

# Product Description Safety Instructions Operating Instructions for BINKS Airless Model HP 4/32

These operating instructions are part of the equipment. Please read and follow all instructions and safety precautions before using the equipment. Disregarding can causes injuries on people and/or damages on the unit.

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Edition 06/08





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### 1. DESIGNATED USE

BINKS airless pumps are used exclusively to output and apply spray material. Any materials can be sprayed, if they are approved by spray material manufacturers for use with airless spraying equipment. These include:

- Water-thinnable lacquers and paints
- Solvent-based lacquers and paints
- Base paints and primers
- Micaceous iron ore
- Zinc-rich paints
- Epoxy and polyurethane paints
- Oils
- Liquid synthetic materials
- Wax-based underbody sealant materials
- Low-solvent and solvent-free spray material

Please observe the working guidelines and safety instructions supplied by the spray material manufacturer.



You should avoid using abrasive, granular spray material. Such spray material can cause heavy wear and tear on the valves and packing sets of the material pump, and on the nozzles used on the airless gun.

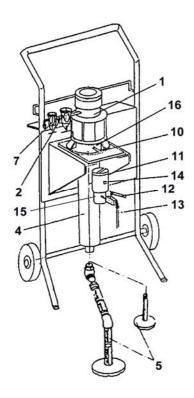
# **ATTENTION !**

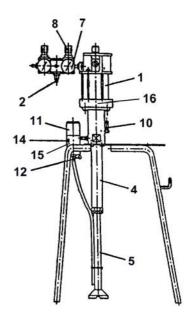
### **BEFORE STARTING UP PUMP FILL UP LUBRICATION FLUID**

FOR WATERBORNE PAINT: 0114-014871 FOR SOLVENT PAINT: 0114-009433



### 2. BRIEF DESCRIPTION (FIGURE 1)





- 1 Pneumatic drive
- 2 Compressed air supply connection piece
- 4 Spray material pump5 Suction system
- 7 Compressed air control valve
- 8 Pressure reducer
- 10 Release agent chamber

- High pressure filter
   High pressure filter relief valve
- 13 Return pipe
- 14 Grounding terminal
- 15 Spray material outlet connection piece16 Grounding terminal (if used without HP-filter)



#### Comments on figure 1

The pneumatic motor (1) drives the BINKS airless pump. An airflow controller in the pneumatic drive applies compressed air alternately to the pneumatic motor piston. This sets the butt plate moving upwards and downwards.

The pneumatic motor is flange-mounted directly to the spray material pump (4). A moving axle connects the pneumatic drive butt plate to the double piston of the spray material pump.

The ascending stroke of the double piston draws in the material through the suction system (5) and the foot valve of the material pump. At the same time, the material spray, which is already in the spray material pump above the double piston, is ejected through a check valve into the high pressure filter (11).

The descending stroke of the double piston closes the foot valve and the spray material which has been drawn in, is forced through a plunger valve into the space above the double piston. At the same time, the spray material which is already there is ejected into the high pressure filter.

If the airless gun take-off is not operative, counter pressure will build up in the spray material line. The pump will stop. Remove spray material from the airless gun and the BINKS airless pump will start up again.

The area of the motor piston is greater than the area of the material piston. This difference in area causes the pressure to intensify. With an area ratio of 60/1, for example, a working pressure of 1 bar at the pneumatic drive will be intensified to a working pressure of 60 bar at the spray material pump.

The lubrication chamber (10) physically separates the pneumatic drive from the material pump. The lubrication chamber is filled with lubricant (Order Code 0114-014871 for waterborne paint, Order Code 0114-009433 for solvent paint). The release agent cleans the double piston of the spray material pump and lubricates the packing and the moving axle.

The volume of air and thus the delivered volume of spray material is regulated by the working pressure at the compressed air control valve (7). The compressed air control valve is equipped with an excess pressure safety valve, which is triggered if the maximum working pressure at the pneumatic motor is exceeded.

The material pump can draw in spray material in two ways.

#### **Direct suction:**

This involves immersing the suction system in the spray material.

#### Suction through a flexible suction system:

This involves connecting the spray material pump to a flexible suction system. The free end of the suction system is inserted into the tank containing the spray material.



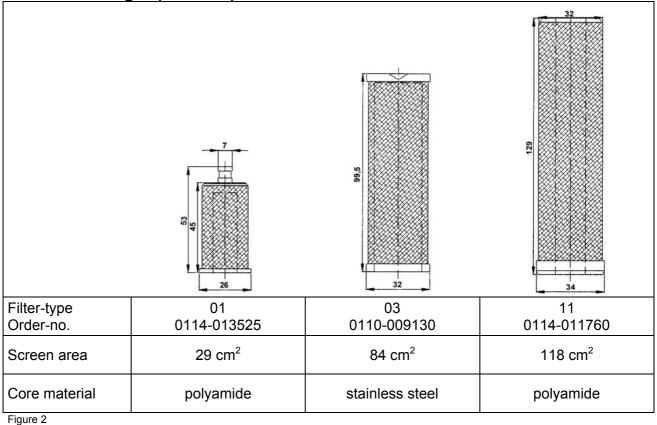
The extracted spray material is filtered through the high pressure filter (standard filter on HP 4/32: type 03 - order-no. 0110-009130), before being driven out through the spray hose and the airless gun. We recommend the following filter cartridges for the various types of spray material:

Filter size	Nozzle	Spray material
M 200	less than 0.3 mm	colourless lacquer
M 150	greater than 0.3 mm	surfacer, filler, red lead
M 100	greater than 0.3 mm	surfacer, filler, red lead
M 70	greater than 0.5 mm	micaceous iron ore, red lead
M 50	greater than 0.6 mm	emulsion, loaded spray mate- rial



Do not use a filter cartridge for fibre-loaded spray material!

#### HD filter cartridges (overview)





#### Packings:

The lifetime and the maintenance rate of a pump depend crucially on the right packing. The packing for solvent and waterbased paint are different.

For the use of high viscosity or high corrosion materials we recommend high-strength packing. Depending on the field of application there are different packings for solvent and waterbased materials.

#### Standard packing:

Upper packing: Mixed standard packing (for solvent paint materials) Consisting of: PTFE/Leather packing	Part-no.: 0114-014513
Standard packing (for waterborne paint materials) Consisting of: PTFE packing	Part-no.: 0114-014559
Lower packing: Mixed standard packing (for solvent paint materials) Consisting of: PTFE/Leather packing	Part-no.: 0114-014512
Standard packing (for waterborne paint materials) Consisting of: PTFE packing	Part-no.: 0114-014558
Packings for high-strength and corrosion materials:	
Upper packing: Mixed high-strength packing (for solvent paint materials) Consisting of: PTFE(high-strength)/Leather packing	Part-no.: 0114-016272
High-strength packing (for waterborne paint materials) Consisting of: PTFE(high-strength) packing	Part-no.: 0114-016262
Lower packing: Mixed high-strength packing (for solvent paint materials) Consisting of: PTFE(high-strength)/Leather packing	Part-no.: 0114-016273
High-strength packing (for waterborne paint materials) Consisting of: PTFE(high-strength) packing	Part-no.: 0114-016263

Note:

To the high-strength packings graphite is added to the PTFE. This improves the lubrication qualities. High strength packings are not recommended for bright finish paint. Graphite can change the colour of the finish paint.

If you need special packings without graphite admixture please contact your dealer.

Our pumps are supplied fitted with mixed packing for the application of solvent paint.



### 3. TECHNICAL DATA

BINKS		HP 4/32
Theoretical transmission		32 : 1
Air motor	Air inlet pressure	8 bar
	Diameter cylinder	85 mm
Material pump	Volume double stroke	27 ccm
	Operating pressure max.	256 bar
	Piston stroke	75 mm
	Free flow capacity nominal	1,6 ltr./min.
	Piston diameter D1	15 mm
	Piston diameter D2	21,5 mm
Connections	Air inlet	Stem for quick disconnection
		or R 3/8" (m)
	Air to gun (Aircombi only)	90° connection for hose 8x6
		or 1/4" NPS (m)
	Fluid outlet on HP-filter	1/4" NPS (m)
Dimensions of	L x W x D in mm	580 x 165 x 120
bare pump		

The nameplate on your outfit is attached to the spray material pump. Enter the data from the nameplate into figure 3. Have this information ready when you call customer service.

