GUIDELINES

on the Interpretation of

The Machinery Directive

for the

Valve and Actuator Industry

prepared by

The British Valve and Actuator Association

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VAA GUIDELINES ON THE INTERPRETATION OF T

HE MACHINERY DIRECTIVE:

2006/42/EC – JUNE 2006

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BVAA GUIDELINES ON THE INTERPRETATION

of the

MACHINERY DIRECTIVE 2006/42/EC – June 2006

for the

VALVE AND ACTUATOR INDUSTRY

Introduction, background, objectives and key changes in 2006/42/EC

1. The Directive which became law on January 1 1995 is a trade measure and not a safety measure as such (a common misconception). Its basic purpose is to remove technical barriers to trade – thus promoting the creation of the Single European Market – by producing one harmonised set of essential health and safety requirements for the supply of machinery across the Community.

2. The original Directive: 89/392/EEC as amended by 91/368/EEC, 93/44/EEC and 93/68/EEC was replaced by a single Directive 98/37/EC. A revision to the Machinery Directive 2006/42/EC was published on 9th June 2006 and became applicable from 29th December 2009: until that date, the machinery Directive 98/37/EC continued to apply. The same basic principles continue to apply but some underlying detail has changed and the appropriate documents (certificates and declarations) required by the Directive will have to reflect the change in the numbering of the Directive.

3. Members should note that EU Directives are subject to the force of law through legislation in the Member States. BVAA Member Companies therefore have to comply with the following UK Statutory Instruments:

1992 No. 3073 – Supply of Machinery (Safety) Regulations 1992 (Amendment pending)

1994 No. 2063 – Supply of Machinery (Safety) (Amendment) Regulations 1994

European Communities Act 1972 as The Supply of Machinery (Safety) Regulations 2008 (S/I/2008/1597)

These have implemented the Machinery Directive in the UK.

4. Although these BVAA guidelines are restricted to the Machinery Directive (2006/42/EC) members should note there will be situations where other directives may have to be considered, e.g. Simple Pressure Vessels (87/404/EEC), Electro-Magnetic Compatibility (89/336/EEC), Construction Products (89/106/EEC).

5. Machinery Regulations 2008 - Key changes

The new set of regulations puts into effect in the UK the reforms introduced by the revised Machinery Directive by, for example:

Providing some clearer definitions including of the core term “machinery” as well as of some other key terms such as ‘safety components’ (backed up with a list of specific examples) and lifting accessories.

The scope of the directive has been extended to apply some of its provisions to a category of product known as ‘partly completed machinery’ to make clearer the responsibilities of players other than the ultimate supplier involved in the supply chain

Giving manufacturers the option to use full quality assurance in the conformity assessment process for those products regarded as particularly hazardous, i.e. those referenced in Annex D

Also on conformity assessment introducing a new, lighter procedure for manufacturers using harmonised standards for Annex D products

Updating the list of essential health and safety requirements in line with the ‘state of art’ as well as making some of them clearer than previously and presented in a more logical order and format

Making some small changes to the contents of Declarations of Conformity which will equip the enforcement authorities (sometimes referred to as the market surveillance authorities) with better means of tracing products.

1. Definition of 'Machinery'

Article 2a of the Directive states: The following definitions shall apply:

'Machinery' means:

- An assembly, fitted with or intended to be fitted with a drive system other than directly applied human or animal effort, consisting of linked parts or components, at least one of which moves, and which are joined together for a specific application,
- An assembly referred to in the first indent, missing only the components to connect it on site or to sources of energy and motion,
- An assembly referred to in the first and second indents, ready to be installed and able to function as it stands only if mounted on a means of transport, or installed in a building or a structure,
- Assemblies of machinery referred to in the first, second and third indents or partly completed machinery referred to in point (g) which, in order to achieve the same end, are arranged and controlled so that they function as an integral whole,
- An assembly of linked parts or components, at least one of which moves and which are joined together, intended for lifting loads and whose only power source is directly applied human effort;

BVAA *Interpretation*

Manual Valves: as the power source of manual valves (lever or gear operated) is directly applied manual effort, manual valves are not 'machinery' as defined in the Directive.

