



## **SpeedDri™**

An in-booth drying system for reducing the drying time on any waterborne paint job

## Fast, flexible, efficient drying

The Meech SpeedDri™ system is a compressed air based in-booth drying system. Designed for use on waterborne paint the SpeedDri system will increase your paint booth throughput and is flexible enough to adapt to virtually any drying requirement. The SpeedDri system is a true alternative to the expensive in-booth systems and the cumbersome stand based systems. What's more payback can be in a matter of weeks and the SpeedDri could wipe out the need for that extra Spray Booth.





## We've got the world covered

Wherever you are in the world, you'll find Meech hard at work, providing a wide range of businesses with specialist expertise. From our Headquarters and Technical Centre in the UK, our manufacturing subsidiary in the USA and sales offices in Belgium, Hungary and China, we've got the world covered. In fact, our distribution network now covers 50 countries, providing easy access to fully trained, carefully selected Meech distributors, who can provide in-depth support – wherever you are based.

## Outstanding quality as standard

As with every Meech system quality is a fundamental part of the SpeedDri system. We always work to the highest possible quality standards in everything we do; manufacturing, customer support and technical know-how. Our quality management system is certified by BSI to ISO90001. Products manufactured by Meech are also appropriately certified to international standards which include CENELEC EN 60950, UL/CSA (CUL) and CE. We also hold ATEX and UL "EX" approvals for use in hazardous environments. So you can be sure you've chosen a solution and a company that will meet your own exacting standards. .

## World leaders in Air Technology

No-one knows the specialist field of Air technology better than Meech. The practical benefits can be seen at work in the SpeedDri system. Incorporating the Meech Air Amplifier, SpeedDri is a purpose built system designed specifically for use with waterbourne paint. The SpeedDri system offers important benefits – including increased capacity and enhanced drying times – that help you to maximise you return on investment.

## All the experience you need

Established in 1907, Meech has earned a worldwide reputation for the design and manufacture of effective, durable systems that are supported by our knowledgeable technical team. We have developed a distribution network of companies with offices around the world to ensure our customers receive the level of service and response that only local resources can provide. Distributors are selected for their knowledge of the refinish industry and their ability to deliver a full service offering to their local customer base.

# Introduction to Waterborne Paint

## History

Over the last decade the car refinishing industry has been under increasing pressure to reduce Volatile Organic Compound (VOC) emissions.

Governments around the World are now taking an environmental approach in passing laws restricting the quantity of VOC emissions. This legislation is now making it necessary for paint technicians to switch to compliant coatings, which has meant switching to waterborne paint.



## Waterborne Paint

Waterborne paint is now the “norm” in all but a few paint shops in both Europe and North America and is quickly becoming standard around the rest of the world.

There are several advantages to using water-base coatings; they contain and emit less organic solvent into the atmosphere; they offer lower toxicity; they are less flammable and so reduce the risk of fire. It's also widely believed they offer a better finish than the solvent based alternative.

## Spray Booths

Proper control of the spray environment is as important for waterborne coatings as it is with solvent based. Most paint manufacturers recommend a downdraft spray booth for this process. As solvent clear coats must be applied after a waterborne basecoat, a heated spray booth is also preferable.

Air movement is also critical with waterborne paints to encourage the water to evaporate out of them.

Most production sheets for waterborne paints call for sufficient time for the coating to become uniformly dry before applying an additional coat or clear coat and this is where the first problem arises.

## Drying

Waterborne paints dry by the evaporation of their water content. While being much more environmentally friendly, the downside is that water takes a great deal longer to evaporate than the solvent based option. This longer evaporation process drastically increases the drying time of any waterborne paint job.

The best solution for dealing with the increased drying time is to direct a stream of air over the surface of the basecoat to speed up the evaporation process, in turn this significantly reduces the drying time of any waterborne paint job.

If air movement is not sufficient, water-saturated air will linger over the painted surface, slowing down evaporation. Sufficient air movement is even more important in high humidity areas where drying times can be amplified because of the environment.

Traditionally portable or handheld Venturi air guns increase air movement, whisking saturated air from the surface and increasing evaporation. For large refinish applications, stationary mounted booth venturis or fans in the ceiling of the booth can be used to increase air movement.