Figure 3

ITW Finishing Systems and Products Ringwood Road, Bournemouth BH11 9LH, England						
Druckluft ge Geräte-Typ Herstell-Nr./Baujahr Fördermenge/Doppelhub Materialüberdruck max. Lufteingangsdruck max.	triebene Kolbenpumpe PTFE Leder/PTFE Cm <sup>3</sup> Mat.Temp.max. bar Dersetzung Later :1					

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### 4. SAFETY

As well as the operating instructions and the applicable legal and other mandatory regulations relevant to accident prevention in the country of use and at the place of use, you must also observe the recognised special engineering regulations governing safe and professional working practices.

#### 4.1 PRINCIPLE OF OPERATION; INTENDED USE

- 1. BINKS airless spraying equipment has been built to comply with state-of-the-art standards and recognised safety rules. Nevertheless, its use may constitute a risk to life and limb for the user or for third parties, or cause damage to the BINKS airless pump and other assets.
- 2. The BINKS airless pump must only be used in technically perfect condition in accordance with the regulations and the instructions set out in the operating instructions and only by safetyconscious persons fully aware of the risks involved. Any malfunctions, especially those affecting safety, must be rectified immediately. The spray material line must not be dragged across sharp-edged objects and must always be checked before use to ensure that it is in perfect condition.
- 3. BINKS airless pumps are designed exclusively for the designated use stated in Section 1. Using them for purposes other than those mentioned is considered contrary to the intended use. The manufacturer/supplier cannot be held liable for any damage resulting from such use. The user alone must bear the risk.
- 4. The manufacturer is not liable for any unauthorised modifications or repairs made to the BINKS airless pump.
- 5. In accordance with the professional association directives governing spray equipment, ZH 1/406, paint spraying equipment should be checked by experts on request, or at least every 12 months, to ensure that there is no risk involved in its continued operation. If the units are idle, the examination can be delayed until the next period of operation. The operator is obliged to register the equipment for testing and to keep written records of the results of such testing.

#### 4.2 SAFE WORKING CONDITIONS

- 1. The requirements of the (German) accident prevention and safety regulation "Working with surface coating compounds" (VBG 23) and the (German) directives governing spray equipment (ZH 1/406) and static electricity (ZH 1/200) provided by the professional associations, must be observed.
- 2. Every person using a BINKS airless pump must have read and understood the operating instructions, in particular the chapter on "Safety".
- 3. If work is to be carried out in enclosed areas, effective, technical ventilation must be provided.
- 4. Use only those spray material lines and airless guns that are designed for use at the relevant maximum permitted working pressure of the spray material pump.
- 5. Be careful that there are no sources of ignition in the vicinity, for example, an open fire, sparks, glowing wires, hot surfaces, burning cigarettes, etc. There must be a distance of at



least 5 m between the spray jet outlet and any possible source of ignition (the spray mist is ignitable and there is a risk of fire or explosion).

- 6. The spray material leaves the nozzle under pressure. Do not direct the spray jet towards people or animals, as this could cause injuries. If the skin is broken and comes into contact with paint, lacquer or solvent, there is a risk of infection. Consult a doctor immediately to obtain professional, expert treatment. Tell the doctor which spray material or solvent is involved. Present the safety data sheet.
- 7. Be aware that working with sprays may produce vapours which can damage your health (see information on the safety data sheet and the tins of material). You must therefore use a personal breathing equipment, as indicated by the spray material manufacturer. Keep children and all people right away from the work area.
- 8. Keep the BINKS airless pump in a safe place to which children and unauthorised persons do not have access. Make sure that unauthorised personnel (and children in particular) cannot start up the BINKS airless pump.
- 9. Store the BINKS airless pump in a dry place.
- 10. Use only original BINKS accessories and original BINKS replacement parts.
- 11. Repair work must only be carried out by authorised specialised companies or by ITW You can obtain the addresses of specialised companies from ITW or from your specialised dealer.
- 12. When repairing and mounting the pump it is necessary that all connections are clean and mounted correctly.Before re-starting the pump the correct resistance (1 MΩ) must be measured.The resistance has to be determined between foot valve and upper top point of the pump.
- 13. You must be careful when carrying out spraying work, not to direct the jet towards the BINKS airless pump unit.
- 14. Dispose of cleaning and spraying material waste in accordance with the information provided by the respective spray material and solvent manufacturers.
- 15. If work is interrupted, to change the nozzle, for example, lock the safety lever on the airless gun. Release pressure from the system.



#### 4.3 PARTICULAR DANGER SPOTS

1. The flow of material escaping from the airless gun is under great pressure and thus has a powerful cutting effect.



You must therefore **never** point the airless gun at yourself or any other person, animal or plant. **Never** touch the spray jet with your fingers or hand, or hold them in front of the airless gun.

#### Note:

If the cutting effect of the flow of material causes injury **seek medical advice immediately**. Tell the doctor which spray material (paint) and/or solvent (thinners) was involved and provide the relevant information from the manufacturer as per the safety data sheet (supplier, his phone number, the material number).

- 2. The escaping spray material generates recoil power. You must therefore always hold the airless gun securely and make sure that you have a well-balanced stance.
- 3. In enclosed systems, or systems which are under pressure, where aluminium or galvanised parts come into contact with the liquid, there can be dangerous chemical reactions if 1.1.1 trichloroethane, methylene chloride or other solvents containing halogenated chlorinated hydrocarbons, are used.

If you use the named solvents or paints which contain these solvents, we recommend that you contact the spray material manufacturer or ITW Oberflächentechnik.

- 4. If there are malfunctions or obstructions, you must immediately shut off the compressed air supply at the ball valve. Disconnect the unit from the compressed air system, operate the airless gun and open the high pressure filter relief valve before removing the airless gun or the hose.
- 5. To prevent static charging from causing a fire or an explosion, the equipment must be properly grounded (the pump, the material tank, the object to be coated). If using materials with a flash point under 21°C of ignition group G1-G3, there must be an additional conductive connection between the material tank and the pump (potential equalisation cable). The material tank must always be made of metal.
- 6. Prevent spray back into a closed tank, as an ignitable gas/air mixture will build up. Take particular care with materials with a flash point less than 21°C
- 7. The A-weighted sound level of pumps may exceed 85 dB (A).

Local conditions may dictate a higher noise level, which could cause noise deafness. If this is the situation, operating personnel must be protected by suitable protective equipment or safety measures.



### 5. START-UP AND OPERATION

#### 5.1 GROUNDING THE BINKS AIRLESS PUMP



To prevent static charging igniting the flammable spray material, the BINKS airless pump must be grounded in accordance with professional association regulation ZH 1/200 (Germany), "Static Electricity", before it is started up. A grounding cable is included in the supply schedule.

- 1. Grounding wire has to be mounted on the grounding terminal of the high pressure filter or (if pump is used without HP-filter) on the middle section of the pump.
- 2. Connect the other end of the grounding cable to a suitable grounding device (e.g. grounding bar).

#### 5.2 PREPARING TO START UP THE BINKS AIRLESS PUMP

Proceed as follows:

- 1. Check that the lubrication chamber is full. To do this, open the screw plug on the filler neck of the lubrication chamber. If necessary, top up the lubricant (Order Code for solvent paint: 0114-009433, for waterborne paint: 0114-014871) and close the screw plug again.
- 2. Select a suitable filter cartridge using the table in section 2, Brief Description and insert it into to the high pressure filter.
- 3. Attach a suitable hose to the spray material line to the spray material outlet connection piece on the high pressure filter.



The spray material lines in the BINKS supply programme are identified on the screw fitting with the maximum permitted working pressure and the bursting pressure. The lesser value, the maximum permitted working pressure, must be greater than the maximum permitted working pressure of the spray material pump (see 3, Technical Data).

4. Connect the airless gun designed at least for the maximum permitted working pressure of the spray material pump, to the fluid hose.

We recommend for Airless: BINKS Airless spray gun HAP 50 with max. pressure 500 bar or BINKS Airless spray gun Airless 1 with max. pressure 420 bar.

We recommend for Aircombi: BINKS Aircombi spray gun AA 4000 with max. pressure 275 bar or BINKS Aircombi spray gun DSG-2000 with max. pressure 250 bar.

- 5. Make sure that the ball valve on the pneumatic drive is closed.
- 6. Connect the compressed air supply at the compressed air supply connection piece.
- 7. The airless pump is equipped with an air maintenance unit, consisting of filter, pressure regulator and fog lubricator. The air maintenance unit is intended for cleaning compressed air for workshop purposes from liquid and solid contamination, for pressure regulation and for providing a fine oil spray for lubrication of cylinders, valves etc.

Set the amount of oil (drops per minute) on the dosing screw as required during operation. The number of drops can be seen in the sight-glass.



