

1951 - The Cobra-System

On October 29th, 1951 HELIOS was issued Patent No. 818926, retroactive to June 29th, 1950, for a "self-actuated device for lubricating moving lubrication points - for example, the rollers on conveyers".



This invention led quickly to the development of the HELIOS Cobra 1. The HELIOS Cobra 1 was the first mass-product device for lubricating moving lubrication points.

Today, the Cobra 3, is the most reliable, state-of-the-art unit on the market for various applications.

HELIOS, today LINCOLN

Steel Industry



Coil conveyor



Scrap conveyor

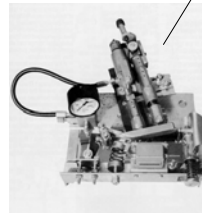
Steel Industry



Coil conveyor



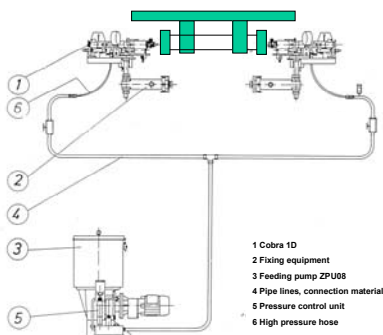
Cobra



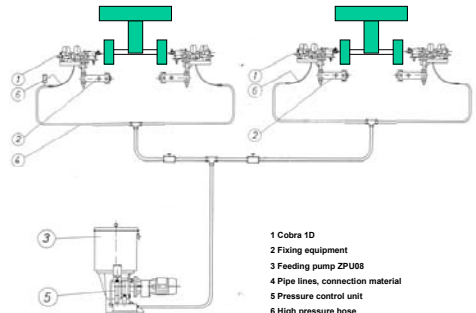
1D, mechanical



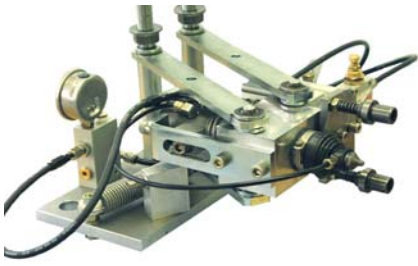
1X, mechanical pneumatic



- 1 Cobra 1D
- 2 Fixing equipment
- 3 Feeding pump ZPU08
- 4 Pipe lines, connection material
- 5 Pressure control unit
- 6 High pressure hose



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COBRA 1X

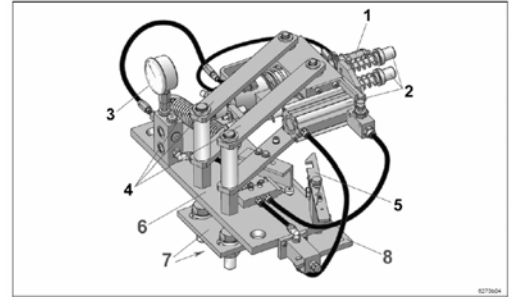
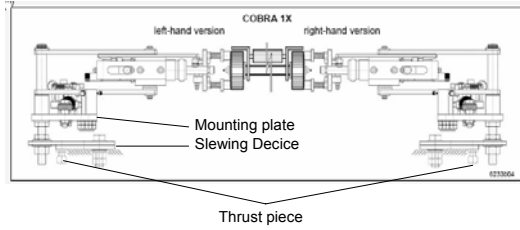


Fig. 1 COBRA 1X
 1 - Lubrication head (see Fig. 2)
 2 - Pick-up arm with air cylinder
 3 - Pressure gauge, lubricant pressure
 4 - Slewing crank with pull-back spring
 5 - Safety notch
 6 - Base plate
 7 - Slewing device
 8 - Mounting plate

Layout, adjustment



Off position

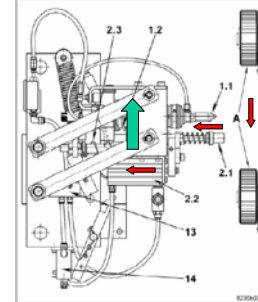


Fig. 10 COBRA 1X in off position

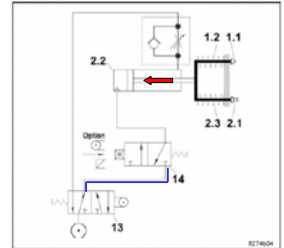


Fig. 11 Pneumatic wiring diagram in off position
 1.1 - nozzle coupler
 1.2 - compression spring for lubrication head
 2.1 - pick-up rollers
 2.2 - cylinder
 2.3 - Compression spring for pick-up arm
 13 - 5/2-way valve, mechanically operated
 14 - 3/2-way valve, mechanically operated (option: pneumatical, electrical)
 A - chain rollers