These methods of drying all have draw backs; they can be expensive, untidy, inflexible and ineffective. The Meech SpeedDri incorporates the performance of a stationary booth Venturi with the flexibility and price of a portable system.





The 14 drop points give complete freedom to set up the Air Amplifiers in a variety of configurations to suit the particular item or items to be dried. For example the system can be set up to dry a panel still fitted to the vehicle at the same time as drying other panels on stands.

## A total drying system

The SpeedDri system is supplied as a complete kit. The kit is sent as component parts that are then fitted together and mounted in the booth to form the SpeedDri system.

A complete kit consists of all the necessary pipe work, connections and couplings to link the system from the compressor to the point of application. Extra pipe work is also included to accommodate larger booths and more complicated configurations.

## SpeedDri Overview

### How does it work?

The SpeedDri runs solely on compressed air utilising Air Amplifier technology to blow a high volume stream of air over the painted surface. No other power is needed and no electrical wiring is involved in any part of the system.

The air is circulated to the SpeedDri directly from the existing compressed air supply via a ball valve and pressure regulator. A ring main is then fitted discreetly above the ceiling and filters.

14 bayonet drop points are fitted through the ceiling of the booth. These points act as an anchor for the Air Amplifier drops that expel air over the painted surface.

A total of 6 Air Amplifiers are supplied with the system. These 6 Air Amplifiers can be configured into either six single drops or a combination of single and double drops.





## Why choose the SpeedDri?

The Meech SpeedDri system combines the practicality, performance and unobtrusive design of much more expensive in-booth arrangements with the flexibility and cost comparable to that of hand held/stand solutions.

### Over 60% faster drying times

The SpeedDri system will dramatically reduce the time it takes to complete each coat of paint. Trials show the SpeedDri dries a base, top and clear coat in 9 minutes compared to a standard oven which takes approximately 27 minutes to dry the same area.

**So by simply fitting the SpeedDri you will immediately treble the potential throughput in one booth.**

### Work on several jobs at once

The unique 14 drop point design of the SpeedDri system lets you to set up the Air Amplifier drops in a variety of configurations. **This allows for several items to be dried at once and reduces the bottleneck common in many workshops.**

### Work more efficiently

The SpeedDri has been designed to run without the aid of an operator so **unlike standard drying guns your painter will be freed up to work on other jobs while the SpeedDri works on the paint.**



## Adjustable and interchangeable drops

Each SpeedDri Air Amplifier is fully adjustable letting you determine the air flow over a particular job and allowing a controlled drying process.

The design of the SpeedDri also allows you to decide how long you want each drop. Lengths of aluminium pipe work are supplied with the system which can then be cut to your requirement, letting you tailor the system to your needs.

## Simple, hassle free installation

The SpeedDri system had been designed to retro fit into virtually any spray booth. Installation has been made as simple as possible; on average it will **take 2 people approximately 4/5 hours to install.**



## Virtually no maintenance

The SpeedDri system has no moving parts which keeps maintenance to a minimum. This in turn reduces the risk of problems with individual component parts and eliminates any booth down time.

## Removes potential hazards

The SpeedDri system removes the need for awkward and potentially dangerous stands, pipe work or hand held tools.

The drops can be left in place permanently or simply removed and stored away when not in use.

## Air Amplifier technology

Air Amplifiers provide large airflows whilst consuming a minimal volume of compressed air. They entrain ambient air at a ratio of 20:1 making them among the most efficient ways to utilise compressed air.

## Connects to the existing compressed air supply

There is no need for any additional compressors, power supplies or fan units and so no unknown costs associated.



Photo courtesy of Cotswold Accident Repairs

## SpeedDri: Quick and Simple Drying

**Customer:** Cotswold Accident Repairs

Based in Witney Oxfordshire, Cotswold Accident Repair have been repairing and refinishing vehicles for 18 years. A Jaguar body and paint centre of excellence, Cotswold Accident Repair has a long history of quality repair and refinishing.

**Benefit:** The SpeedDri system offers a quick and simple answer to the problem of extended drying times associated with waterborne paint.