The filter cleans the compressed air from water condensate, scale, rust particles etc. Drain off the water condensate at regular intervals and clean the sintered filter if it is dirty.

Before putting the pressure line into operation, relieve the filter regulator by fully unscrewing the regulating screw. Thereafter rotate the regulating screw clockwise until the pressure gauge on the filter regulator indicates the required pressure (please consider the min. and the max. data - see section 3 Technical Data).

#### 5.3 RINSING THE BINKS AIRLESS PUMP

#### Wear eye protection

Every BINKS airless pump is tested with water during final inspection and thoroughly rinsed with a non-gumming preservative oil. With this rinsing process, it is possible that the residual moisture of water emulsion will be left in the pump.

Before the unit is started up for the first time, a suitable solvent must be used to thoroughly rinse out the remains of the preservative fluid and the unavoidable impurities introduced during equipment assembly.

Proceed as follows:

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- 1. Prepare the BINKS airless pump for start-up in accordance with section 5.2.
- 2. Close the high pressure filter relief valve.
- 3. Immerse the spray material pump or the suction system in the tank of solvent.
- 4. Insert the high pressure filter return pipe into the tank of solvent. Open the high pressure filter relief valve.
- 5. Open the ball valve of the air supply and set the compressed air control valve on the pressure regulator to approximately 1 bar. The spray material pump or the suction system now draws in the solvent. The solvent runs back to the tank through the high pressure filter, the high pressure filter relief valve and the return pipe.
- 6. Point the airless gun into the tank. Unlock the safety lever on the airless gun, operate the airless gun trigger and close the high pressure relief valve. The solvent will now flow through the high pressure filter, the spray material line and the airless gun, back into the tank. The time of rinsing depends on the length of the material lines and the solubility of the spray material. We recommend a short reflush with "fresh" solvent.
- 7. Release the airless gun take-off.
- 8. Slowly increase the pressure at the compressed air control valve of the pressure reducer to maximum working pressure (see section 3, Technical Data), while checking and testing that all lines and screw and plug caps are tightly sealed. If there are any leaks in the system, shut down the BINKS airless pump immediately. Only re-start the BINKS airless pump once you have repaired the leak.
- 9. Reduce the pressure at the compressed air control valve of the pressure reducer again and close the ball valve.



- 10. Make sure that the return pipe is still directed into the solvent tank. Carefully open the high pressure filter relief valve to reduce the pressure in the spray material pump and in the high pressure filter.
- 11. Point the airless gun into the tank of solvent and operate the trigger, to reduce any pressure which may still exist in the spray material line and in the airless gun.



If working with waterborne spray material, the BINKS airless pump must again be thoroughly rinsed with water before it is started up.

#### 5.4 PREPARING AND ADJUSTING THE SPRAY MATERIAL

To be able to work without trouble and obtain a perfect surface, special care must be taken in preparing and adjusting the lacquers and paints (please contact spray material manufacturer).

Before starting to spray, it may be necessary to use the solvent prescribed by the manufacturer to thin the spray material. Add thinners until, after a good stir, the spray material runs easily off the stick used for stirring. To prevent any uncertainty, we recommend that you use a dip measuring cup, where the run-out time of the spray material indicates whether the spray material is still too thick and therefore whether it is necessary to add more thinners. According to experience, the flow time for lacquers and paints is 18 to 22 DIN4 sec. and for effect lacquer and coating filler materials 25 to 50 DIN4 sec. These figures relating to DIN EN ISO 2431 and have been established at a temperature of 20°C. The lacquer and paint manufacturers generally state the best spraying consistency for each of their products. If you use motor driven mixers, you must ensure that no air bubbles form in the spray material.

To take a measurement, proceed as follows:

Immerse the measuring cup into the lacquer or paint which is ready for spraying until it is full to the brim. To make the measurement, quickly take out the dip measuring cup and count how many seconds it takes for the entire contents of the cup to run through the 4mm nozzle, i.e. up to the time when you can establish the break-off point of the out-flowing paint. Count off the seconds on a wristwatch, or time with a stopwatch. If, for example, a consistency of 19 DIN4 sec. is prescribed, but the measurement is 24 DIN4 sec., you must add some more thinners and make the measurement again.

We recommend that once you have used it, you clean the dip measuring cup immediately, so that it can be used again for the next measurement.

Because two filters are used in the BINKS airless unit, a suction filter and the high pressure filter, it is not necessary to filter the spray material before working with it.

If particularly high-quality coating work is involved, you can also use a gun filter from the BINKS accessories range.

#### 5.5 START-UP

1. Prepare the BINKS airless pump for start-up in accordance with section 5.2 and if necessary, rinse in accordance with section 5.3.



- 2. Close the high pressure filter relief valve.
- 3. Immerse the spray material pump or the suction system in the spray material to be used for working.
- 4. Place the high pressure filter return pipe in the tank. Then open the high pressure filter relief valve.
- 5. Open the ball valve for the compressed air supply and use the pressure regulator to set the compressed air supply to 1 bar. The material spray pump will now draw in the spray material. The spray material flows back into the tank through the high pressure filter, the high pressure filter relief valve and the return pipe.
- 6. Point the airless gun into the tank. Unlock the safety lever on the airless gun. Operate the airless gun take-off and close the high pressure relief valve. The spray material will now flow through the high pressure filter, the spray material line and the airless gun, back into the tank.
- 7. Release the airless gun take-off and set the working pressure at the pressure control valve of the pressure reducer.3

Before carrying out any coating work, we recommend a test spray (e.g. on to paper or wood). Only if the test gives you the desired result should you start to coat the actual object. Make sure that the edges and the fringe areas of the object to be coated are also given an even coating.

#### 5.6 WORK STOPPAGES

- If working with 2-K spray material, you must note the given pot life and follow it precisely. Within this time, the unit must be carefully cleaned and rinsed with the recommended solvent. There must be no residue left in the spray material pump, the high pressure filters or the airless gun.
  - When work is stopped, the safety lever of the airless gun must be locked.

For work stoppages of between 10 and 30 minutes, please proceed as follows:

$\wedge$	Wear eye protection
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- 1. Lock the safety lever on the airless gun.
- 2. Shut off the compressed air supply by closing the ball valve.
- 3. Briefly open the high pressure relief valve, taking care that the return pipe is not pointed at other people or at yourself, until the pressure has reduced. Then close the high pressure relief valve again.
- 4. Clean the outside of the airless nozzle from spray material residue.



### 6. SHUT-DOWN

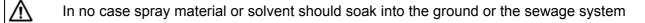
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Once work is completed, the BINKS airless unit must be thoroughly cleaned. Under no circumstances must you allow paint residue to dry out in the unit. To clean the airless unit, use a solvent appropriate to the spray material.

#### Wear eye protection

- 1. Close the ball valve for the compressed air supply.
- 2. Make sure that the return pipe is still directed into the spray material tank. Carefully open the high pressure filter relief valve to reduce the pressure in the spray material pump and in the high pressure filter.
- 3. Point the airless gun into the tank of spray material and operate the take-off to reduce any pressure which may still exist in the spray material line and in the airless gun.
- 4. Lock the safety lever on the airless gun.
- 5. Remove the spray material pump or suction system from the spray material.

### 7. CLEANING YOUR BINKS UNIT



#### Wear eye protection

- 1. Clean the pump and the suction system from the outside. Immerse the spray material pump or the suction system in the tank of solvent.
- 2. Clean the fluid tip / tip system as described in the service bulletin of the spray gun. We recommend to soak the fluid tip in solvent.
- 3. Unlock the safety lever of the airless gun without fluid tip but with mounted tip system or tip guard. Operate the gun. Close the high pressure filter relief valve. Set the incoming air pressure to max. 2 bars and open slowly the ball valve. Let the solvent runs through the system so that the spraying material could rinse out.
- 4. Let the solvent runs through the system for a couple of minutes until the solvent runs clear through the airless gun. Close the ball valve and lock the safety lever of the gun
- 5. Clean the airless gun from the outside and check the filter on the handle (if mounted).
- 6. Clean the filter element of the high pressure filter.
- 7. Clean the filter on suction pipe.
- 8. We recommend to keep the equipment filled with liquid.

We recommend to preserve the BINKS airless equipment if it is not used for a longer period of time. Please rinse the complete system with silicon-free oil as described in section 5.3.



# 8. MALFUNCTIONS, POSSIBLE CAUSES AND REMEDIAL MEASURES

In case of a break down of your equipment please contact your dealer or the manufacturer of the unit who will lead a professional repair.