Waiting position

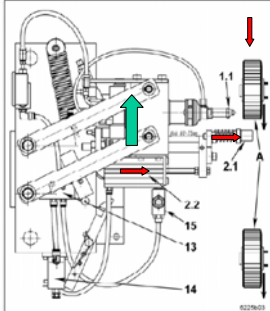


Fig. 12 COBRA 1X in waiting position

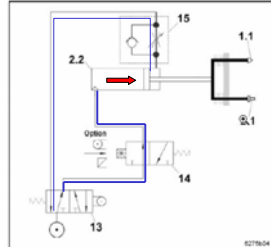


Fig. 13 Pneumatical wiring diagram in waiting position
 1.1 - nozzle coupler
 2.1 - pick-up rollers
 2.2 - cylinder
 13 - 5/2-way valve, mechanically operated
 14 - 3/2-way valve, mechanically operated (option: pneumatical, electrical)
 15 - throttle check valve
 A - chain rollers

Pick-up and Lubrication Phase

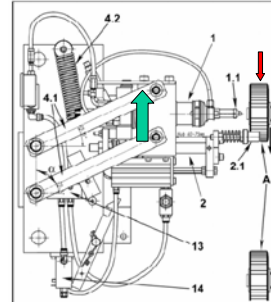


Fig. 14 COBRA 1X in pick-up phase

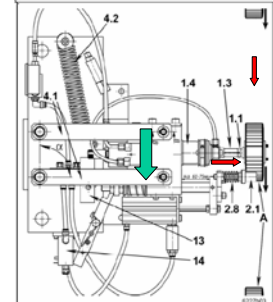


Fig. 15 COBRA 1X in the lubrication phase

1 Pick-up and Lubrication Phase

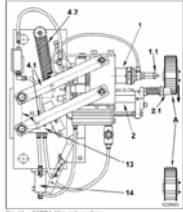


Fig. 16 COBRA 1X in pick-up phase

- 1 - flush coupler
- 1.1 - lubrication head rod
- 1.2 - lubrication head housing
- 1.3 - pick-up rollers
- 1.4 - compression springs of the pick-up rollers
- 2.1 - slewing cranks
- 2.2 - pull-back spring
- 2.3 - 5/2-way valve
- 2.8 - 3/2-way valve, mechanically operated (options: pneumatically or electrically operated)

2 End of the lubrication phase

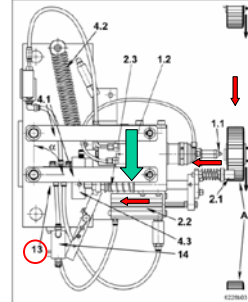


Fig. 16 COBRA 1X at the end of the lubrication procedure

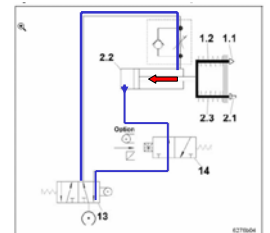


Fig. 17 Pneumatic wiring diagram at the end of the lubrication procedure

- 1.1 - nozzle coupler
- 1.2 - pick-up rollers
- 1.3 - cylinder
- 2.1 - slewing cranks
- 2.2 - pull-back spring
- 2.3 - actuating angle
- 13 - 5/2-way valve, mechanically operated
- 14 - 3/2-way valve, mechanically operated (options: pneumatically or electrically operated)
- A - chain rollers

3 Pull-back movement

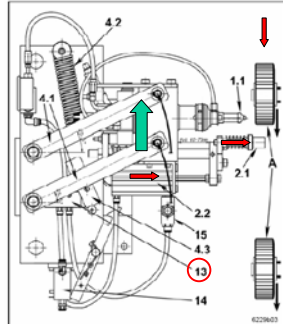


Fig. 18 COBRA 1X at the end of the pull-back movement

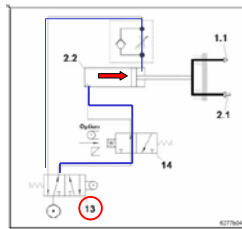


Fig. 19 Pneumatic wiring diagram at the end of the pull-back movement

- 1.1 - nozzle coupler
- 1.2 - pick-up rollers
- 1.3 - cylinder
- 2.1 - slewing cranks
- 2.2 - pull-back spring
- 2.3 - actuating angle
- 13 - 5/2-way valve, mechanically operated
- 14 - 3/2-way valve, mechanically operated (options: pneumatically or electrically operated)
- 15 - throttle check valve
- A - chain rollers

