36 Points
4	48 Points
5	60 Points

	Grease Nipple Filler
2	Quick Release Coupling
3	Dual Fill

*Standard motor speed 0.9rpm

The pumps are connected directly to the ignition feed or PTO of a vehicle, and operate whenever the ignition is switched on. The pumps can be set to run with a variable time delay, or to run constantly whenever they are live. This is particularly useful where the power feed is intermittent and can be used for applications such as cranes or trailers.. A memory built into the pumps PCB means that the pump will continue at the same stage of the cycle whenever power is switched off and back on. All pumps have a manual override facility. The AC1 & AC2 with 1.25 and 2 litre reservoirs respectively, and have a lid which houses the motor and PCB. They can be filled via a filler cap in the lid or using the adaptor on the base of the pump. The AC3 has a 3 litre reservoir and has the motor and PCB mounted at the bottom of the pump. It also has the option of a low level sensor and is available with a grease nipple, quick fill or dual fill option.

Typical fill intervals
AC2 12 points pumping unit blue (0.04) 12 min cycle time – 833 hours / 21 weeks
AC2 20 points pumping unit blue (0.04) 15 min cycle time – 625 hours / 16 weeks
AC3 36 points pumping unit blue (0.04) 15 min cycle time – 520 hours / 13 weeks *Based on 40 hour week*

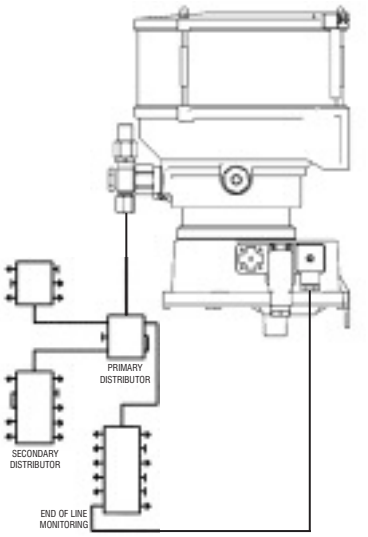
For further technical information a service and maintenance manual is available for the AC Range.

PROGRESSIVE SYSTEMS

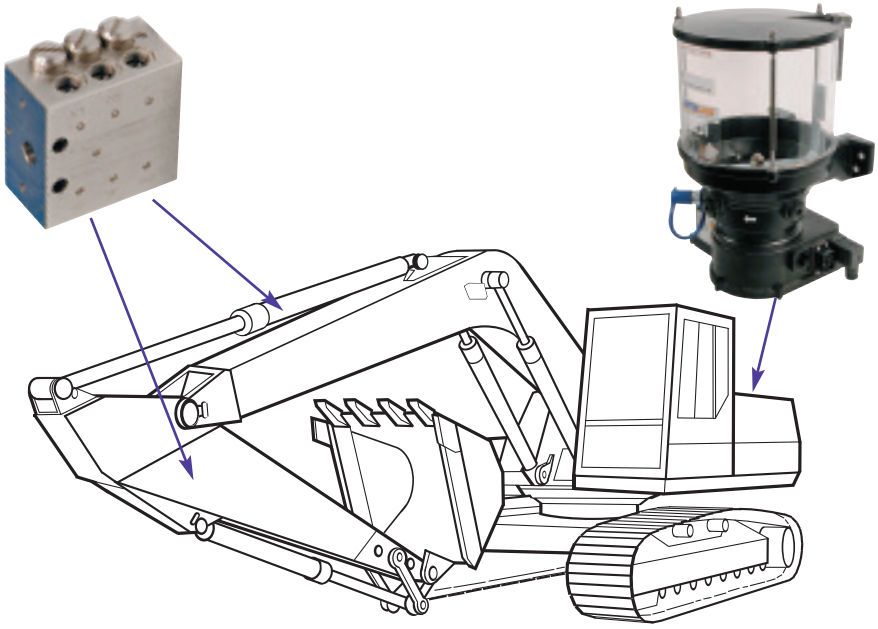
The HDI pump range is suitable for most plant applications but for very large machines we can offer a 24v DC electric keg pump (see picture) suitable for use with a variety of grease drums.

The keg pump can be used with divider valves and injectors plus an optional hose reel kit should manual lubrication be needed at any time.
A full range of brackets are available for quick and easy mounting of the control panel and/or 3 way ball valve for the optional hose reel kit.