Type of defect	Appearance of de- fect	Possible cause	Remedy
No flow through BINKS airless pump.	Spray material pres- sure drops.	No compressed air.	Check compressed air supply.
	BINKS airless pump does not start.	Nozzle on airless gun blocked.	Clean or replace noz- zle.
Reduction of area.		Pipeline kinked, pressure controller contaminated.	Check lines. Clean pressure control valve.
	Air motor controller blocked.	Contaminated com- pressed air.	Filter compressed air.

### 8.1 COMPRESSED AIR SUPPLY UNIT

### 8.2 PNEUMATIC DRIVE AND CONTROL SYSTEM UNIT

Type of defect	Appearance of de- fect	Possible cause	Remedy
Erratic operation, number of strokes reduced, pneumatic	Faulty piston valve.	Wear.	Replace parts.
drive stops.		Foreign matter in the control system.	Remove foreign mat- ter, replace faulty parts.
Pneumatic drive frozen up.		Compressed air too damp.	Install water separa- tor.
		Condensation in the compressed air sup- ply.	Check compressor.
		Too many strokes.	Use smaller spray nozzle.
			Modify working condi- tions.
			Install oiler.
			Reduce air pressure.



6.3 SFRAT MATERIAL FUMF UNIT						
Type of defect	Appearance of de- fect	Possible cause	Remedy			
Material coming from the spray material chamber.		Upper packing of spray material pump faulty.	Replace spray mate- rial pump packing.			
BINKS airless pump runs non-stop.	BINKS airless pump runs on despite stop- ping spraying.	Lower packing of spray material pump faulty	Replace spray mate- rial packing.			
BINKS airless pump does not stop on	Foot valve or plunger valve faulty or stuck.	Wear.	Replace parts.			
down-stroke.	valve laulty of Stuck.	Dried material.	Careful cleaning nec- essary.			
BINKS airless pump does not stop on up-	Foot valve or plunger valve faulty or stuck.	Wear.	Replace parts.			
stroke.		Dried material.	Careful cleaning nec- essary.			
Spray material es- cape at double piston.	Grooving in the slide faces.	Wear.	Replace parts.			

#### 8.3 SPRAY MATERIAL PUMP UNIT

### 8.4 SUCTION SYSTEM UNIT

Type of defect	Appearance of de- fect	Possible cause	Remedy
BINKS airless pump works erratically.	Suction screen blocked.	Spray material con- taminated.	Clean or replace suc- tion screen.
BINKS airless pump runs, but there is no flow.	No suction power.	Suction filter dirty. Foot valve ball sticks to valve seat. Suction system not properly screwed down. Spray material pump draws air, screw down properly.	Clean. Make practicable.



### 9. INSTRUCTION MANUAL

Depending on the type of application and the place of installation, the operator must use the operating instructions to provide more details on the safe operation of the BINKS airless pump, in the form of an instruction manual in the language of the workforce. This instruction manual is to kept in a suitable location at the place of work and the workforce informed of its whereabouts. The workforce should comply with the instructions contained in this instruction manual.

### **10. COMPULSORY TESTING**

In accordance with the professional association directives governing spray equipment

ZH 1/406, paint spraying equipment should be checked by an **expert** on request, or at least every 12 months, to ensure that there is no risk involved in its continued operation. If the units are idle, the examination can be delayed until the next period of operation. The operator is obliged to register the equipment for testing and to keep written records of the results of such testing.

An **expert** is someone whose professional training and experience has given him adequate knowledge and understanding of jet stream units and who is sufficiently acquainted with the relevant national health and safety and work and accident prevention regulations, directives and generally recognised technical regulations, that he is able to assess whether jet stream units are safe to operate.

The employer (operator) must make sure that **test results** for each jet stream unit are kept as a **written record** and that this is retained until the next text. We provide a blank "Test record for spraying equipment" form for this purpose. Please make as many copies of this as you need.

Furthermore, you must ensure that this test document is available at the place where the jet stream unit is in use. A copy of the test record or a test plaque is sufficient for this.

But we also ask you to enter the test document, date and expert in the "Test Document" table.



### **11. TEST DOCUMENTS**

# Test record for spraying equipment

<b>S</b> BINKS	ITW Finishing Systems and Ringwood Road, Bournemo 9LH, England			nemouth BH11	Date:		
					Examiner:		
DEALER STAMP:			ADDRESS OF OPERATOR: Name: Street: Postcode/Town: Contact:				
Tested unit:		_					
Manufacturer:				qptNo.:			
Type:			Ye	ear of manufacture:			
System components used: O Airless pump O Airless gun O Spray material line				Pump head	Cart C Triprod C Wall bracket C	)	
Tested components	C	complie	S	not tested	does not comply	retrofit recom- mended	
General condition of system							
<u>Jet stream unit</u>							
Equipment name plate							
Safety valve							
Pressure gauge fitting							
Pressure relief valve							
Jet stream unit with heater							
Temperature limitation / control							
Temperature display							
Spraying device							
Max. pressure identification							
Equipment number identification							
Efficiency							
Safety equipment							
Hoses and fittings							
Hose identification							
Fitting identification							
<u>Grounding</u>							
Between components							
Overall system Measuring of resistance (1 $M\Omega$ )							
Operating instructions Function of the overall system							
User instructions							
Technical condition							
Safe condition							
Health and safety at work regulations							
Overall assessment of the examination							
Comments:				<u> </u>		I	