**Case Study:** Cotswold Accident and Repairs have one full paint booth that sprays approximately 15 to 20 vehicles a week. The increased drying time needed for waterborne paint has led to a bottle neck in the processing of cars through the booth. Sighted above the roof of the booth the SpeedDri system was installed in approximately 5 hours by one person. The 14 drop points were placed on the angled ceiling using the additional 45° connectors.

The SpeedDri system cut the drying times on all paint jobs and sped up the drying process by almost 70%. In one example the SpeedDri system improved the drying times of a base coat by 10 minutes and reduced the overall time to dry 3 coats by almost 20 minutes.





Photo courtesy of DJW Coachworks

## SpeedDri: Cost Effective Drying

**Customer:** DJW Coachworks

Based in South London, DJW Coachworks is a maintenance and repair workshop/garage that refinishes approximately 20 to 30 cars or vans a week. They currently have 2 paint ovens.

**Benefit:** The SpeedDri system offers a cost effective return on investment. The hands free drying also means that one painter can control the drying and painting in two ovens at once.

**Case Study:** DJW were looking for a simple paint drying solution that wasn't going to cost thousands and would provide them with some return on their investment. They also wanted to run both booths together without taking the time of 2 painters.

By fitting the SpeedDri system in the larger of the two booths DJW observed increased throughput in both booths. The installation of the SpeedDri also allowed the painter to prepare and work on the next job in the smaller booth while the SpeedDri dried the current job in the larger booth increasing productivity.



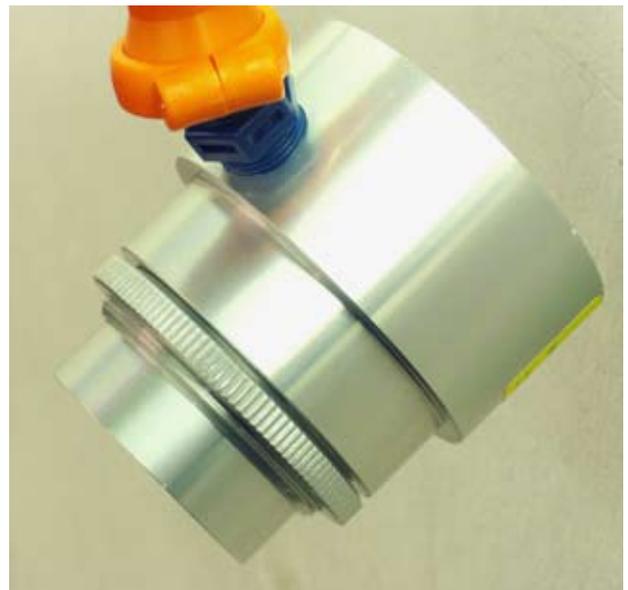


## Express Drying Times

The SpeedDri system is designed to increase the overall paint drying and curing process. This means a single spraybooth can handle more jobs increasing the overall capacity of the workshop.

Tests on the SpeedDri have shown a 63% reduction in the overall drying time of when compared to a booth that does not direct air over the painted surface.

The table shows the reduction in drying time when using the SpeedDri system.



### Comparison carried out on front wing of Transit van

	Drying time without any additional air drying	Drying time using Meech SpeedDri system
Unit of measurement	min	min
Base Coat	13.32	3.47
Top Coat	10.20	3.07
Clear Coat	3.52	2.06
<b>Total Drying Time</b>	<b>27.04</b>	<b>9.00</b>



