



GUIDE TO PURCHASING DRAIN JETTERS

An Informed Decision

EQUIPMENT • PARTS & SPARES • SERVICING • TRAINING





Introduction

Flowplant has been manufacturing drain jetting units since 1971. During this time, our customers' needs have driven our product development and enhancement programme. However, legislation and regulations are now playing a significant role.

Now that the high pressure jetting industry has matured, it has appeared on the radar of the Health & Safety Executive and they are taking a much greater interest in our workplace and the equipment used.

Recently a well-known national company was issued with a prohibition notice for using a high pressure jetting hose that was worn, with wire braid showing through. In the notice, the HSE Inspector made reference to BS EN 1829:2 which is one of the British standards covering hoses used in jetting operations. This clearly demonstrates that the HSE are aware of and checking on our industry.

The HSE also took a very active interest at the drafting stage of the recently published Water Jetting Association code of practice "For the safe working and use of water jetting equipment in drains and sewers" and an HSE Inspector sat on the drafting committee.

Under the PUWER regulations, employers are responsible for providing their employees with work equipment that is:

- a)** Suitable for the intended use
- b)** Safe for use, maintained in a safe condition and, in certain circumstances, inspected to ensure this remains the case (e.g. pressure relief systems)
- c)** Used only by people who have received adequate information, instruction and training (WJA cert)
- d)** Accompanied by suitable safety measures, e.g. protective devices, markings, warnings

Some machines on the market today fall short of these requirements and, although they may carry a CE mark inferring compliance with the necessary directives, a simple investigation can highlight areas where they do not comply. Purchasing such equipment can put employees at risk and exposes companies, their directors and managers to prosecution by the HSE



Procurement Process

In order to choose the correct machine, it is necessary that the equipment purchaser clearly specifies at least the following criteria:

- a)** Pressure and flow required from the machine.
Determined by the size and type of sewers to be cleaned and the time allowed per job. There may also be contractual commitments that the purchasing company has towards their own client.
- b)** Max allowable weight of the machine.
Determined by company policy, type of towing vehicle, type of carrying vehicle, employee age, driving license entitlement and operator license situation
- c)** Details of the towing/carrying vehicle.
Payload and wheelbase of carrying vans or GTW and kerb weight of towing vans. A tachograph is now required for any vehicle where the GTW could exceed 3.5t. Since April 29th 2013, van packs fitted into vehicles before they are registered require VCA type approval.
- d)** One man operation required (OMO)
Single person operation is permissible under the WJA safe working code but a compliant OMO kit must be fitted. Radio or foot pedal versions are available and they must be designed to fail safe.
- e)** List of accessories i.e. Drain jet types, Jump Jet kit, Jetting gun, Hose length
- f)** Reputable manufacturers will normally provide vital safety accessories as part of their standard equipment package. If they don't then this should be taken account of in the final package price.

Vital Safety Accessories include 3m safety leader hose and drain jet extensions (for larger diameter drains).

Choosing a Supplier

When the specification has been set, it is necessary to choose a manufacturer that can build the product to the right price, quality and delivery time. This choice should be based on the following factors:

- a) Compliance with regulations
- b) Quality of product
- c) Cost of ownership
- d) Reputation of manufacturer (new suppliers)
- e) Past experience (existing suppliers)

Compliance with regulations is the most important. Without this, the equipment must not be on the market. Of course, the manufacturer should not be offering non-compliant machines but there is an onus on the purchaser to take reasonable precautions to ensure that equipment is compliant, particularly if they have any concerns that it may not be. Assume that "CE" doesn't infer compliance but means Check Everything!