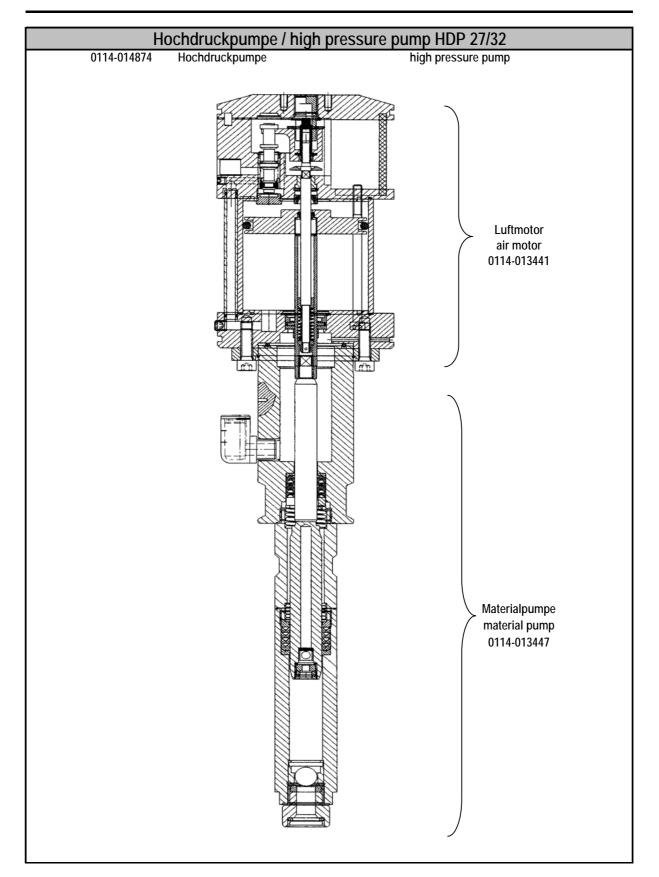
### **TEST DOCUMENTS**

Test document no.	Date of test	Expert		
		Company	Name	

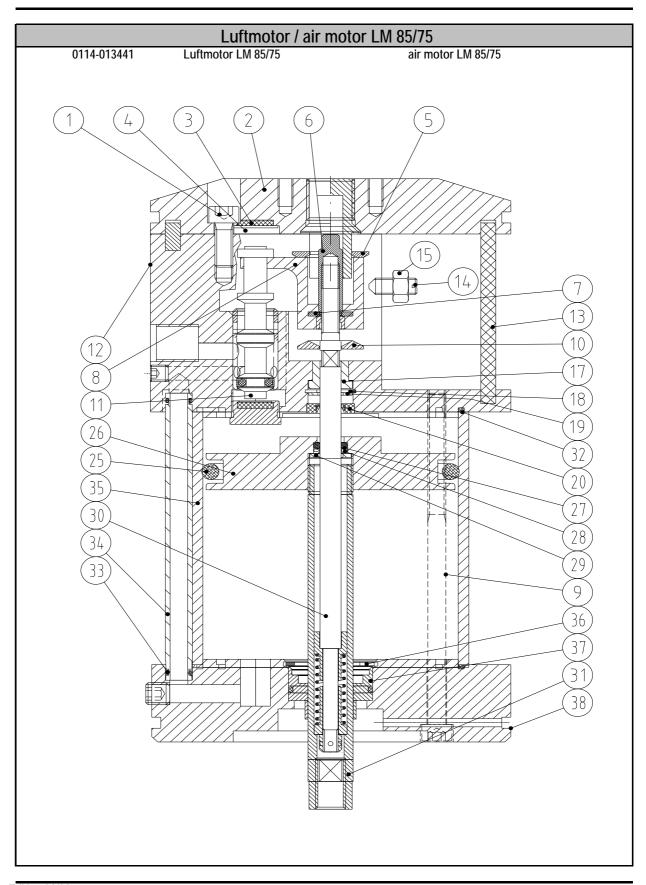
# 12. SPARE PARTS LISTS

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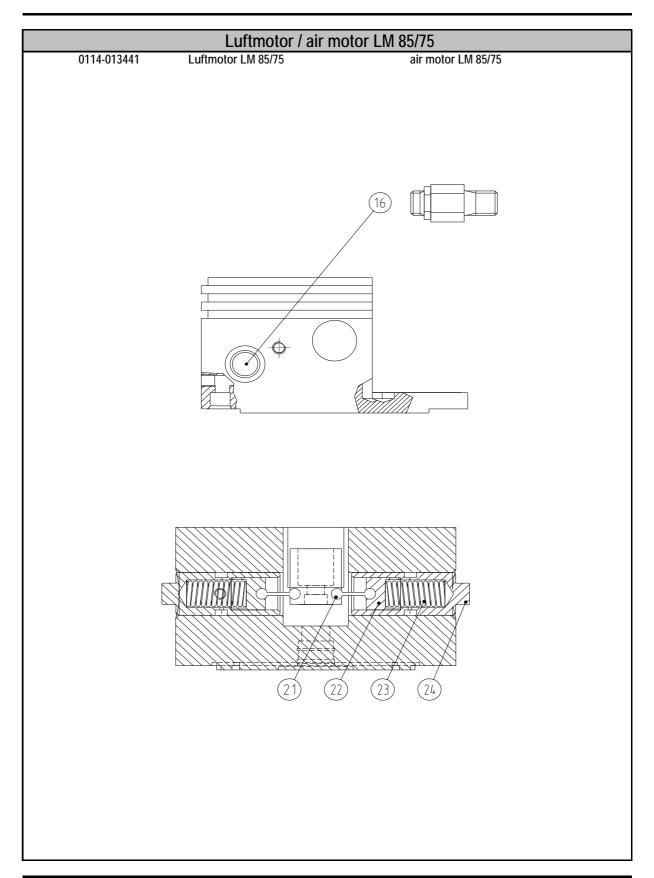










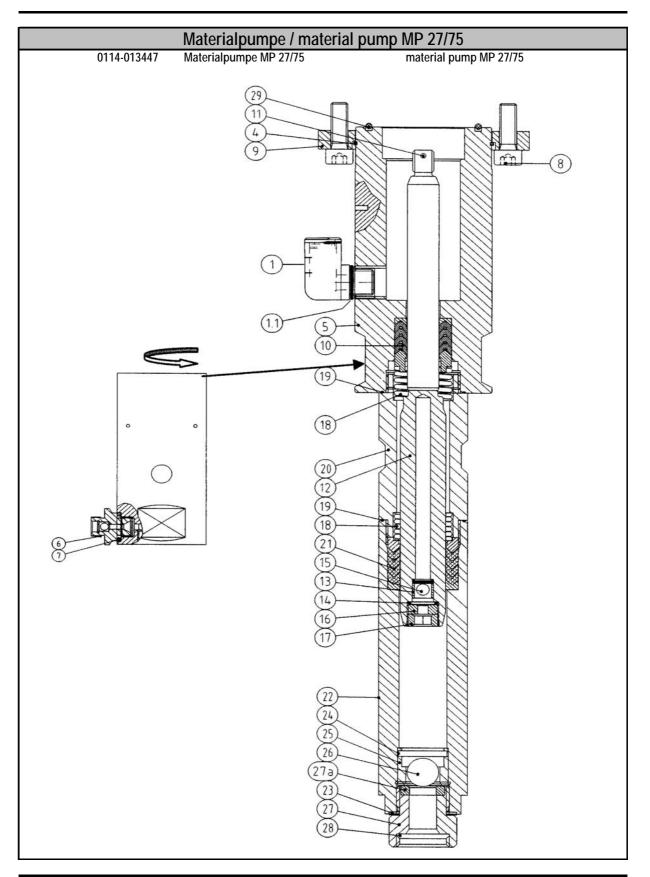




# Luftmotor / air motor LM 85/75

Pos.	ArtNr.	Bezeichnung	Description		Stück Pcs.	D/R
	0114-013441	Luftmotor LM 85/75	air motor LM 85/75			
1	0114-014182	Schraube	corow		Λ	
1 2	0114-014182	Deckel kpl.	screw cover ass.		4 1	
3	0114-013442	Dämpfungsscheibe	dampening spacer		1	R
4	0114-014300	Zackenring	serregated washer		1	R
5	0114-014301	Dämpfungsscheibe	dampening spacer		1	R
6	0114-014298	Zapfen	bolt		1	
7	0114-014295	Scheibe	spacer		1	
8	0114-014341	Mitnehmer kpl.	carrier ass.	v	1	
9	0114-014584	Schraube	screw	v	4	
10	0114-014302	Dämpfungsscheibe	dampening spacer		1	R
11	0114-014302	Steuerkolben kpl.	control piston ass.	v	1	R
12	0114-014340	Oberteil kpl.	cylinder head ass.	v	1	
12	0114-013443	Dämmplatte	dampening plate		1	R
13	0114-014308	Gewindestift	threaded pin		2	ĸ
14	0114-014367					
		Mutter	nut		2	
16	0114-014774	Sicherheitsventil	safety valve	v	1	
17	0114-014296	Bundbuchse	shoulder bush	V	1	R
18	0114-014307	Sicherungsring	retaining ring		1	R
19	0114-014409	Scheibe	spacer		1	
20	0114-013956	Nutring	u-seal	V	1	D/R
21	0114-014305	Schnepper	toggle	V	2	
22	0114-014340	Schnepperlager	toggle bearing	V	2	
23	0114-014032	Druckfeder	spring	V	2	
24	0114-014297	Lagerbuchse	bearing bush		2	
25	0114-014466	O-Ring	o-rin	V	1	D/R
26	0114-014767	Kolbenplatte	piston plate		1	
27	0114-013953	O-Ring	o-ring	V	1	D/R
28	0114-014765	Führungsring	guide ring		1	R
29	0114-014766	Scheibe	spacer		1	R
30	0114-014410	Umsteuerachse kpl.	guide axle ass.	v	1	R
31	0114-014412	Motorachse	motor axle	v	1	
32	0114-014467	O-Ring	o-ring	v	2	D/R
33	0114-014308	O-Ring	o-ring	V	4	D/R
34	0114-014413	Belüftungsrohr	air inlet pipe		2	
35	0114-014582	Zylinder	cylinder		1	
36	0114-014355	Sicherungsring	retaining ring		1	D/R
37	0114-014468	Führungsbuchse kpl.	guide bush ass.	v	1	D/R
38	0110-013444	Unterteil kpl.	bottom ass.		1	
	0114-014530	Dichtungssatz	seal kit			D
	0114-014734	Reparatursatz	repair kit			R
		Verschleißteil	wearing part	V		



