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Technical News Bulletin

Steinhausen, April 2012

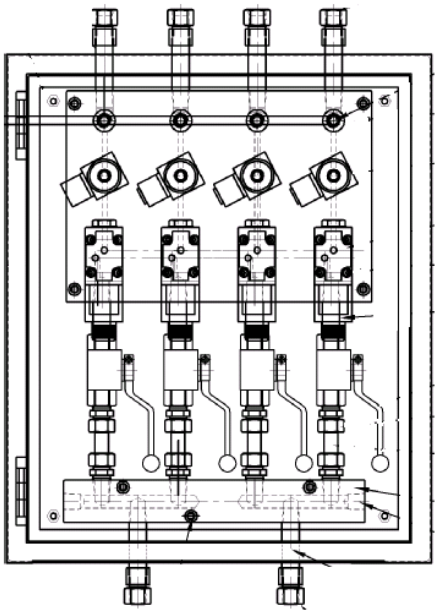
FleXLube

– Provides a means of connection which retains a central location for the lubrication system and introduces a zone concept.
– Trouble-free motor driven gear pump.
– Fine tuning for different elements ensures correct lubrication and may reduce overall oil consumption.

Introduction

With the introduction of new technologies to the forming machines the correct lubrication cycle time and type of oil needs more attention. The FLEXLube system provides a means of connection which retains a central location for the lubrication system and introduces a zone concept. This zone concept permits differing lubrication intervals. The dual oil unit permits the use of different oil types meeting the demands of all types of IS Machine lines.

Pump and Controls	**Distribution Boxes**
Two basic pump units with control system are available • Single Oil Pump Unit 200-1891 • Dual Oil Pump Unit 200-1901	Distribution Boxes are available from 2 to 4 zones with one / two oil inlets. Figure below shows distribution box (Door Removed) with two inlets with two plus two outlets



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System Description

The system comprises a pump unit with control, and distribution box(s)

Pump Unit Major Components

- Oil reservoir
- Gear pump and motor
- Pressure relief valve
- Exhaust valve (two-position four-way valve)
- Controls

Distribution Box Main Components

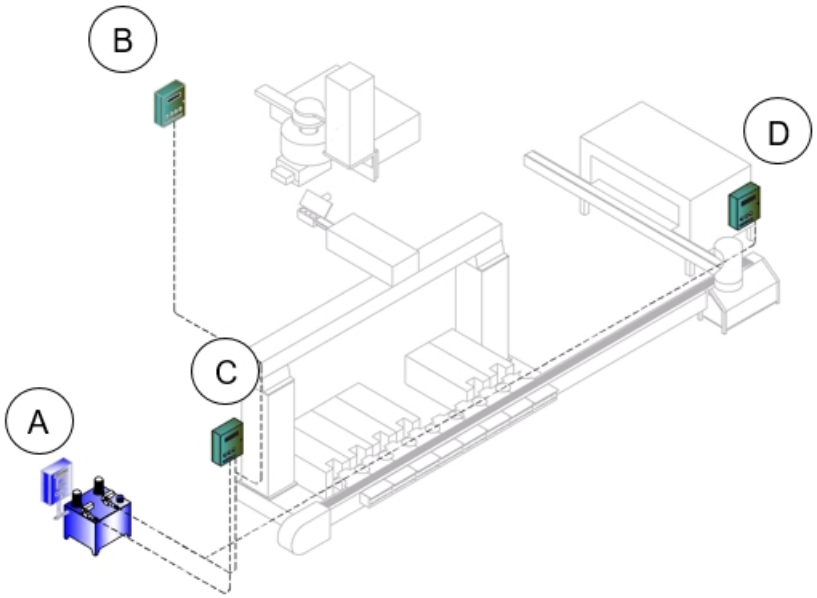
- Isolation valve
- Solenoid-actuated gate valve
- Pressure switch
- Manometer

Principle of operation

The system pressure is made by a constant running gear pump. The pressurized oil is diverted to the lubrication pressure lines via a four-way two-position valve (exhaust valve). The oil distribution box provides the zone control and monitors the pressure to each lubrication connection. Each distribution box has the can have from two to four zones. The zones are be controlled form the oil pump and controls (Single or Dual oil type)

Specification

The illustration below shows typical distribution box placement for a typical machine line lubrication system providing maximum flexibility.