There are a few basic enquiries that a purchaser can make to check likely compliance before purchasing and these should be included in a purchasing decision matrix. (as below)

PURCHASING DECISION MATRIX				
	High Score	Supplier 1	Supplier 2	Supplier 3
Pressure	8	7	8	8
Flow	7	7	7	7
Weight	8	6	6	8
Water Capacity	7	6	5	7
Dimensions	6	4	4	6
Price	8	8	4	8
Cost of ownership	8	4	7	5
Quality & Innovation	8	5	7	6
Reputation & Experience	5	4	4	5
Pre sales support e.g. technical advice, demonstrations, training, delivery leadtime	8	8	6	7
After sales support e.g. servicing & maintenance, repairs, spares, local depots	8	6	5	4
EC Declaration of conformity*	10	0	10	0
Operations instruction manual*	10	0	10	0
Water bye law compliant*	10	10	10	10
ISO9001:2008 quality system	6	0	6	0
WJA members	3	0	3	3
TOTAL	120	75	102	84
Percentage		63	85	70

Items in the matrix that are required by law are marked with an asterisk * and should always be weighted above all others. "High score" is a number that reflects the relative importance of that criteria. Then mark each supplier against the high score relative to each other. A blank copy of this table is included in Appendix 1 to assist you.

First, ask to see a copy of a machine operator manual and check that it has the following information.

- a) Business name and full address of the manufacturer and of their authorised representative (if appropriate)
- b) Description of the equipment as marked on the machinery itself
- c) EC declaration of conformity, or a document setting out the contents of the EC declaration of conformity, showing the particulars of the machinery
- d) General description of the machinery; the drawings, diagrams, descriptions and explanations necessary for the use, maintenance and repair of the machinery and for checking its correct functioning
- e) Description of the workstation likely to be occupied by operators
- f) Description of the intended use of the machinery
- g) Warnings concerning ways in which the machinery must not be used that experience has shown might occur
- h) Instructions for the putting into service and use of the machinery and, if necessary, instructions for the training of operators
- i) Information about the residual risks that remain despite the inherent safe design measures, safeguarding and complementary protective measures used
- j) Instructions on the protective measures to be taken by the user, including, where appropriate, the personal protective equipment to be provided

This information is easy to check and if it is not present then the equipment is not meeting the regulations and you should question whether and which other items are not compliant.

Secondly, if it isn't in the instruction manual, ask to see a typical declaration of conformity. This should have details of the directive with which the machine complies and it should be signed by a competent person from the supplying company.

Preferably, the supplier will operate an externally audited quality system and a purchaser should ask to see a copy of their current certificate. Quality conscious manufacturers will operate a quality system that meets BS EN ISO9001 and requires that they are externally audited twice a year. Quality systems force companies to operate in a structured way with procedures and processes that can be checked and repeated. They indicate that the manufacturer has a disciplined approach and that equipment is likely to be of a consistent and repeatable quality.

More importantly, the external audit procedure exposes weaknesses that would otherwise go unchecked. If a supplier says that they operate their own unaudited quality system, ask to see a copy of their quality manual which should detail how they construct their equipment.



Check for active membership of any trade associations. Trade associations often work closely with the H&S Executive and can provide practical advice on the application of relevant standards. When accidents occur, trade associations are often the first port of call for the HSE. Flowplant is an active contributing member of the Water Jetting Association and sits on the drafting committee for both the Safety Awareness and Safe Sewer Cleaning Code, launched in the last 2 years.

Machine Performance

Pressure, flow, water capacity and weight are generally considered to be the most important criteria when considering a machine purchase. We can now see that regulatory compliance must come before all of these. Once machine compliance has been assured, contractual considerations should be taken into account. It may be necessary that machines on certain contracts require a certain flow and pressure combination. Where no such restrictions exist, the choice of machine performance is likely to be set by:

- a) Previous experience
- b) Type of work to be undertaken
- c) Weight and towing restrictions
- d) Noise restrictions

The Water Jetting Association's Code of Practice 'Safe working and use of water jetting in drains and sewers' offers guidance on the performance of machines and what type of work they can be expected to carry out, as shown in the table below:

Flow rate	Maximum recommended diameter
6 gpm (27 lpm)	4" (100mm)
8 gpm (36 lpm)	6" (150mm)
12 gpm (54 lpm)	9" (225mm)
15 gpm (68 lpm)	12" (300mm)
28 gpm (126 lpm)	18" (450mm)
46 gpm (207 lpm)	36" (1000mm)
84 gpm (380 lpm)	72" (1800mm)

In practice, machines that have flows of less than 8 gpm at 3000 psi are of limited use within a commercial / industrial drain cleaning operation and machines that provide more than 15 gpm at 3-4000 psi are too heavy and require too much water capacity for 3.5t GVW vans to carry legally.

