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OWNER'S MANUAL

SPIN BLAST- TOOL

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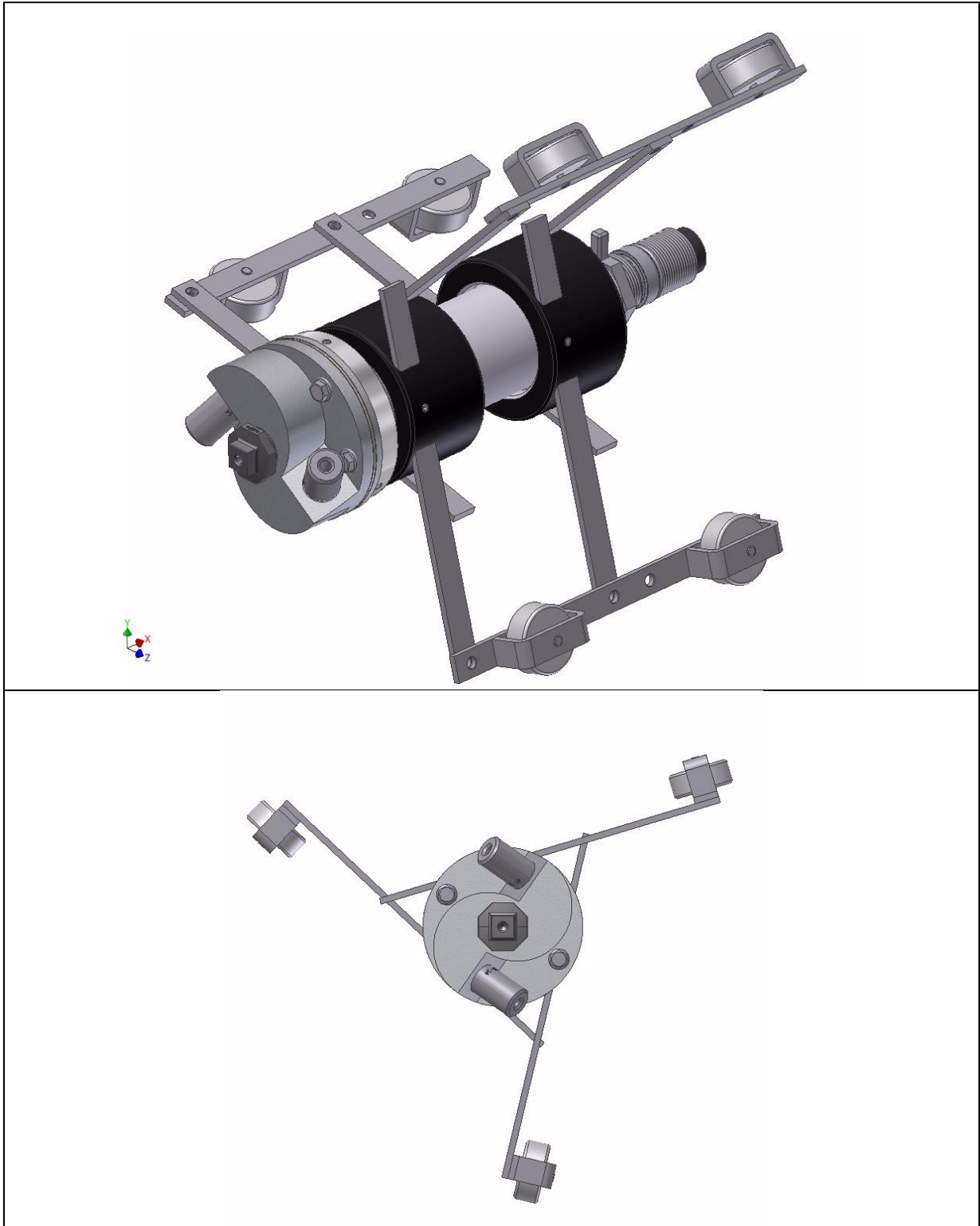
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1 Scope of manual

- This manual covers operation and maintenance for the SPIN-BLAST TOOL with rotating nozzle.
- Additionally the owner's manuals for the used blast machine should be considered.



Spin blast tool with carriage

2 Application and restrictions

Use of the Spin Blast tool requires the same equipment as any other abrasive blast cleaning operation, i.e. an air compressor and an abrasive blast machine.