4 Pick-up and Lubrication Phase

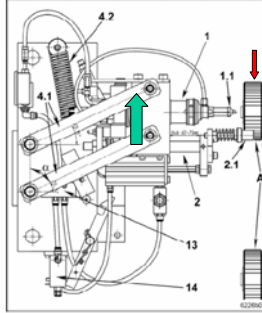


Fig. 14 COBRA 1X in pick-up phase

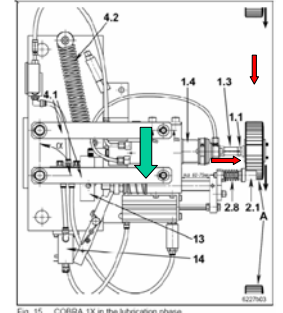
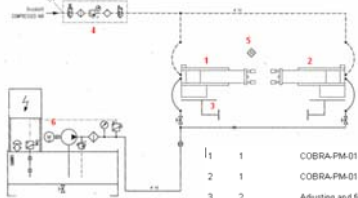
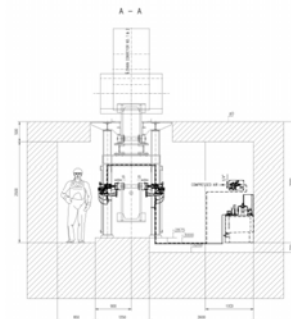
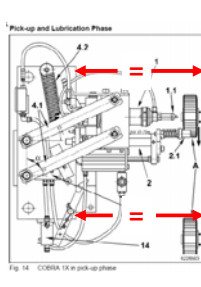
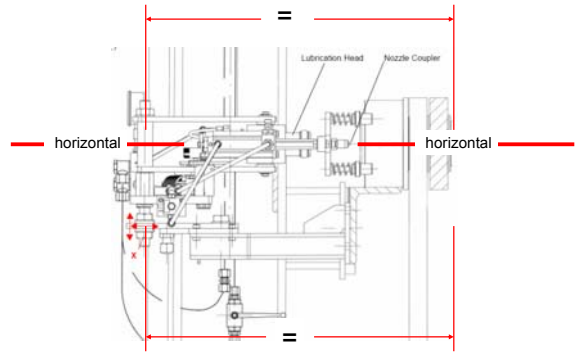
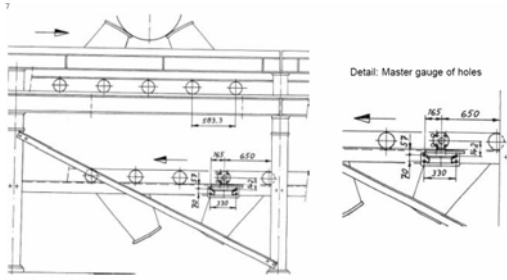


Fig. 15 COBRA 1X in the lubrication phase

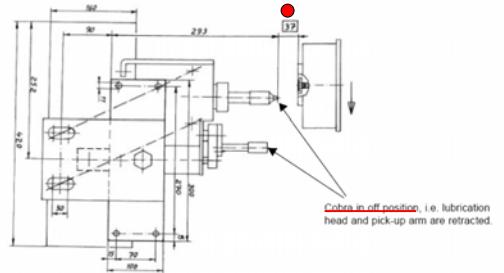


- 1 1 COBRA-FM-01-L left-hand version
- 2 1 COBRA-FM-01-R right-hand version
- 3 2 Adjusting and fixing device, long, COBRA 1X fit for the installation to an existing construction
- 4 1 Maintenance unit M.R. 24VDC 3/2 01/4 fit COBRA lubricators
- 5 1 Proximity switch 3RG4131-6AD00 10-65VDC Chain sensor
- 6 1 Oil station with control unit, completely preassembled Assembly with switch and control cabinet

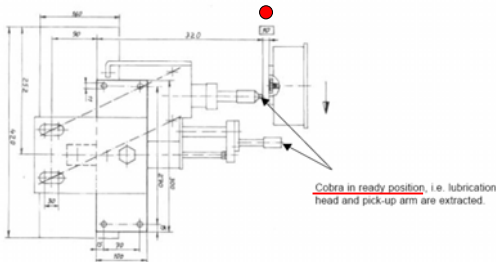




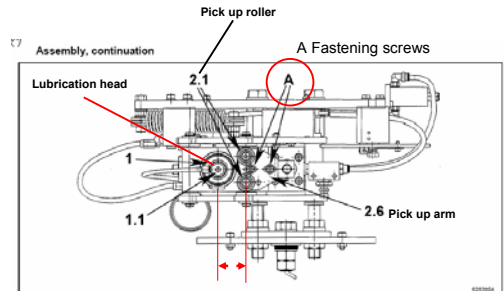
The horizontal positioning of the Cobra in off position, i.e. without air pressurization, is to be carried out according to the following drawing and adjusting measure 37mm.