Cost of Ownership

Initial purchase price is important but lifetime cost of ownership should take into account the following items:

- a) Purchase price – including accessories, fitting and delivery
- b) Fuel costs – petrol v diesel
- c) Warranty terms – parts & labour
- d) National after sales service provision – on site or at depot
- e) Residual value – estimate of the future value
- f) Disposal costs

When considering warranty terms, it is advisable to obtain a copy of the manufacturer's terms and conditions of sale and warranty policy. This can normally be found on the company website. If it is not there, request a copy.

Ask how the manufacturer provides after sales service on a national basis and what response time can be expected. Will they offer a fixed price service package and will they travel to your site? How do they ensure that their engineers are competent?

Ask about residual values and expect manufacturers that offer such deals to also require machinery is serviced by them at specified intervals. This maintains compliance with the directives.

Aside from the high fuel costs associated with running a petrol engine there are increased service costs, reduced reliability and the safety issue of storing petrol in a van.

Refurbishing Machines

Refurbishment can often be seen as a viable alternative to replacement but consideration must be given to the level and type of refurbishment. If the modifications are substantial, the modified machinery must be considered as new machinery (i.e. replacing petrol engines with diesel engines) and it is, therefore: subject to a new conformity assessment; requires a new CE mark, new manuals and new declaration of conformity. In such cases it is unlikely that the actual cost of refurbishment will be much less than a new machine.

Refurbishments that could be considered substantial are:

- a) Engine replacement with different type
- b) Pump upgrade
- c) Frame alterations

If the refurbishment is minor with no basic alterations to the machine structure, then maintaining the machine in its original state is enough to assume compliance, and removes the need for re-certification. Such refurbishments are limited to replacing like for like components and returning the machine to its 'original as supplied' new state. If such minor alterations provide the desired machine performance, then refurbishment is an option provided that it fulfills the duty of care owed to the employee by both the refurbisher and the employer

Conclusion

Consideration of all these items will help develop a balanced business case for your jetter procurement by ensuring that the equipment sourced is compliant, fit for purpose and represents best value for money.

Checklist	Actioned
Equipment criteria specification completed	
Purchasing decision matrix completed (see Appendix 1 for a blank matrix)	
Machine performance confirmed	
Lifetime costs calculated	
Order placed and delivery date agreed	

About Flowplant

Flowplant has been manufacturing innovative, high quality drain and sewer cleaning equipment since 1971. Through our nationwide network of service and distribution centres, we supply a full range of keenly priced and energy efficient drain cleaning jetters and accessories suitable for domestic, commercial and industrial applications.

Over the past 45 years, Flowplant has sold thousands of reliable and versatile drain jetters throughout the UK and exported to well over 80 countries around the world. We pride ourselves not only on delivering durable, affordable machines that get the job done but also on developing an expert, personal client relationship that includes advice, demonstrations, training and exceptional pre and post-sales support.

We operate under an ISO9001:2008 approved quality assurance system. Our equipment is CE marked in accordance with the European machinery directive 2006/42/EC and meets the requirements of PUWER. We are active members of the Water Jetting Association with representatives on both the technical committee and governing council.



Appendix 1

SUPPLIER MATRIX				
	High Score	Supplier 1	Supplier 2	Supplier 3
Pressure	8			
Flow	7			
Weight	8			
Water Capacity	7			
Dimensions	6			
Price	8			
Cost of ownership	8			
Quality & Innovation	8			
Reputation & Experience	5			
Pre sales support e.g. technical advice, demonstrations, training, delivery leadtime	8			
After sales support e.g. servicing & maintenance, repairs, spares, local depots	8			
EC Declaration of conformity*	10			
Operations instruction manual*	10			
Water bye law compliant*	10			
ISO9001:2008 quality system	6			
WJA members	3			
TOTAL	120			
Percentage				

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