The Spin Blast tool cleans the interior of metal pipes, concave blasting moulds, concrete and other round objects ranging in size from 8" to 36" I.D. with the standard tool or up to 60" I.D. with the use of optional 1 1/4" nozzle head.

The tool connects to most abrasive blasting machines in place of a standard nozzle.

Nozzle, carriage and compressor recommendations:

| pipe I.D. (inch/mm) | nozzle Ø X lenght (mm) | nozzles Part no. | nozzle head | carriage | compressor required | abrasives |
|------------------------|------------------------------|--------------------------|-------------------------|--------------------|--|------------------|
| | | | | | min. air volume (m ³ /min) | Grit size (µ) |
| 8" – 12" 200-300 | 6,5 x 45 | 2 x SB-13 Art.01408D | SB1 Art.02604D | SB19 Art.90037D | 7,0 | 400-800 |
| 8" – 12" 200-300 | 8,0 x 45 | 2 x SB-14 Art.01409D | SB1 Art.02604D | SB19 Art.90037D | 10,0 | 400-800 |
| 8" – 12" 200-300 | 9,5 x 45 | 2 x SB-16 Art.01411D | SB1 Art.02604D | SB19 Art.90037D | 17,0 | 400-800 |
| 12" – 24" 300-600 | 8,0 x 75 | 2 x SB-15 Art.01410D | SB1 Art.02604D | SB19 Art.90037D | 10,0 | 800-1200 |
| 12" – 24" 300-600 | 9,5 x 75 | 2 x SB-17 Art.01412D | SB1 Art.02604D | SB19 Art.90037D | 17,0 | 800-1200 |
| 24" – 36" 600-900 | 8,0 mm fine thread | 2 x SSR-5 Art. 04704I | SB1 large Art.10546I | large | 10,0 | 800-1200 |
| 24" – 36" 600-900 | 9,5 mm fine thread | 2 x SSR-6 Art. 04705I | SB1 large Art.10546I | large | 17,0 | 800-1200 |

Working pressure : 6 to 8 bar

Abrasives: All commercial mineral and metallic abrasives. The use of aluminium oxide or silicon carbide causes a intensive wear.

Following criteria are important for the use of Spin Blast tool::

1. Pilot tests for the surface finishing
2. Allowance on the blast machine

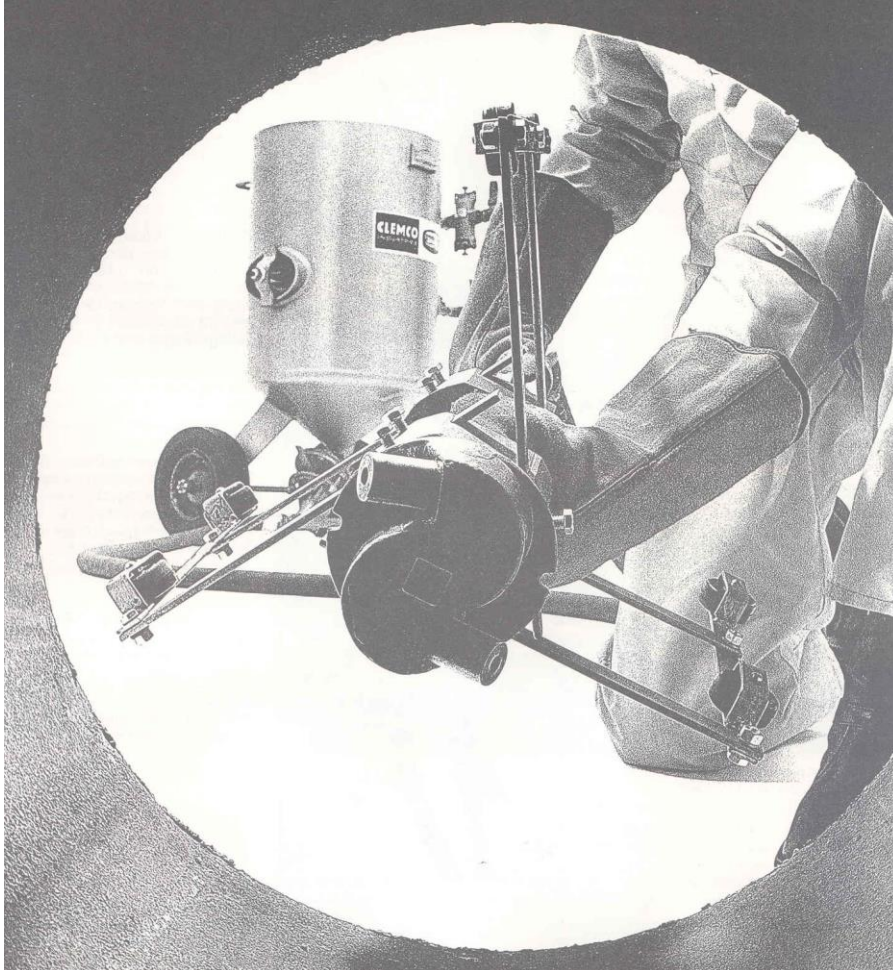
Note: We recommend a blast machine which achieves the following allowance:

- Separate connection for abrasive and air
- Control handle has to be disjoined from the abrasive hose
- Remote control
- Size of the blast machine must be aligned to order
- Blast hose or blast lance 1 1/4"
- see safety precautions - §4.5.

3 General description

3.1 Components

The system consists of: (see picture below)



1. -Blast machine with remote control
2. Spin - Blast tool with carriage
3. Blast hose / or blast lance of steel pipe/ 1 1/4"

3.2 Operation

- The unit must be positioned by pushing it into the pipe till the far pipe end.
- Start the blast process (release compressed air) and pull the unit (using the pipe lance) with the hose backwards (in direction blaster) through the pipe.
- The pulling speed is determined by the desired finishing.

3.3 How the system works

As the tool passes through the length of the pipe being cleaned, abrasive is ejected by two special nozzles mounted on a rotation head. A brake retards the rotation of the head to keep it at optimum blasting speed. A centering carriage holds the tool in position during pass. Two centering carriages and several sizes of nozzles are available. Recommended choices for various applications are given in the chart (see pg.3). The standard unit is shipped without nozzles.

4 Operation

4.1 Set-up for initial installation or reinstallation

- Consult the chart on pg.3 to determine the proper size carriage for your application. Adjust the carriage to the required size by expanding the scissor action.
- Connect the blast hose respective the blast lance.
- Position the Spin- Blast tool in the far pipe end
- Before beginning, rotate the Spin-Blast head by hand. It must not rotate freely – there must be some drag. Drag indicates that the leather dust seal which protects the bearings is under adequate pressure and that the brake will slow the rotating head to optimum blasting speed. If the head rotates freely, tighten the rubber-lined nipple at the rear of the unit. When drag is achieved, tighten down the steel locking nut to hold the nipple in place.

4.2 Function check (without abrasive)

1. Start abrasive unit (without abrasive)
2. Spin blast head must rotate constant (min. 3 minutes) and air comes out of the nozzles
3. only a somewhat air should come out of the end plate rear (item 9). When there comes out too much readjust rubber lined nipple (item.10= and lock nut item11).

4.3 Daily preparatory operations

- Put on the protective equipment (operator safety clothing such as blaster suit, blasthood with air supply, protective gloves etc.)
- Proper compressed air supply
- Connect the blast machine
- Function check
- Safety precautions (see §4.5)

4.4 Set-up and operation

- Secure activity area
- Position Spin - Blast tool in the pipe
- Turn on the equipment, that means.:
 1. + first connect air
 2. + then add abrasive to the air
- Pull the Spin–blast tool back towards you steadily and evenly. The speed is determined by the desired finish (high speed = just cleaning, example . fragments of paint and low speed = pipe becomes shiny, adequate for later coating).

After finishing the blast process

1. + first disconnect abrasive
2. + than air supply.

IMPORTANT:

The leather dust seal (item 22) must be kept under adequate pressure and must never be allowed to wear through. We recommend a 15 to 60 min. control cycle depending on abrasive and working pressure, that means you must inspect and tighten the rubber lined nipple (item10) and the lock nut (item 11).otherwise severe damage will result to this tool.

4.5 Safety precautions

Do not approach the Spin Blast tool from the side when it's moving, abrasive comes out laterally. Do not let the spinning nozzles touch the surface being cleaned.

All common precautions from abrasive tools should be taken, that means:

Start the unit just inside the pipe

Safe the working area from escaping abrasive and dust emissions
Attend the precautions for blast machines

4.6 Shut down after work

- No special precautions for the Spin–Blast tool.
- Attend the precautions for blast machines!