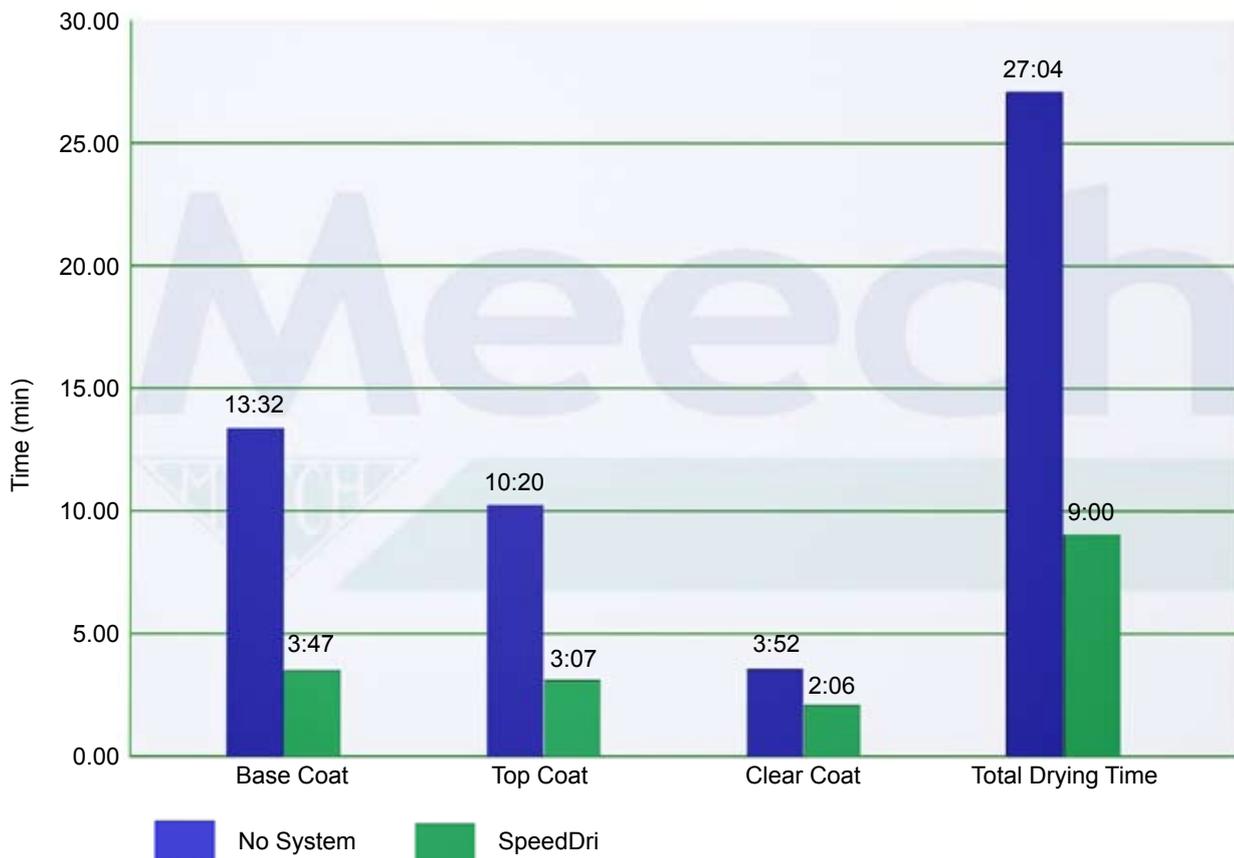
The graph below shows the true drying speed of the system when measured against a standard heated oven.

clearance time was approximately 2.45 minutes.

Paint equipment used is a Devilbiss gti 1.5 fluid tip and a 115 air cap. Spraying carried out at 2 bar (drop coat 1.5 bar).

All tests were carried out in a Garmat spray booth. Air changes were at approximately 3-4 minutes and air

**SpeedDri Drying Comparison on Transit Van Front Wing**



# Air Amplifier Technology

## How they work

The heart of the SpeedDri system is the Meech Air Amplifier. Manufactured in aluminium they are extremely durable and contain no moving parts.

Air Amplifiers work by using entrained ambient air to amplify the compressed air supply.

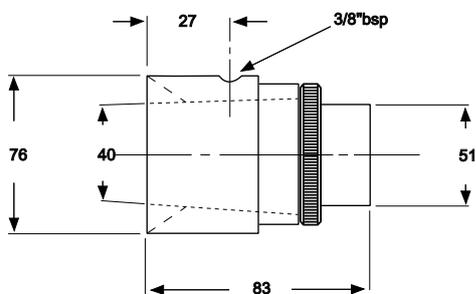
Air is released from an adjustable circular slot inside the air amplifier creating a "tube" of air. The tube then travels on the inside of the air amplifier towards the front creating areas of low pressure behind and in front that entrain ambient air at ratios of 20:1.