A	Pump and controls
B	Feeder distribution
C	Machine distribution
D	Ware handling distribution

Ideally distribution boxes should be mounted locally at the machine. This ensures minimum pressure drops and good operation of the injectors.

Recommended FlexLube Installation for Emhart IS Machines (single line)

The tables show a full FlexLube install with oil type and recommended lubrication cycles.
Three distribution boxes (Feeder, Machine, Ware Handling) are positioned close to the equipment being lubricated, avoiding long piping with the risk of a substantial pressure drop. It ensures proper operation of the injectors

Note

The interval times are recommended for machine start-up. The oil quality and ambient temperatures have an effect on the final timing. After start-up, the timing must be fine-tuned empirically to ensure that the components receive sufficient oil, and oil is not wasted.

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AIS – IS Machine

Equipment	Part Number	Lubrication Connection	Lubrication interval	Oil Type
Pump and Controls Two Oils	200-1901-8			
Distribution Box Feeder Three Zone 1 Oil	200-1895-2	Feeder Plunger	20	VG 220 Synthetic
		Revolving Tube Mechanism	20	VG 220 Synthetic
		Shear Mechanism	3	VG 220 Synthetic
AIS Machine Distribution 4 zone 2 plus 2 Or IS Machine Distribution 3 zone 2 plus 1	200-1905-4 Or 200-1905-2	Overhead Manifold Lubrication	30	VG 220 Synthetic
		Section Frame Lube	30	VG 68 Mineral
		Plunger Mechanism Section	12 Press & Blow 40 Blow & Blow	VG 68 Mineral
		AIS Blank and Mold Bracket	***20***	***VG 220 Synthetic***
Distribution Box Ware Handling 4 Zone one oil	200-1895-3	Machine Conveyor	40	VG 220 Synthetic
		Ware Transfer	30	VG 220 Synthetic
		Cross Conveyor	40	VG 220 Synthetic
		Lehr Loader	30	VG 220 Synthetic

For further configuration examples consult drawing 200-1906 or the FlexLube manual H33101

Availability / Application

The following system components are available to meet the demands of all installations

Single oil pump unit with controls panel to operate up to 12 zones	200-1891-8
Dual oil pump unit with control panel to operate up to 12 zones	200-1901-8
Distribution box, two-zone, single oil type	200-1895-1
Distribution box, three-zone, single oil type	200-1895-2
Distribution box, four-zone, single oil type	200-1895-3
Distribution box, two-zone, dual oil feed, one plus one	200-1905-1
Distribution box, three-zone, dual oil feed, one plus two	200-1905-2
Distribution box, four-zone, dual oil feed, one plus three	200-1905-3
Distribution box, four-zone, dual oil feed, two plus two	200-1905-4

Note

Piping and cable between the various Pump and Distribution Boxes is not included in the supply

Installation Requirements

The pump unit is designed for operation between 5°C and 45° C.

Power Supply

400 VAC, 3-phase + neutral 50/60Hz, 3 Amp, PE

Changes to Machine Connections.

On newly manufactured forming machine lines, it is recommended that the distribution is made as per the example shown this will give maximum flexibility.

For existing machine lines to be converted, some limitations apply.
The overhead lubrication can be connected separately by disconnecting and blanking open ended lines to create the required single point connection. For separate plunger mechanism lines, please contact Emhart Glass for conversion parts.

Features / Benefits

Features	Benefits
Trouble-free motor driven gear pump	Compressed air installation and maintenance not required
Centralized control system	All settings for zones entered from one location
Distribution at the machine	Reduces pipe runs during installation
One pump unit for multiple zones	Reduces installation cost
Zone system permitting independent timing for machine elements	Fine tuning for different elements ensures correct lubrication and may reduce overall oil consumption