4.7 Shut down - transfer of the unit

- No special precautions for the Spin– last tool.
- Attend the precautions for blast machines!

5 Maintenance

- The leather dust seal (item 22) must be kept under adequate pressure and must never be allowed to wear through. We recommend a 15 to 60 min. control cycle depending on abrasive and working pressure, that means you must inspect and tighten the rubber lined nipple (item 10) and the lock nut (item 11).otherwise severe damage will result to this tool.
- Replace the nozzle head plug 1“(item 25) every eight hours, unless your experience indicates a longer or shorter life. (The operating pressure, type of abrasive, and type of nozzle affect the war rate). Replace the nozzle head (item 1) when it wears out.
- Inspect the brake lining daily. Replace the brake before the lining wears so thin hat it damages the brake shoe or the brake housing.(see § 5.2)
- Replace the tungsten carbide washer (item 23) before it wears larger than opening in the tube (item 5).
 - **Important:**
- **Check the leather dust seal (22) for wear. A loose or worn dust seal could cause severe damage to the Spin-Blast tool in a matter of minutes.** (see § 5.1)

5.1 Replacement of the leather dust seal:

- Loosen the rubber lined nipple (item 10) and the lock nut (item 11)
- Unscrew the end plate rear (item 9). Be careful not to drop the tungsten carbide washer(item 23), it is extremely brittle.
- Clean the seal and lubricate it with fat or Vaseline.
- Insert a new leather dust seal. Mount coarse side in direction tungsten carbide washer (item 23), plane side in direction tube (item 5).

5.2 Replacement of the bracket:

Replace the nozzle head (item 1) when it wears out. When removing or replacing either the nozzle head or the plug, remove the set screw (item 7) in the brake housing (item 2) and insert a screw driver or other similar tool into the hole to prevent the tube casing from turning.

Turn off the nozzle head (to the left side) and remove the rest of the screws (item 18) of the brake lining. Now the brake can be exchanged.

6 TROUBLE SHOOTING (See chart below)

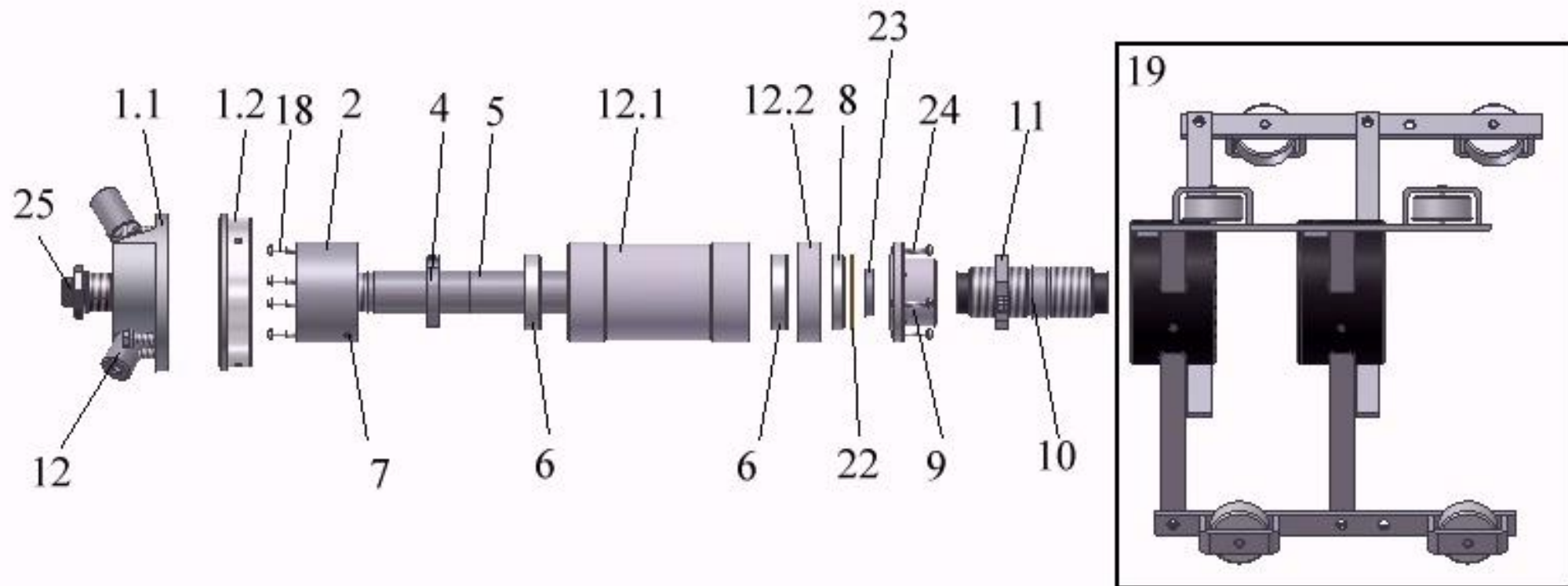
| PROBLEM | PROBABLE CAUSE | REMEDY |
|--|---|--|
| Abrasive or air escaping through relief holes in rear end plate. | 1. Leather dust seal is loose or worn. | 1. Check for wear and replace worn seal if necessary 2. Tighten rubber lined nipple (Item 11) |
| Nozzle head will not rotate or rotates too slowly. | 1. Insufficient air pressure 2. Plugged oiler or pressure regulator 3. Damaged bearings 4. excessive pressure on seals | 1. Increase pressure 2. Clean the oiler or pressure regulator 3. Replace bearings 4. Loosen rubber lined nipple (Item 11) |
| Nozzle head rotates too fast | 1. Worn out brake 2. nozzles are worn out 3. Drag is too loose | 1. Replace brake 2. Replace nozzles 3. Tighten rubber-lined nipple (item10) |
| Vibration | 1. One nozzle is plugged 2. Unbalanced nozzle orifices or length 3. Loose centring carriage | 1. Remove obstruction 2. Use identical nozzles (length & orifice) 3. Tighten all bolts on carriage |
| Tool runs hot | 1. Oil accumulation on brake bearing | 1. Clean brake lining |

