



**MagnumVenusProducts™**

## **Turbo Autosprue – LOW PRESSURE (10bar) – HEAVY DUTY (30bar)**

- Low Pressure - 10bar Nylon Hose # **5855 – 5855-INV2**
- Heavy Duty - 30bar High Pressure Hose # **5856**
- TAS Spares Kit # **5858**

Turbo Autosprue also available as:

High Temperature - 30bar High Pressure Hose # **5856HT**

High Pressure / Double Acting - 110bar # **5856-HI PRESS/DA**



The Turbo Autosprue™ is designed to interface between RTM, LRTM or Infusion moulds and a Magnum Venus Products meter mix machine, or any other automatic unit designed for dispensing mixed resin.

## Connecting the TAS to the mould:

Ensuring that the nose o ring/s are in place, wipe some silicone grease over the o rings to help protect them from wear.

Use the Spring Clip #5834 to hold the TAS firmly attached to the Universal Mould Insert #6300

Once locked in position the TAS nose will be flush with the base of the **Locksert** and the mould face.

To check that the TAS is correctly locked in place, pull firmly whilst rotating the TAS body.

To remove the TAS from the Universal Insert, simply turn the Spring Clip through 90° and gently pull on the TAS body to release the nose.

## Operation:

**NOTE: The High Pressure / Double Acting version requires a Control Valve ( ASSY-0477)**

With the TAS firmly locked into the mould insert, connect the machine nozzle to the quick release input connector. Connect the red 4mm start pipe to the 4mm air fitting on the side of the TAS body.

Place the 10mm nylon drain pipe in a vented waste container **ensuring that it is firmly fastened** in the container to avoid the pipe becoming dislodged during flushing with solvent and air.

When the machine starts the TAS valve will open and allow free passage of resin mix into the mould. On completion of the injection the machine will close the TAS at the mould face and the mix-head, injection pipe and the internal fluid path of the TAS can be flushed and the waste solvent delivered to a vented waste container.

The TAS is suitable for use in vertical, upside down and horizontal positions, and tests have proven that the TAS operates and flushes efficiently with a long service life in all positions with all commonly used thermoset resin systems, whether filled or unfilled.

All tests have been conducted using one of Magnum Venus Plastech's injection machines fitted with the SP3 or SP4 non-pressurised solvent pump systems. In conditions of low air pressure (below 5.0 bar) efficient flush and cleaning may not occur and this can leave a build-up of catalysed resin within the valve, feed pipe and drain pipe. Ensure therefore that all flushing systems are maintained correctly and operated at the recommended supply pressure range of 6 - 7bar.

### SAFETY NOTE:

Ensure that relevant Personal Protective Equipment, especially eye protection, is worn when testing or servicing the Turbo Autosprue.

#### Note:

- **NEVER** - Operate TAS without sufficient cleaning/flushing solvent flow.
- **ENSURE** – The correct cleaning/flushing solvent pressure of at least 6 bar
- **IMMEDIATELY** - Renew nose outer red silicon seal (3265) if damaged
- **DO NOT** - Unlock or attempt to remove TAS from the mould:
  1. During the injection or flushing operation.
  2. Until the resin in the mould has cured.
- **ONLY USE** - Genuine spare parts from Magnum Venus Products.
- **RENEW** – Spring Clip if damaged or bent.

## Maintenance:

(Refer to drawing below)

*The Turbo Autosprue™ is designed to operate for several hundred injection cycles without any need for maintenance. After lengthy service (700-1200 cycles) we recommend that the following maintenance checks are carried out.*

### 1. TESTING THE SEALS.

Operate the valve between open and closed and check that the valve nose seal moves back and forward by 7- 8mm. If the movement of the nose seal is observed to be sluggish proceed to check, and if necessary replace, the main piston seal and / or the shaft seals.

### 2. CHANGING THE NOSE SEAL.

With the TAS closed (no open signal) operate the machine's flush cycle.

After 12 seconds and with the air-dry flush cycle still operating block the drain pipe outlet. This will pressurise the valve's fluid section and enable the observation of any air leakage out through the main nose seal # 5837.

Should any air leakage be present under these conditions replace the nose seal # 5837.

The integrity of the nose seal # 5837 is determined entirely by the tightness of the nose screw # 5832 as it compresses the nose seal against the washer # 6095 and the base of the shaft.

- CORRECT TIGHTENING of the nose screw will seal the nose.
- OVER TIGHTENING of the nose screw will seal the nose BUT prevent the nose seal moving back and forth between the seal surface of the nose # 5852 and the seal surface of the body # 5831.
- UNDER TIGHTENING of the nose screw will not seal the nose and it may leak solvent and air into the mould cavity and/or leak resin through to the flush outlet whilst injecting.