There are two benefits to the entrainment of ambient air:

1. There is a significant reduction on noise produced
2. Much less compressed air is consumed to achieve a certain output flow

Air Amplifiers are health and safety compliant

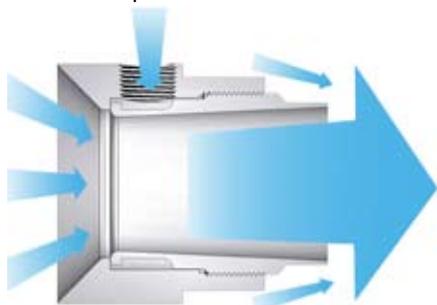
## Dimensions



Dimensions in mm

## Air Amplifiers in the SpeedDri system

The powerful airflow incorporated in the SpeedDri system is the result of the Meech Air Amplifier. The SpeedDri system comes as standard with a total of 6 separate Air Amplifiers that can be made up into either single or double drops.



## Mounting

The Air Amplifiers are mounted using adjustable ball and socket joints onto an aluminium pipe which is then locked into place using a bayonet fitting.

The drops can then be inserted into whichever drop point the operator chooses by simply pushing the aluminium tube upwards and rotating it anti-clockwise. The Amplifiers can then be angled as needed.

To achieve the optimum finish the air amplifiers should be orientated to blow air across the painted surface not directed straight onto the fresh paint.

When the paint is dry and the job is finished the drops can be simply removed. Although the process of removing the drops is quick and easy it is not necessary because the drops are positioned in the clean zone of the booth and are not affected by the spraying process. It is therefore possible to leave the drops in place.

# Flexibility

## Flexible Drying

The SpeedDri system is a totally flexible drying system. Any number of drops can be used at once allowing you the option to fit one drop for a quick small job or all 6 drops to dry a complete vehicle.

## Adjustable settings

The speed and volume of air at any given distance can be adjusted by either changing the input air pressure at the regulator, or adjusting the flow on the individual Air Amplifiers or a combination of the two.

Each Air Amplifier is factory marked with 3 different settings calibrated to give a range of performances. Each setting is given a number. Setting 1 is the lowest consumption and the slowest air speed, setting 3 gives the greatest consumption and the highest air speed and setting 2 produces a performance between the two.

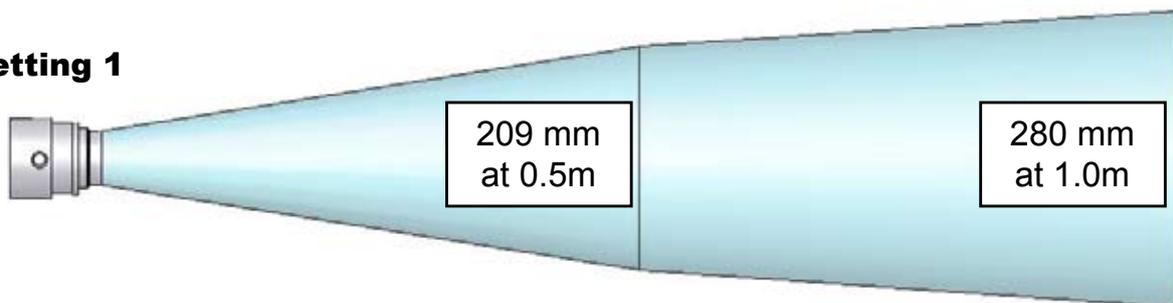
The Air Amplifiers are easily adjusted to any of these settings. Simply unscrew the locking ring and tighten up the barrel of the Air Amplifier into the body of the Air Amplifier until the two are locked closed. Setting 1 is then found by unscrewing the barrel from body until the line on the barrel aligns with the first line on the body. The second and third settings can be found in the same way. Finally tighten up the locking ring.