7 Replacement parts

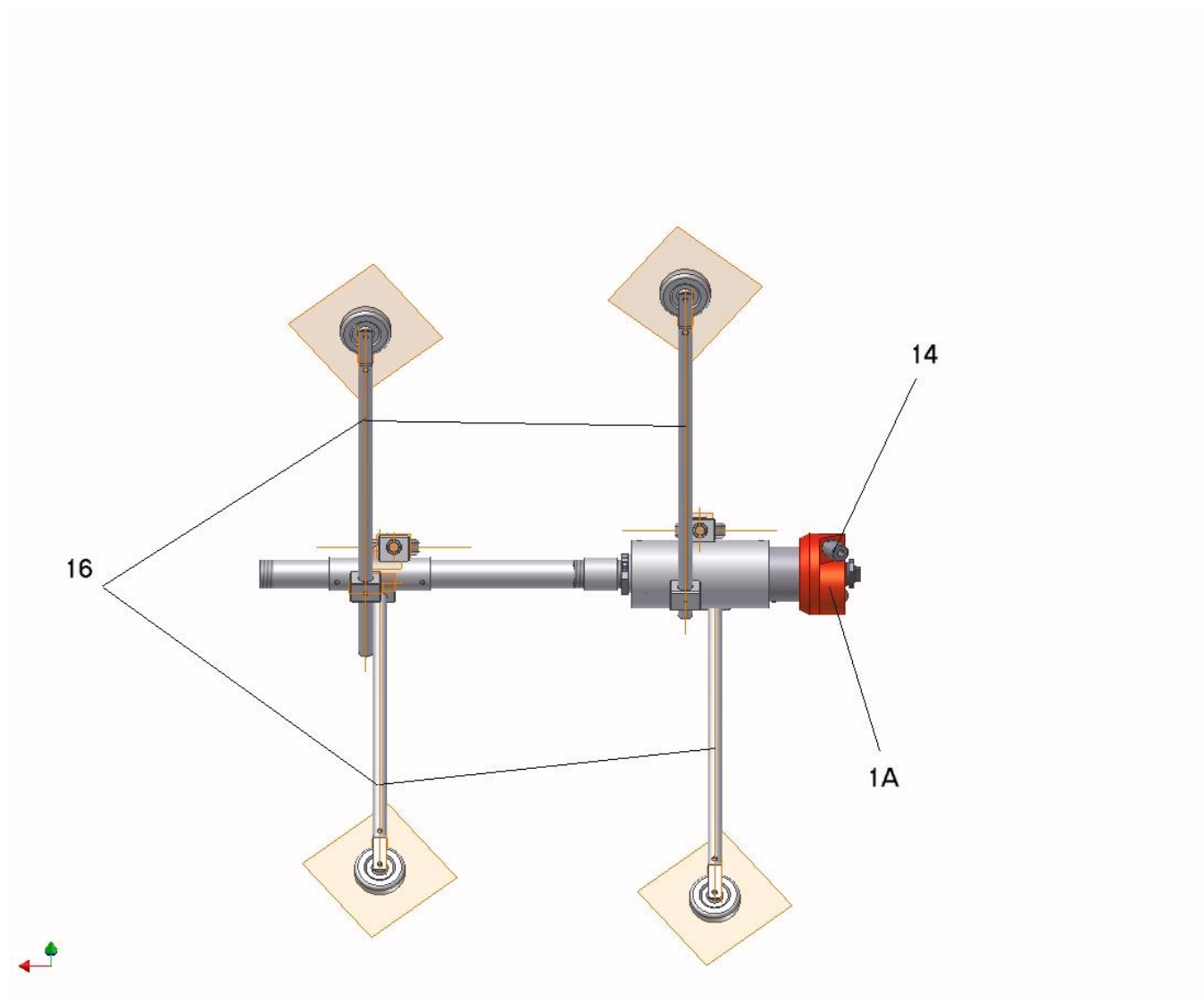
(see anexed pictures)