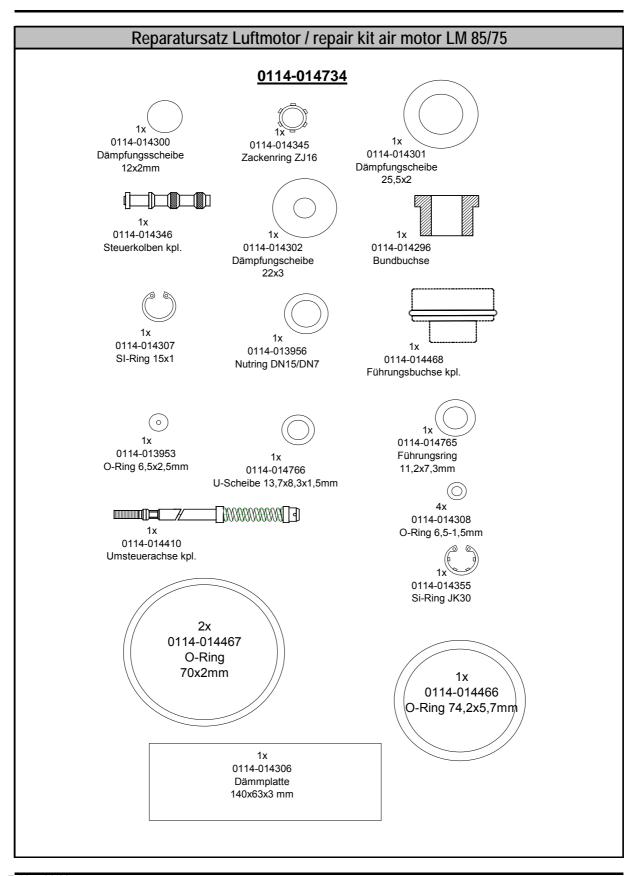




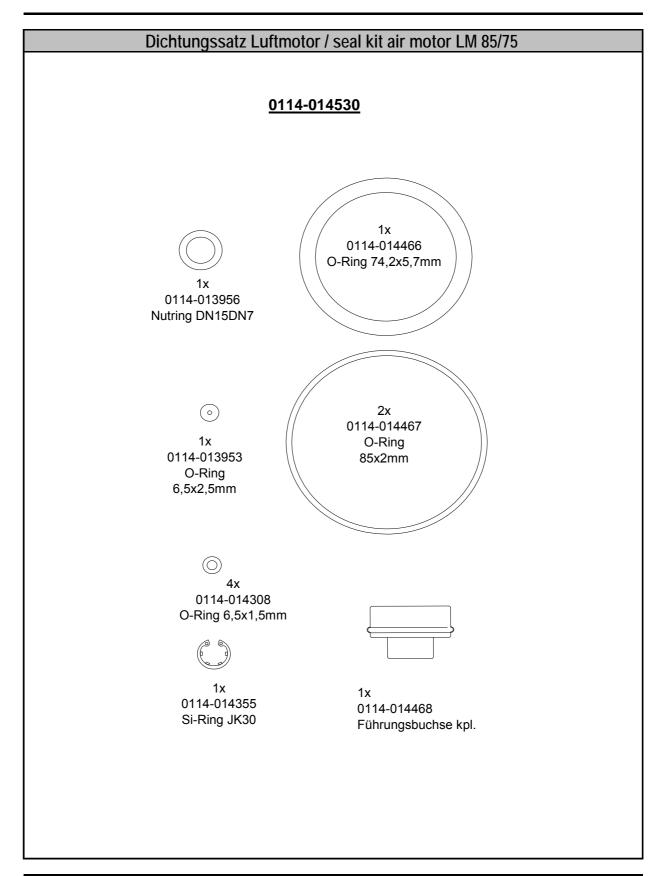
Pos.	ArtNr.	Bezeichnung	Description		Stück	D/R					
	neu				Pcs.						
	0114-013447	Materialpumpe MP 27/75	material pump MP 27/75								
1	0114-014561	Einfüllstutzen kpl.	insert gauge cpl.		1						
1.1	0114-013670	Winkel	elbow		1						
1.2 1.3	0114-013671 0114-013520	Verschlussschraube	closing screw		1						
4	0114-013520	Langnippel Sicherungsring	nipple retaining ring		1 1	R					
4 5	0114-014384	Hochdruckkopf	pump head		1	к					
6	0114-014751	Rückschlagventil kpl.	non return vale		1						
7	0114-013952	Dichtung	gasket		1	D/R					
8	0114-014199	Schraube	screw		4	DIK					
9	0114-014314	Anzugring	connecting ring		1						
10	0114-014513	Packung gemischt kpl. oben	upper packing mixed cpl.	v	1	R					
wahlw.	0114-014559	Packung PTFE kpl. oben	upper packing PTFE cpl.	v	1	R					
wahlw.	0114-016272	Packung hochfest gemischt kpl. oben	upper high-strength packing mixed cpl.	V	1						
wahlw.	0114-016262	Packung hochfest kpl. oben	upper high-strength packing cpl.	V	1						
11	0114-014161	Sicherungsfeder	locking spring		1	R					
12	0114-014605	Doppelkolben	dual piston	v	1						
13	0114-014508	Kugelanschlag kpl.	ball stop assembly		1	R					
14	0114-014527	Dichtung	gasket		1	D/R					
15	0114-014745	Kugel	ball	v	1	R					
16	0114-014034	Ventilplatte	valve seat	v	1						
17	0114-013863	Schraube	screw		1						
18	0114-014480	Druckfeder	spring		2						
19	0114-011284	O-ring	o-ring		2						
20	0114-011282	Federgehäuse	spring housing		1						
21	0114-014512	Packung gemischt kpl. unten	lower packing mixed cpl.	v	1	R					
wahlw.	0114-014558	Packung PTFE kpl. unten	lower packing PTFE cpl.	v	1	R					
wahlw.	0114-016273	Packung hochfest gemischt kpl. unten	lower high-strength packing mixed cpl.	v	1						
wahlw.	0114-016263	Packung hochfest kpl. unten	lower high-strength packing cpl.	v	1						
22	0114-011283	Druckzylinder	pressure cylinder		1						
23	0114-014739	Dichtung	gasket		1	D/R					
	0114-014450	Zylinderstift	cylindrical pin		1	R					
25	0114-014738	Kugelführung	ball guide		1						
26	0114-014237	Kugel	ball	v	1	R					
27	0114-014741	Bodenventil kpl.	bottom valve	-	1						
28	0114-013834	Dichtung	gasket		1	D/R					
29	0114-014006	O-Ring	o-ring		1	D/R					
			g			2,1					
	0114-018597	Dichtungssatz	seal kit			D					
	0114-013448	Reparatursatz (Packung gem.)	repair kit (packing mixed)			R					
	0114-016006	Reparatursatz (Packung PTFE)	repair kit (packing PTFE)			R					
						, î					
		Verschleißteil	wearing part	v							
		Verseniensten		v							