## Adjustable Air Speed

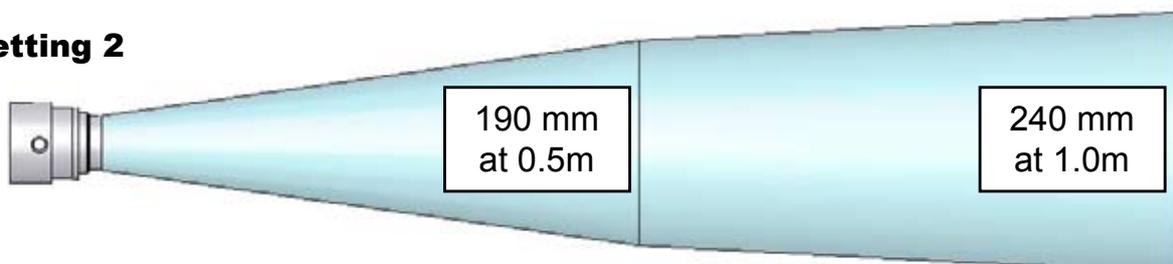
Another variable offered by the adjustability of the Air Amplifiers and inlet air pressure is the spread of air produced by a single Air Amplifier.

The air coverage provided by an individual air Amplifier at the 3 standard three settings can be seen below.

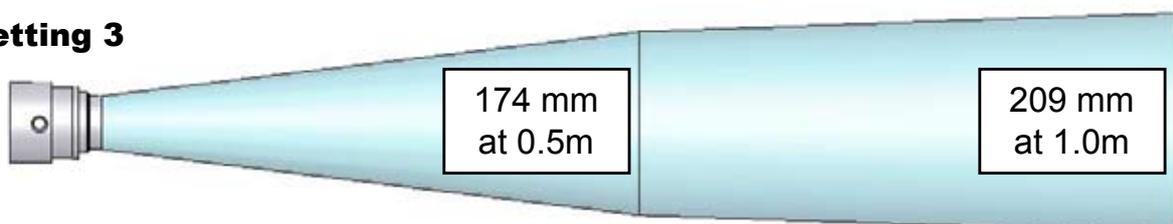
### Setting 1



### Setting 2



### Setting 3

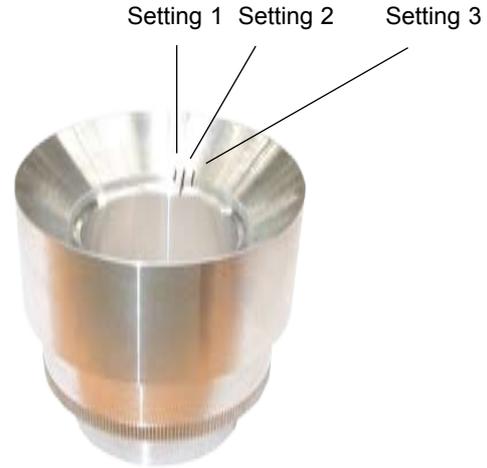


# Technical Specification

## Air Consumption and Air Speed

With all 6 Air Amplifiers connected, adjusted to setting 1 and running at the maximum suggested inlet pressure of 2.0 bar (29 PSI), the SpeedDri system will consume a total of approximately 48 cfm (1362 l/min).

The following tables illustrate the consumption and air speed generated by the SpeedDri system at 0.5 and 1 meter. This is broken down into various inlet pressures for settings 1, 2 and 3.



### Bar / CFM / m/s

Inlet Pressure	Calibrated: 6 CFM at 1.4 Bar			Calibrated: 8 CFM at 1.4 Bar			Calibrated: 10 CFM at 1.4 Bar		
	Setting: 1			Setting: 2			Setting: 3		
	Cons.	Air Speed		Cons.	Air Speed		Cons.	Air Speed	
Bar	CFM	m/s	m/s		CFM	m/s		m/s	CFM
0.5	2	3	2	5	5	3	7	6	4
1	4	5	4	7	7	5	9	8	6
1.5	6	7	5	9	9	6	11	11	7
2	8	8	6	11	11	8	13	13	9
2.5	10	9	7	13	12	9	15	14	10
3	12	11	8	15	14	10	17	16	11

Table 2: Performance characteristics (Bar / CFM / m/s).