| Pos. | Part no.. | Model | Description | Quantity |
|--------------|------------------|--------------|---------------------------------------|-----------------|
| 1.1 1.2 | 02604D | SB-1 | Nozzle head | 1 |
| 1A | 10546I | | Nozzle head large | 1 |
| 2 | 02606D | SB-2 | Brake housing | 2 |
| 3 | | | Not existent | - |
| 4 | 02608D | SB-4 | Brake | 1 |
| 5 | 02609D | SB-5 | Tube | 2 |
| 6 | 02611D | SB-6 | Bearing | 2 |
| 7 | 03071D | SB-7 | Screw 4 mm | 1 |
| 8 | 02613D | SB-8 | Tube lock ring | 1 |
| 9 | 02615D | SB-9 | End plate rear | 1 |
| 10 | 02617D | SB-10 | Rubber lined nipple | 1 |
| 11 | 02618D | SB-11 | Lock nut | 1 |
| 12.1 12.2 | 02619D | SB-12 | Body | 1 |
| 13 | 01408D | SB-13 | Nozzle Ø 6,3mm x 45mm | 2 |
| - | 01409D | SB-14 | Nozzle Ø 8mm x 45mm | 2 |
| - | 01410D | SB-15 | Nozzle Ø 8mm x 75mm | 2 |
| - | 01411D | SB-16 | Nozzle Ø 9,5mm x 45mm | 2 |
| - | 01412D | SB-17 | Nozzle Ø 9,5mm x 100mm | 2 |
| (14) | 04704I | SSR-5 | Venturi nozzle fine thread 8mm | 2 |
| | 04705I | SSR-6 | Venturi nozzle fine thread 9,5mm | 2 |
| 15) | | | Not existent | |
| 16) | 10560I | | Carriage large for pipes 40" to 60" | 1 |
| 17) | | | Not existent | |
| 18) | 03892D | SB-18 | Screw 5 x 65 mm | |
| 19) | 90037D | SB-19 | Carriage complete for pipes 8" to 36" | 1 |
| 20) | 90036D | SB-20 | Screw 3mm | 1 |
| 21) | 02610D | SB-21 | Lock ring | 1 |
| 22) | 02614D | SB-22 | Leather seal | 1 |
| 23) | 02616D | SB-23 | Washer TC | 1 |
| 24) | 03891D | SB-24 | Screw 5 x 35 mm | |
| 25) | 01761D | SB-25 | Nozzle head plug1" | 1 |
| 26) | | | Not existent | |
| 27) | 02628D | SB-27 | Pin for brake | 1 |

| | | | | |
|---|--------|-----|--|---|
| - | 91011D | CFT | Cast iron coupling 1 ¼" | 1 |
| - | 90177D | | Wooden box | 1 |
| | 90497D | | Sleeve 1 ¼" | 1 |
| | 99803D | | Lance (pipe 1 ¼"x510mm-for Spin-Blast) | 1 |



Picture 2: Spin - Blast with carriage



Picture 3: Spin Blast with large carriage