# Materialpumpe / material pump MP 27/75

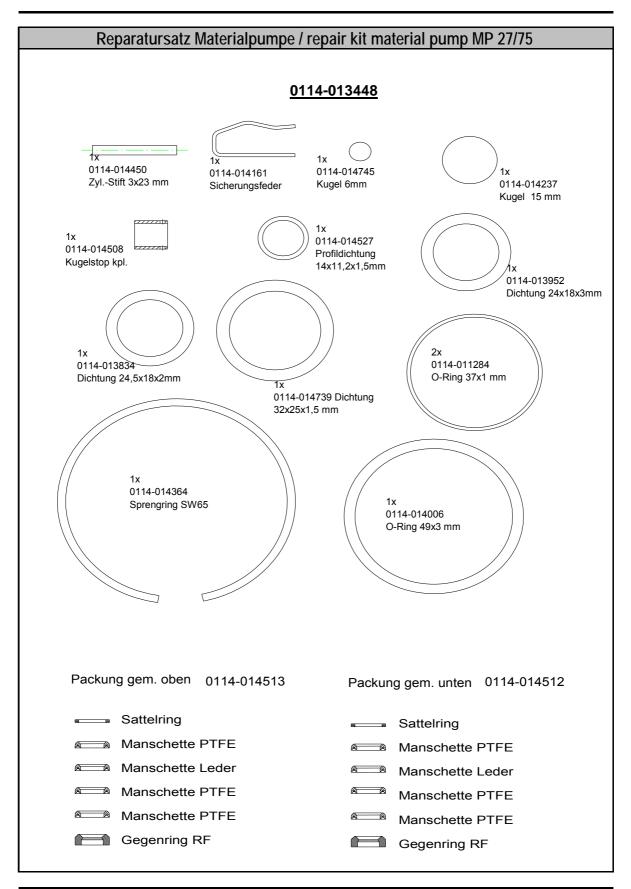






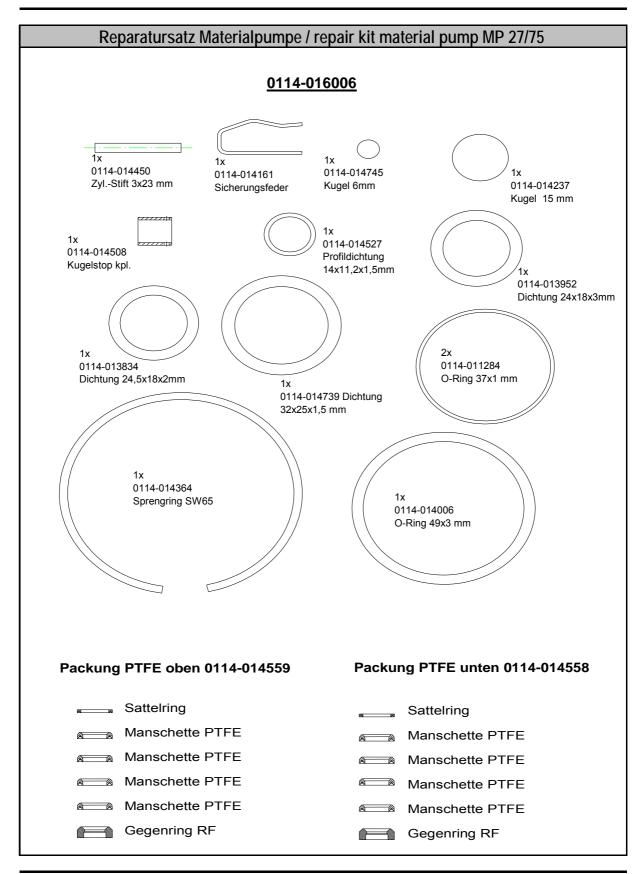






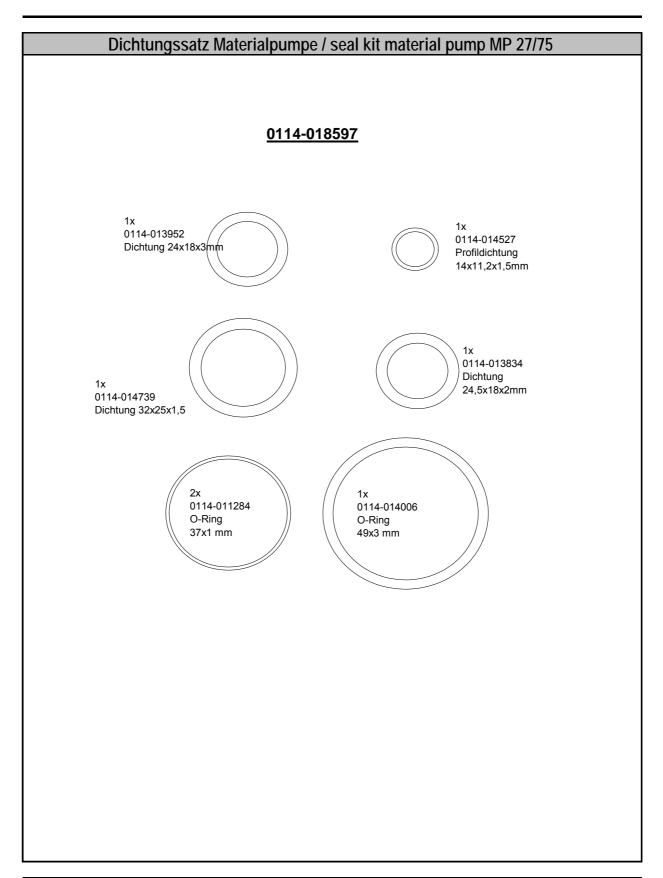
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	Ersatzteile Fahrgestell / spare parts trolley				
Pos.		ArtNr.	Bezeichnung	Stk. pcs.	Description
1 2 5-11 5 7 8 9 10 11	o.Abb o.Abb	0114-019203 0114-014640 0114-014057 0114-014806 0114-019005 0114-014216 0114-014164 0114-014165 0114-014179 0114-009743	Fahrgestell Typ 02 (M) Gestell Rad Wandhalter kpl. bestehend aus: Wandhalter Schraube Mutter U-Scheibe Zyl.Schraube Federring	1 2 1 4 4 4 4 4 4	trolley type 02 (M) frame wheel wall holder cpl. wall holder screw nut washer cyl.screw spring ring
		1 5 2			



	Ersatzteile Wandhalter / spare parts wall bracket				
Pos.	ArtNr.	Bezeichnung	Stk. pcs.	Description	
	0114-014806 0114-019005 0114-014179 0114-009743	Wandhalter Typ 02 (M) Wandhalter Schraube Federring	1 4 4	wall bracket assy. type 02 (M) wall bracket screw ring	



_				
		Ersatzteile Dreibein / spa	re par	ts triprod
Pos.	ArtNr.	Bezeichnung	Stk. pcs.	Description
	0110-011802 0114-009743 ZZ-1892-D	Dreibein kpl. Federring Zylinderschraube	4 4	triprod assy. spring washer cylinder screw



		Ersatzteile Behälter / spare	parts	container
Pos.	ArtNr.	Bezeichnung	Stk. pcs.	Description
	<b>0114-014613</b> 0114-014167	Behälter kpl. U-Scheibe	4	container assy. washer
1	0114-014179	Schraube	4	screw
1	0114-014445	Behälter	1	container
1				
1	0114-014447	Deckel, kpl.	1	cover, cpl.
1	0114-014200	Flügelschraube	3	wing screw
	0114-014521	Deckel	1	cover



	Druck	regler / air regulator G 3/8'	Aircombi
	0114-009350	Druckregler Aircombi	air pressure regulator Aircombi
Pos.	ArtNr.	Bezeichnung	Description
1 2 3 4 5 6 7	0114-13531-01 0114-009164 0114-009048 0114-009049 0114-014538 0114-021608 0114-014048	Druckluftregler kpl. Winkel Einstecknippel T-Stück Doppelnippel Kugelhahn Manometer	<ul> <li>2 air pressure regulator cpl.</li> <li>1 elbow</li> <li>1 nipple</li> <li>1 T-piece</li> <li>1 nipple</li> <li>1 relief valve</li> <li>2 gauge</li> </ul>



	Druckregler / air regulator G 3/8" Airless			
		Druckregler Airless	air pressure regulator Airless	
Pos.  1 1 1.1 1.2 1.3 2 3 4	ArtNr. 0114-13531-01 0114-014048 0114-020295 0114-014597 0110-009091 0114-014538 0114-021608	Bezeichnung Druckluftregler kpl. Manometer Druckreglergehäuse Knebelschraube mit Mutter Einstecknippel Doppelnippel Kugelhahn	Description         1       air pressure regulator cpl.         1       gauge         1       pressure regulator housing         1       t-handle with nut         1       nipple         1       Doppelnippel         1       relief pipe	

Γ



Pos.				
FUS.	ArtNr.	Bezeichnung	Stück Pcs.	Description
	0110-009130	HD-Filter 03 kpl. mit Sieb 100 M		HP-filter cpl. + filter insert 100 m
1	0114-016061	Dichtung	1	gasket
2	0114-016060	Feder für Siebeinsatz klein	1	spring for filter insert small
3	0110-009131	Siebeinsatz 50 M, SS		filter insert 50 mesh, SS
	0110-009132	Siebeinsatz 100 M, SS *	1	filter insert 100 mesh, SS
	0110-009133	Siebeinsatz 150 M, SS		filter insert 150 mesh, SS
	0110-009134	Siebeinsatz 200 M, SS		filter insert 200 mesh, SS
4	0114-014916	Siebeinsatz klein 30 M, blau		filter insert small 30 mesh, blue
	0114-014887	Siebeinsatz klein 50 M, orange		filter insert small 50 mesh, orange
	0114-014876	Siebeinsatz klein 70 M, gelb		filter insert small 70 mesh, yellow
	0114-014875	Siebeinsatz klein 100 M, schwarz *	1	filter insert small 100 mesh, black
	0114-014877	Siebeinsatz klein 150 M, rot		filter insert small 150 mesh, red
	0114-014878	Siebeinsatz klein 200 M, weiss		filter insert small 200 mesh, white
5	0114-016058	Einlaufverschraubung	1	inlet screwing
6	0114-016059	Auslassverschraubung	1	outlet screwing
7	0110-009065	Erdungsklemme	1	grounding clamp
8	0114-019090	Ablassverschraubung	1	outflow screwing
9	0114-019091	Kugelhahn	1	ball valve
10 11	0114-019092 0110-009103	Schlauchnippel Rücklaufschlauch	1 1	hose connection return flow hose
* standard	0110 007103	ruchiduschiduch	1	
  11				