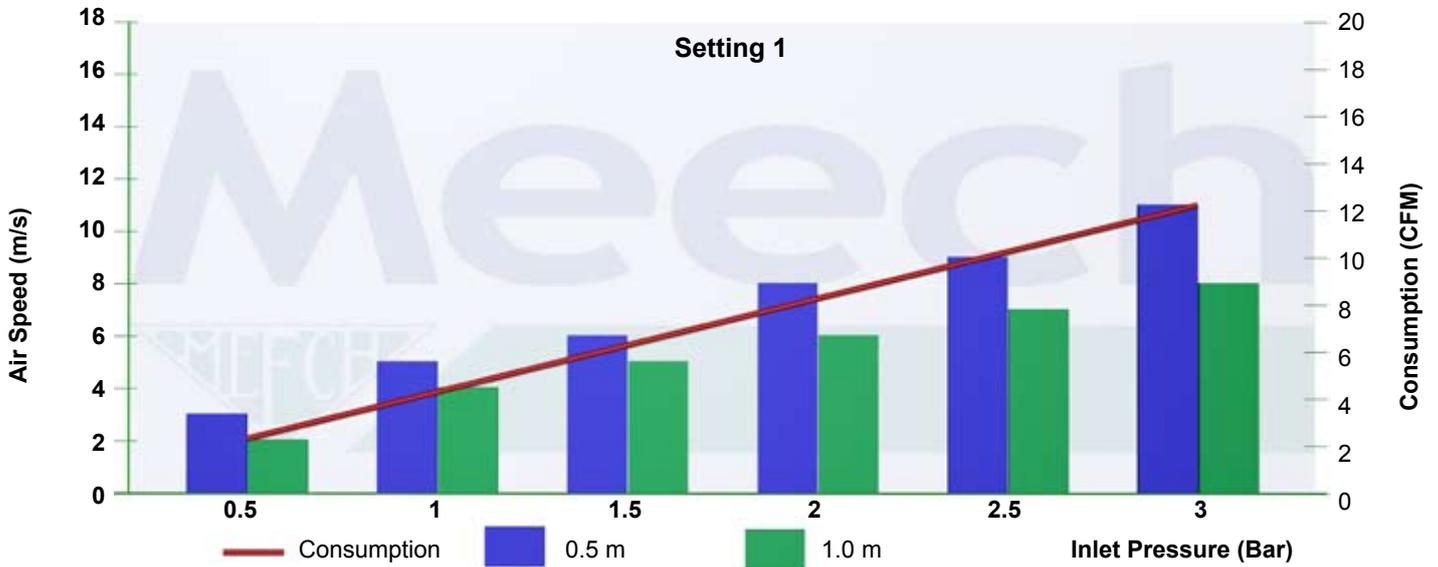
### PSI / l/min / ft/s

Inlet Pressure	Calibrated: 170 l/min at 20 PSI			Calibrated: 227 l/min at 20 PSI			Calibrated: 283 l/min at 20 PSI		
	Setting: 1			Setting: 2			Setting: 3		
	Cons.	Air Speed		Cons.	Air Speed		Cons.	Air Speed	
PSI	l/min	ft/s	ft/s		l/min	ft/s		ft/s	l/min
7	57	11	8	142	17	11	198	18	14
15	113	16	11	198	22	15	255	28	19
22	170	22	15	255	29	20	311	34	23
29	227	27	18	311	35	25	368	41	28
36	283	31	20	368	40	28	425	47	33
44	340	36	25	425	45	31	481	53	37

Table 3: Performance characteristics (PSI / l/min / ft/s).

# Technical Specification

The three graphs below show the air consumption and air speed against the inlet air pressure. Each graph represents a different control setting on the Air Amplifier.



# Parts List

The SpeedDri system is dispatched in kit form with the components listed below. Additional components can be purchased if required.