*To achieve the correct tightening of the nose screw we recommend the following actions:*

Assemble the nose seal # 5837 with the back-up washer # 6059 and the nose seal screw # 5832 as shown using a small amount of BLUE LOCTITE 243 on the end of the screw. Screw into the shaft end # 5828 until it is finger tight and meets some resistance.

At this point proceed to turn the screw a further ¼ to ½ turn ensuring that the shaft # 5828 does not turn at the same time. - To prevent the shaft from turning, apply 6 – 7 bar air pressure to the 4mm air fitting # 0645 on the side of the main body. This will open the valve and hold the shaft tight.

Immediately reassemble the valve and connect to the machine, and with the TAS out of the mould operate the flush cycle and observe that there is no leak of solvent, or air from the sealed nose.

To test the integrity of the nose seal, further pressure can be applied to the TAS by blocking the TAS drain pipe whilst the machine is flushing, this action will place the nose seal under full shop air pressure.

**NOTE: The flush line should only be blocked in this manner once the solvent has flushed through and the valve is only purging with air pressure.**

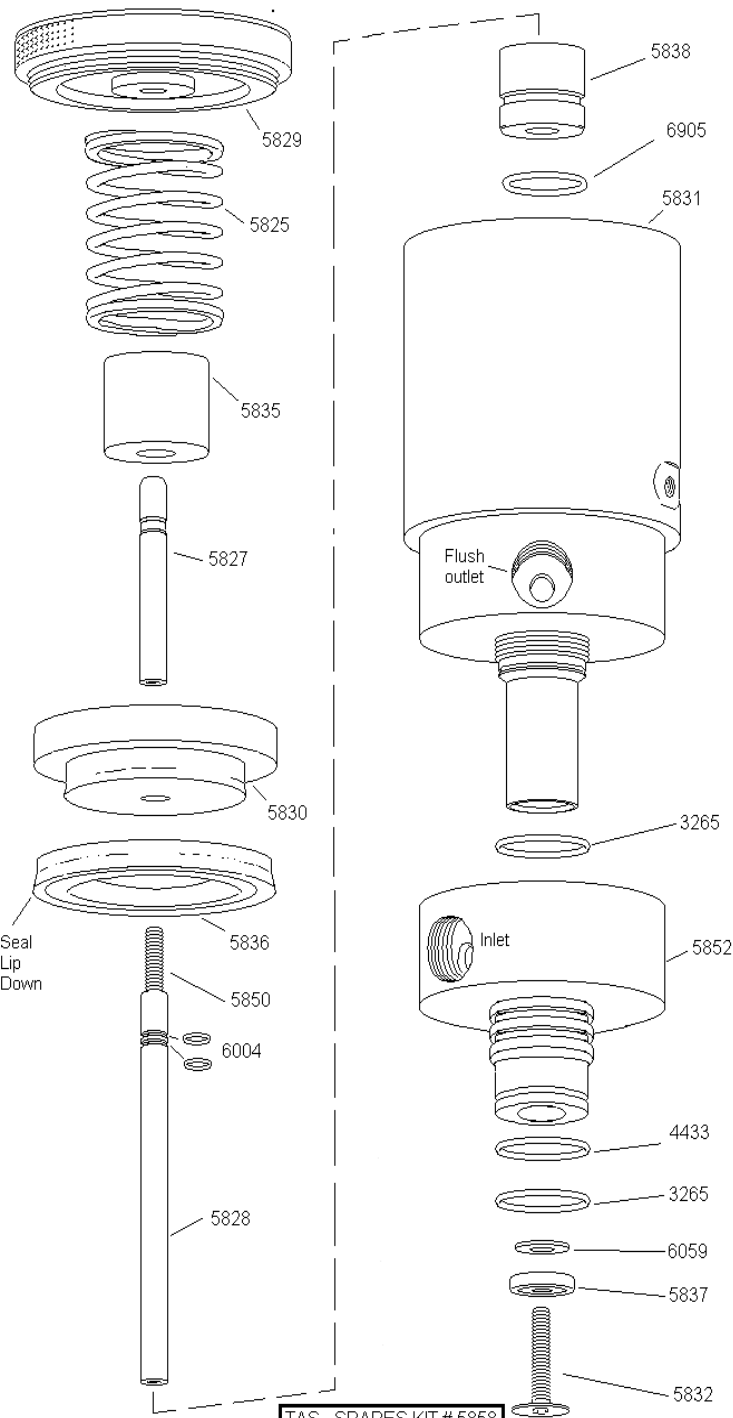
If any leakage is observed at the nose during this test, immediately tighten screw # 5832 by a further ¼ turn, or more until the leak is sealed. This will increase the diameter of the nose seal # 5837 a further fraction of a millimetre and effectively seal the nose in both the closed and open conditions.