Ersatzteile HD-Filter 03 / spare parts HP-filter 03



	ArtNr.	Bezeichnung	Stk. pcs.	Description
	0114-013525	HD-Filter Typ 01		high pressure filter type 01
1	0114-013725	Anzugmutter	1	retaining cap
2	0114-013841	O-Ring	1	o-ring
3	0114-014033	Feder	1	spring
4	0114-014916	HD-Sieb 30 M Kunststoff blau	1	filter insert 30 mesh blue
	0114-014887	HD-Sieb 50 M Kunststoff orange	1	filter insert 50 mesh orange
	0114-014876	HD-Sieb 70 M Kunststoff gelb	1	filter insert 70 mesh yellow
	0114-014875	HD-Sieb 100 M Kunststoff schwarz*	1	filler insert 100 mesh black*
	0114-014877	HD-Sieb 150 M Kunststoff rot	1	filler insert 150 mesh red
	0114-014878	HD-Sieb 200 M Kunststoff weiss	1	filler insert 200 mesh white
5	0114-013597	Anschlußnippel	1	connecting nipple
6	0114-014166	Schraube	1	screw
7	0114-009743	Federring	2	spring ring
8	0114-013730	Doppelnippel	1	male adaptor
9	0114-009908	CU-Dichtung	1	cu-gasket
10	0114-013952	Dichtung	1	gasket
11	0114-013855	Reduziernippel	1	reducing nipple
12	0114-014087	Kugelhahn	1	high pressure valve
13	0114-020027	Winkel	1	elbow
14	0114-019985	Schlauchtülle	1	hose nozzles
15	0110-009103	Rücklaufschlauch	1	return flow hose
16 tandard	0114-013728	Gehäuse	1	housing
$\begin{array}{c} 1 \\ 2 \\ 3 \\ 4 \\ 4 \\ 4 \\ 4 \\ 6 \\ 7 \\ 9 \\ 6 \\ 8 \end{array}$				



Ersatzteile Ansaugsystem / spare parts suction system				
ArtNr.	Bezeichnung	Description		
0110-011726	Ansaugsyst. NW 20 Dreibein	suction system DN 20 triprod		
0114-011515 0114-013734 0114-014112 0114-014068 0114-014221	Ansaugrohr NW 20 Saugglocke D 70 Materialsieb D 70 M 20 wahleise : Materialsieb D 70 M 50 Materialsieb D 70 M 70	suction tube filter housing strainer 20 mesh optional : strainer 50 mesh strainer 70 mesh		
0114-014080	Sicherungsring	safety ring		
	ArtNr. 0110-011726 0114-011515 0114-013734 0114-014112 0114-014068 0114-014221	Art-Nr.     Bezeichnung       0110-011726     Ansaugsyst. NW 20 Dreibein       0114-011515     Ansaugrohr NW 20       0114-013734     Saugglocke D 70       0114-014112     Materialsieb D 70 M 20       wahleise :     0114-014068       0114-014080     Sicherungsring		

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	Ersatzteile Ansaugsystem / spare parts suction system				
Pos.	ArtNr.	Bezeichnung	Description		
	0114-016023	Ansaugsystystem NW 20 Behälter	suction system DN 20 container		
1	0114-016022	Ansaugrohr NW 20	suction tube		
2	0114-013734	Saugglocke D 70	filter housing		
3	0114-014112	Materialsieb D 70 M 20	strainer 20 mesh		
-		wahleise :	optional :		
	0114-014068	Materialsieb D 70 M 50	strainer 50 mesh		
	0114-014221	Materialsieb D 70 M 70	strainer 70 mesh		
4	0114-014080	Sicherungsring	safety ring		
	0114-014685	Ansaugsieb kpl. M 20 (Standard)	suction housing cpl. 20 mesh (standard)		
		C=	- 3		
			- 4		



Ersatzteile Ansaugleitung / spare parts suction system							
Pos.	ArtNr.	Bezeichnung	St. Pcs.	Description			
1 2 3 4 5	0114-014844 0114-013801 0114-018506 0114-013734 0114-014112 0114-014068 0114-014068 0114-014221 0114-014080	Ansaugsystem NW 20 flexibel Reduziernippel Ansaugleitung NW 20 Siebgehäuse Materialsieb D 70 M 20 Materialsieb D 70 M 50 Materialsieb D 70 M 70 Sicherungsring	1 1 1 1	suction system DN 20 flexible reducing nipple suction hose DN 20 filter housing strainer 20 mesh strainer 50 mesh strainer 70 mesh retaining ring			



### 13. RECOMMENDED GUN

High Pressure	Max. Pressure	Recommended	Max. Pressure	
Pump	Pump (bar)	Gun	Gun (bar)	
HP 3/28		HAP 50	500	
Airless-Outfit	224	Airless 1	420	
HP 3/28	224	AA 4000	275	
Aircombi-Outfit		DSG-2000	250	
HP 4/20	100	HAP 50	500	
Airless-Outfit		Airless 1	420	
HP 4/20	100	AA 1500	105	
Aircombi-Outfit		AA 4000	275	
Aircombi-Outint		DSG-2000	250	
HP 4/32	256	HAP 50	500	
Airless-Outfit		Airless 1	420	
HP 4/32	256	AA 4000	275	
Aircombi-Outfit		DSG-2000	250	
HP 6/34	272	HAP 50	500	
Airless-Outfit		Airless 1	420	
HP 6/34	272	AA 4000	275	
Aircombi-Outfit		AA 4000		
HP 6/60	390	HAP 50	500	
Airless-Outfit		Airless 1	420	
HP 10/32	256	HAP 50	500	
Airless-Outfit		Airless 1	420	
HP 10/32	256	AA 4000	275	
Aircombi-Outfit		AA 4000	215	
HP 20/66	429	HAP 50	500	
Airless-Outfit			500	
HP 25/48	384	HAP 50	500	
Airless-Outfit	504	Airless 1	420	
HP 30/32	256	HAP 50	500	
Airless-Outfit	200	Airless 1	420	
HP 30/75	474	HAP 50	500	
Airless-Outfit	4/4	TIAF JU	500	



### 14. EC DECLARATION OF CONFORMITY

#### **ITW Finishing Systems and Products**

Ringwood Road, Bournemouth BH11 9LH, England

As the representative/manufacturer of the items listed below:

#### **High-Pressure Paint Pump Models BINKS**

### HP 4/20, HP 3/28, HP 4/32, HP 10/32, HP 6/34, HP 25/48, HP 6/60, HP 20/66, HP 30/32, HP 30/75

Declare, under our sole responsibility, that the equipment to which this document relates is in conformity with the following standards or other normative documents:

EN 13463 1:2009, EN 13463 5-2005, EN 982 :1996 + A1 :2008 and EN 12621 :2006

And thereby conform to the protection requirements of Council Directive 98/37/EC relating to *Machinery Safety Directive* and council Directive 94/9/EC relating to *Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres;* 



Issued on: 23/02/10

Authorised by:

Dave Smith General Manager

Edition 06/08



### **15. WARRANTY STATEMENT**

### 5 – Year HP Piston Pump Warranty

All Piston Pumps are backed by our 5-year warranty, as a measure of the confidence we place in the quality of these products - a confidence that you can share.

#### **BINKS HP Piston Pumps Five-Year Warranty**

**ITW Finishing Systems and Products** ("ITW") warrants to the original use purchaser of ITW manufactured HP Piston Pumps that ITW will repair or replace, free of charge, including return shipping costs within Europe, any such products which under normal use and service proves defective in material or workmanship, as determined by ITW inspection, within FIVE YEARS from date of shipment from ITW, provided the claimed defective product, or part thereof, is promptly returned to the ITW factory or ITW authorised warranty repair centre with transportation pre-paid.

This warranty does not cover failure of parts or components due to normal wear or damage, which in the judgement of ITW, arises from misuse, abrasion, corrosion, negligence, accident, substitution of non ITW parts, faulty installation or tampering.

If ITW inspection discloses no defect in material or workmanship, repair or replacement and return will not be covered by the ITW warranty.

This warranty covers ITW manufactured Piston Pumps manufactured and shipped on or after January 1<sup>st</sup>, 2004.

Equipment not covered by this ITW warranty such as accessories or components of equipment (switches, connections, fittings, hoses) which are sold by ITW are subject to the ITW Standard Terms of Sales & Delivery and the terms of the individual manufacturer.

The foregoing warranty supersedes, voids and is lieu of all or any other ITW warranties, express or implied, and no warranty or merchantability or fitness for particular purpose is intended or made. ITW's sole obligation and the original use purchaser's role remedy is as stated above and in no event shall ITW be liable for any special, direct, indirect, incidental, consequential or other damages, or expenses of any nature including, without limitation, loss of profits or production time incurred by the original use purchaser or any other party.

Authorised by:

David Smith General Manager

Edition 06/08