TYPICAL BLOCK LAYOUT



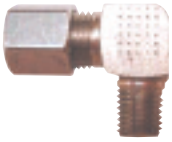
Low level monitoring and end of line proximity sensing available as options



ACCESSORIES

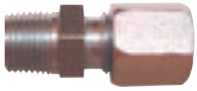
Elbow Connectors

25477-905 .....6mm x M6
25477-915 .....6mm x M8
25477-925 .....6mm x 1/8 BSP
25477-935 .....6mm x M10
52938/101.....Swivel Elbow 1/8BSP



Straight Connectors

25477-767 ...6mm x 1/4 BSP
25477-906...6mm x M6
25477-916...6mm x M8
25477-926...6mm x 1/8 BSP
25477-936...6mm x M10
LM506 .....DE Connector
NG6302 .....Short Extension 1/8 BSP
NG6303 .....Long Extension 1/8 BSP



Divider Valves

Hose & Tube Spares

24210-402/P.....H P Hose (unfilled)
83417-002/25.....H P Hose (filled) 25M Coil
136782 .....6mm Nylon Tube (unfilled)
152820/25 .....6mm Nylon Tube (filled) 25M
41250-043/P.....Ferrule for H P Hose
41255-642/P.....Hose Insert 6mm stand pipe
1178-124.....6mm Steel Bundy Tube

General Spares

25381-722 .....(Double) Weld Hose Clamp
25381-756 .....(Single) Weld Hose Clamp
25477-855 .....6mm Olive
25814-008 .....8mm P Clip
1837-003 .....Spiral Protection 10mm ID
1837-004 .....Spiral Protection 14mm ID
1837-006 .....Spiral Protection 20mm ID
FP12.5.....Filler Pump 12 1/2 kg Drum
1348-664 .....4 Core Electrical Cable
25717-285/125 ...12 1/2kg. NGLI2 Grease

Divider Valve Options

Part No	Description
LSV-06	LSV6 6 outlets
LSV-08	LSV8 8 outlets
LSV-10	LSV10 10 outlets
LSV-12	LSV12 12 outlets
LSV-14	LSV14 14 outlets
LSV-06K	LSV6K 6 outlets + pin
LSV-08K	LSV8K 8 outlets + pin
LSV-10K	LSV10K 10 outlets + pin
LSV-12K	LSV12K 12 outlets + pin
LSV-367-13-1	Proximity adaptor
LSV-512-4482	Proximity switch

PROGRESSIVE SYSTEM - HDI RANGE

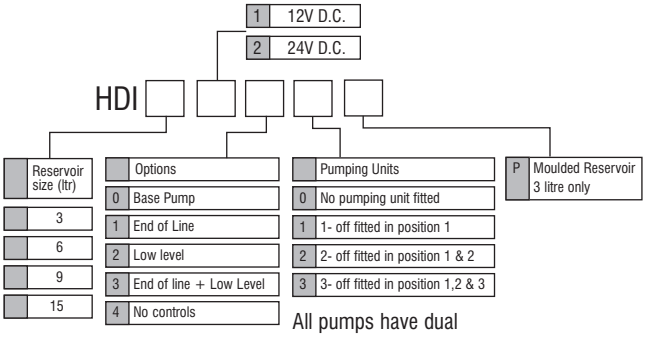
The Heavy Duty Industrial pump is a heavy duty greasing system designed to be used in the most demanding of applications, It is suitable for many applications from road vehicles to static and fixed plant. Used in conjunction with progressive divider valves, the system will accurately and consistently deliver grease to bearings and pins in specific amounts.

HDI Pump 3 Litre Moulded Reservoir

- Electrically operated controller 12/24V with integral controller
- Dual LED display for simple programming
- Wide range of pump run and delay time settings
- End of line monitoring option means pump can be set to switch off after a set number of system cycles, and alarm in case of system fault.
- Low level sensor option
- Suitable for use with oil SAE 80 upto and including grade 2 grease
- Available with 3, 6, 9 or 15 litre reservoir
- Comes with upto 3 pumping units

HDI Pump 6 Litre Reservoir

Pump Selection guide



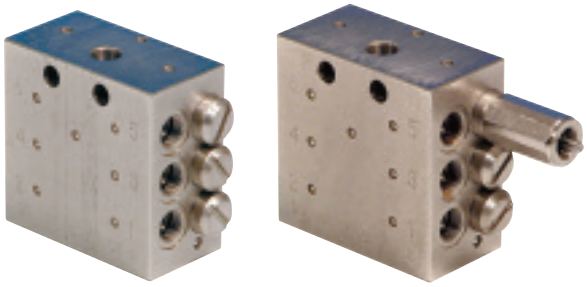
All pumps have dual fill options, quick fill and grease nipple.

Specification

Pump motor speed	30rpm
Pumping unit output	4.2cc/min
Pump output per revolution	0.14cc
Pump run time	from 1 to 99 mins or 10 to 300 revs
Delay time	from 1 minute to 99 hours
Operating range	-30°C to +40°C
Max operating pressure	250 bar

The progressive distribution system allows precise regulation of lubricant output to specific points, so a system can deliver varying outputs to different points as required. The HDI pump operates with divider valves. The pump can also feed the bearing point direct if required. Grease is dispensed from the pumping unit, to the divider valves via 8mm HP hose. Depending on the system layout, the pump feeds the initial or 'primary' block, which then feed the secondary blocks, which in turn feed the bearing points usually via 6mm tube. Where necessary special heavy duty pipes or fittings are available. Interlube can supply the complete range of items necessary to install a system and complete kits for specific machines.