### 3. CHANGING THE PISTON SEAL & SHAFT SEALS.

The 2 main shaft seals # 6004 should be replaced every 2,000 cycles or sooner if required. Any resin found to be migrating into the upper air cylinder indicates the need for the immediate renewal of these 2 seals.

These are accessed by first removing the nose seal # 5837, then unscrew the cylinder top (but be aware of the force of the internal spring). The Spring, Limiter and the Piston assembly is then withdrawn from the open cylinder end by pulling on the end of the brass shaft.

*For details of the TAS High Temp to operate at temperatures higher than 120°C, and the TAS High Pressure for operating pressures of up to 110bar, please contact your local Magnum Venus Products distributor.*

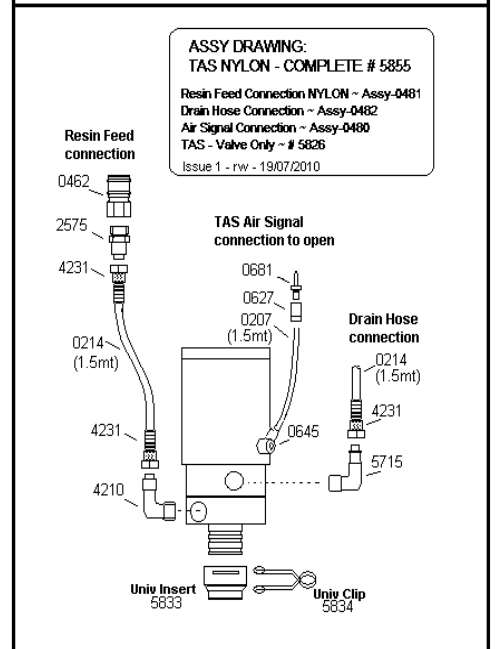
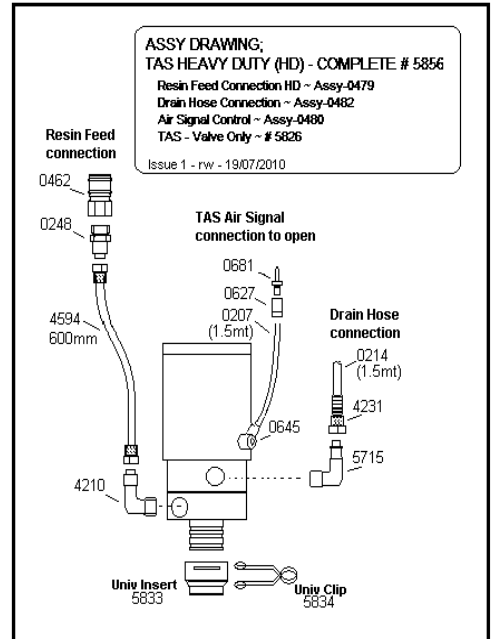


**TAS - SPARES KIT # 5858**

6905 x 1	0464 x 1
0645 x 1	4433 x 1
3265 x 3	6004 x 2
5836 x 1	5837 x 1

**Drawing Number 22414-9**  
**Turbo Autosprue Assy**

drawn arh 29/01/04  
 Issue 6: rw 01/02/2010 - oring 6578 added  
 Issue 7: 25/05/2010 arh O ring, 6903 added for bush 5838  
 Issue 8: rw 20/07/10 - O ring 6903 change to 6905  
 Issue 9: rw 23/09/2011 - Add hose connection dwgs, remove notes  
 Update Spares Kit Contents  
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## Check List:

- a. DO NOT over grease Piston Seal # 5836 as this can cause the valve to stick after periods of rest.
- b. A small smear of Silicone Grease is recommended to be used on the 2 Shaft O Rings # 6004.
- c. If the valve is difficult to open, check that:
  - o At least 7 bar pressure is available to power the valve.
  - o That the TAS valve been flushed correctly.
- d. Ensure that the TAS Nose is not damaged and that the nose O rings are replaced if showing signs of wear.

### Internal Damage to TAS Nose:

1. It is most important not to damage the sealing surface of the 10mm hole in the TAS nose. Damage usually occurs when the valve has been gelled up and mechanical attempts have been made to rectify the problem.
  - o *To solve the problem* clean the gelled up nose surface with solvent and a cloth, or alternatively, leave the nose in acetone for several hours to soften the residue before attempting to clean the internal surface. **On no account** should any hard metal or 10mm drill bit be used to clean this surface.
  - o NOTE: Any scratches or pitting damage on the precision 10mm nose bore will result in the nose seal leaking and damage to the nose seal itself. In the event that this nose seal surface is observed to be damaged as described then it is necessary to replace with a new nose # 5852.

## Using the TAS in a metal mould:

When you have a metal mould with the insert dimensions machined into the back of the tool, the Turbo Autosprue can be held securely in position in either of the ways shown below.  
Always bear in mind not to block the pin that extends through the lid during operation.