Description	Part Number	Qty	
Ball Valve 1/2"	D50273	1	
Filter Regulator with 1/2" bsp Inlet/Outlet		1	
Straight Connector 28mm	D50275	1	
Reducer 28mm to 22mm	D50276	3	
Stem Adaptor 22mm x 1/2	D50277	1	
Equal Elbow 28mm	D50278	2	
Rigid Nylon 28mm Pipe x 3mtr length	D50279	1	
Tee Equal 28mm	D50280	14	
Stem Adaptor 15mm push to 3/8" male thread	D50282	14	
Bulk Head Fitting 3/8"	D50283	14	
Equal Elbow 22mm	D50284	4	
Rigid Nylon 22mm Pipe x 3mtr length	D50288	10	
3/8" Female Bayonet Coupling	D50289	14	
3/8" Male Coupling Adapter	D50290	6	
3/8" Female Pipe Coupling	D50291	6	
3/8" BSPT Connector	D50292	12	
1/2" Double Socket	D50293	6	
Unequal Hex Nipple Taper 3/8 to 1/4"	D50294	12	
Air Amplifier Medium	A15015	6	
Aluminium 16.5mm Pipe x 3mtr length	D50287	5	
Male equal Tee 1/4"	D50295	2	
1/2" Element Clamps		12	

# Additional Parts List

The SpeedDri is delivered as a complete system and only requires tools that can be purchased from any hardware store.

Below is a selection of additional items and tools that Meech offer to enhance your system or help with the installation. These items all carry an additional charge.

Description	Part Number	Qty	
<b>Drop Kit</b> Comprising of: 1 x Air Amplifier 1 x 1.5 meter of 16.5 Aluminium pipe 1 x 3/8" Male Coupling Adaptor 2 x Unequal Hex nipple taper 3/8" to 1/4" 1 x Female Pipe Coupling 2 x 3/8" BSPT Connector 2 x Element Clamp		1	
<b>Extra Inlet pipe</b> Rigid Nylon Pipe 28mm x 3 meter	D50279	1	
<b>Extra Ring main pipe</b> Rigid Nylon Pipe 22mm x 3 meter	D50288	1	
<b>Drop fittings</b> 45° Elbow fitting For use in booths with angled ceilings		14	
<b>SpeedDri Tools</b>			
26mm Drill Bit		1	
1/4" BSP Tap		1	
De-burring tool		1	
Pipe Cutter suitable for 16 to 28mm pipe		1	
Teflon Tape		1	

# Additional Meech Automotive Refinishing Products

Meech offer a number of systems that offer effective solutions to static-related problems common in the refinishing industry. To discuss specific static problems and possible solutions please contact our head office.

## Meech 954 Gun

The Meech Model 954 is a hand-held ionising air gun for neutralising static charge and removing dust contamination in a wide range of automotive processes. The ergonomic, lightweight design of the 954 provides simple, quiet and effective operation.

The 954 is powered directly from the Model 904.

## Meech 904 Power Unit

The Meech Model 904 is a constant voltage power supply, designed to provide a 7kV source for Meech AC ionising equipment. It is adjustable to operate at 100-120v or 200-240v input voltages and is available in either 50Hz or 60Hz versions to suit local conditions.

The 904 utilises a modified shape of output wave form and is uniquely designed to allow automated manufacture for increased reliability and extended product life.



## Meech 983v2 Digital Static Locator

The Model 983v2 Static Locator provides accurate measurement of static electrical charges. Its design enables fast response, low drift and ease of operation. The Model 983v2 can operate in "Continuous" or "Peak Hold" mode to record changes in the level of charge or the highest charge detected respectively.

The Model 983v2 is suitable for use by production, maintenance, inspection and quality engineers and on any material where static charge may be an issue.





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## All you need, from the best in the business

Meech is also a leading provider of:

- **Industrial Static Control Systems** – Eliminating unwanted static or creating a controlled static charge in industrial processes can increase productivity, reduce waste and enhance quality.
- **Web Cleaning Systems** – Typically used within the printing and packaging industries to remove contamination, improve print quality and increase productivity.
- **JetStream Air Knife Systems** – Energy efficient air knife systems that are used for contamination and surface moisture removal.
- **Air Technology Equipment** – Compressed air products that save energy, reduce noise levels and provide efficient cooling.
- **ESD** – High sensitivity static control for electronic cleanroom environments to prevent ESD damage and reduce failure rates.