LSV Progressive Divider Valve



For further information on the HDI system a service and maintenance booklet is available

MULTI-LINE SYSTEM - XGS

The Interlube XGS is an electrically and pneumatically operated multi line pump. It is virtually maintenance free, and is fully adjustable, delivering precise lubrication whenever the vehicle is operating. It is particularly suitable for systems with a larger number of points.

- Electrically operated controller 12/24V DC
- Suitable for use with oil and grease upto and including NLGI grade II
- Serves upto a maximum of 84 points
- Six colour coded pumping units with different outputs
- 3 litre reservoir
- Manual override on controller

OPERATION

The XGS system operates from existing vehicle services, its electrical supply being taken from the ignition circuit and air pressure from the auxiliary supply. This ensures automatic lubrication whenever the vehicle is in motion, each pump cycle being governed by the controller and unaffected by ignition interruptions. Each pulse of air pressure applied to the pump air motor causes the cams to partially rotate, completing one lubricating cycle every 15 pulses. As the cams advance, each pumping unit in contact with the cam lobe discharges a predetermined volume of lubricant into its bearing, automatically recharging as the cycle proceeds.

Part No's		
Pump	XGS 4012	12 outlets
	XGS 4024	24 outlets
	XGS 4036`	36 outlets
	XGS 4048	48 outlets
	XGS 4060	60 outlets
	XGS 4072	72 outlets
	XGS 4084	84 outlets
Controller	AF17472/12V	12V DC
	AF17472/24V	24V DC

Controller

The pump is operated via the controller which provides a range of settings for cycle time. The controller is connected to the vehicle ignition and the auxillary air supply. The controller works by sending a pulse of air to the pump which moves the clutch mechanism and drives the pump.

Timer settings: (12 possible) minimum pulse interval 18 seconds - cycle time: 4.5 mins
maximum pulse interval 144 seconds - cycle time: 36 mins

Specification

Input operating pressure 4.6 to 10.5 bar
Air consumption .06m^3/per hour

For further information on the XGS a service and maintenance manual is available.

SINGLE-LINE SYSTEM - AX150

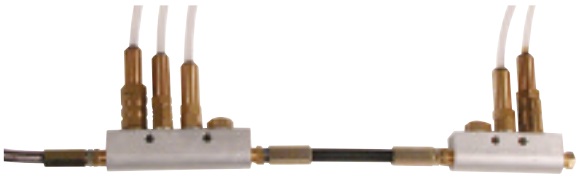
The AX150 is a single line system with a pneumatically operated pump that is operated via an adjustable controller. With an extremely durable pump, the system requires minimal maintenance and can be easily extended or adapted to a wide variety of applications. The high pressures generated by the air operated piston means that a large number of points can be supplied over long distances.

- Serves upto a maximum of 150 points
- Delivery lines of upto 50M
- Variable electronic cycle time settings via controller
- Six injector outputs available
- Manual override facility
- Single line feed means that system is suitable for use with lorry /trailer combinations or 'road trains'.
- Operates with grade 00 grease or lighter
- Reservoir sizes 3 litre as standard. 6, 9 and 15 litre available as options

3 Litre Standard

6 Litre Option

The controller / timer is connected to the vehicle ignition system and auxillary air supply, and will give a pulse of air regularly to the pump, which discharges a quantity of grease that is distributed from the pump via a single line and through manifolds and grease meters to the bearings. Main grease feed lines are 8mm OD HP hose. The manifolds are aluminium, and grease injectors are brass with push-fit connectors. Feed lines from injectors to grease points are 5mm semi rigid nylon tubing. The injectors can be changed easily if required, for example to alter meter output size.



Specification

Pump part No	AX150-14-20500
Controller/Timer	AF17472/24V/F for 24V or AF17472/12V/F for 12V
Controller settings (delay time)	20mins, 45mins, 90mins, 3 hours, 4 hours, 6 hours, 12 hours
Run time of pump	1 minute
Electrically operated controller	12/24v DC
Required air inlet pressure	6-10bar
Delivery pressure	upto 120 bar / 1750 psi max
Grease meter outputs:	0.008cc, 0.016cc, 0.05cc, 0.08cc, 0.16cc, 0.33cc
Pump output	25 cc per stroke

Note When planning a system ensure that grease delivery per stroke is sufficient to cover the outputs of all grease meters in the system

A full range of fittings and spares are available, details available separately.