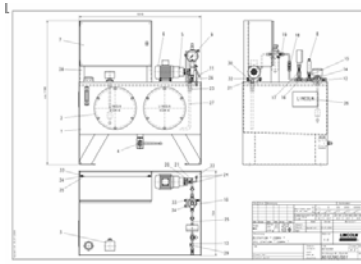
If the Cobra is in ready position, the pick-up arm is engaged into the chain and the lubrication head is extracted. The result looks as follows:



Horizontal fine adjustment



A Fine setting
Distance Lubricating head and pick roller



Max. pressure 60 bar
Output 500 ccm/Min

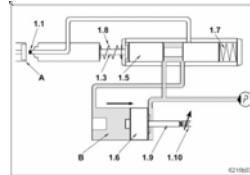


Fig. 21 Metering procedure

Fig. 22 Lubrication phase

- 1.1 - flush coupler
- 1.5 - control piston
- 1.7 - compression spring for control piston
- 1.9 - control pin
- 1.11 - fastening screw
- 1.3 - lubrication head rod
- 1.6 - supply piston
- 1.8 - compression spring for lubrication head rod
- 1.10 - metering screw
- A - lubrication fitting
- B - metering chamber

Lubrication procedure

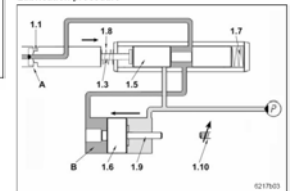


Fig. 22 Lubrication phase

7. Adjustment of output

Make sure that the COBRA 1X is in off position (see page 15).

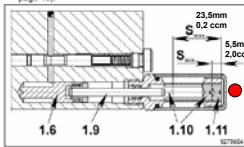


Fig. 8 Metering via lubrication head

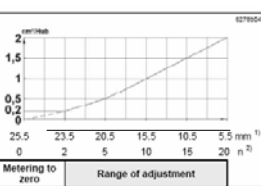
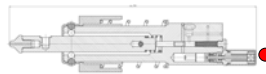


Fig. 9 Output diagram

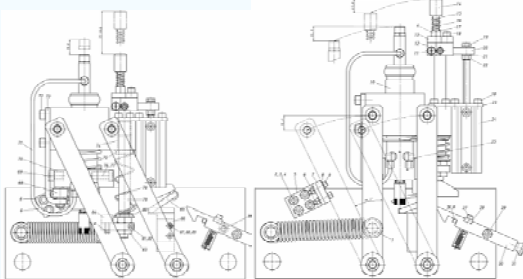
¹⁾ Depth gauge S in mm
²⁾ Number of thread revolutions (n) of the metering screw (pos. 1.10) as of the metering to zero

- 1.6 Supply piston
- 1.9 Metering pin
- 1.10 Metering screw
- 1.11 Fastening screw

- Pneumatically and mechanically operated
- Lubrication head with adjustable output

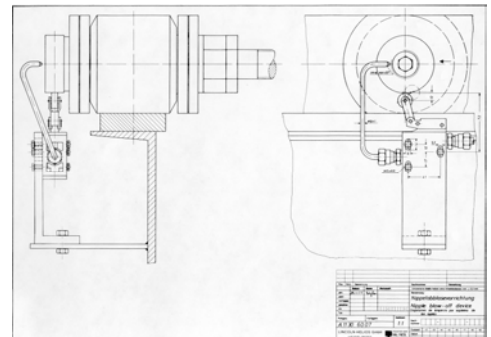
Technical data:

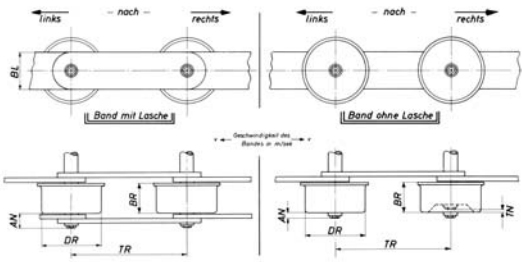
- Lubricating frequency: 1 cycle/ s (more cycles on request)
- Lubricant pressure on the lubrication fitting: Oil 40 to 80 bar, Grease 120 to 200 bar
- Output: 0.2 - 2 cm³/ stroke, adjustable
- Chain speed: 20 m/min (higher speed on request)
- Start / Stop: Standard: hand-operated
Option: automatic (electro-pneumatic)
- Lubricant: Oil or grease up to NLGI grade 2
- Monitoring: Standard: visually via indicator pin
Option: electrically via proximity switch



Startposition

Endposition





- BL - Plate width
 - AN - Distance between nipple rollers
 - DR - Roller diameter
 - TR - Roller pitch
 - BR - Roller width
 - TN - Depth of nipples in the roller (for countersunk nipples)
 - V - Conveyor speed in m/sec.
- Direction of motion - to the left / to the right