Power operated valves, actuators and valve/actuator assemblies are almost machinery but cannot in themselves perform a specific application. As such they fall into the new definition of partly completed machinery. Only intended to be incorporated into or assembled with other machinery or other partly completed machinery or equipment, thereby forming machinery to which this Directive applies

2. Partly Completed Machinery'

Article 2 (g) of the directive states:

Partly completed machinery' means an assembly which is almost machinery but which cannot in itself perform a specific application. A drive system is partly completed machinery. Partly completed machinery is only intended to be incorporated into or assembled with other machinery or other partly completed machinery or equipment, thereby forming machinery to which this Directive applies;

BVAA *Interpretation*

Power operated valves, actuators and valve/actuator assemblies are partly completed machinery and manufacturers of partly completed machines intended to be incorporated into another machine or which cannot function unless built into a machine must sign a 'Declaration of Incorporation'. This must state that machinery is incomplete and must be made to fully conform with the requirements of the Directive before it is brought into service in accordance with Article 13 (Procedure for partly completed machinery)

2.1 Safety Components

ARTICLE 2 of the Directive states:

'Safety component' means a component:

- which serves to fulfil a safety function,
- which is independently placed on the market,
- the failure and/or malfunction of which endangers the safety of persons, and
- which is not necessary in order for the machinery to function, or for which normal components may be substituted in order for the machinery to function.

  An indicative list of safety components is set out in Annex V, which may be updated in accordance with Article 8(1) (a);

BVAA Interpretation

ANNEX V
Indicative list of the safety components referred to in Article 2(c)

5. Valves with additional means for failure detection intended for the control of dangerous movements on machinery.

This subject is the most onerous part of the Directive for BVAA Members.
The BVAA Committee consider that safety valves control the pressure and flow of the fluids passing through them. Therefore they do not directly control dangerous movements on machinery. It is only when they are incorporated into a machine that they may influence the control of dangerous movements on machinery. In these instances they are not 'safety components' and require a 'Declaration of Incorporation'

However, manufacturers of valves, actuators and valve/actuator assemblies may wish to declare that when used in specific applications (e.g. emergency shut down - ESD or SLAMSHUT), they are 'safety components'. In these cases they are 'safety components' which require a 'Declaration of Conformity'.

It is the manufacturer who declares his product to be a 'safety component'. He may be advised by his customer that his product is to be used as a "safety component" or he may decide this himself, particularly if he has or intends to promote (advertising literature) it as such (e.g. a fire control device, an ESD).

BVAA Members will need to issue a 'Declaration of Conformity' for their products declared to be 'safety components'. The essential steps to preparing the Declaration of Conformity are:

- Step 1. Fulfill the Essential Safety Requirements, [ESRs] of ANNEX I of the Directive.
- Step 2. Prepare the Technical File of ANNEX V of the Directive.
- Step 3. Prepare the EC Declaration of Conformity of ANNEX II.C of the Directive.

2.2 Fulfilling the Essential Safety Requirements (ESR)

Article 5.1 of the Directive states:

> "Machinery and safety components covered by this Directive shall satisfy the essential health and safety requirements set out in ANNEX I.
>
> These ESRs are mandatory and very wide ranging. They oblige the manufacturer "to assess the hazards in order to identify all those which apply to his machine; he must then design and construct it taking account of his assessment".

The ESRs acknowledge that "taking into account the state of the art, it may not be possible to meet the objectives set by them (the ESRs). In this case the machinery must as far as possible be designed and constructed with the purpose of approaching those objectives".

Members are advised that ALL of ANNEX I should be studied, not only the parts that at first sight seem relevant. In Appendix A to these guidelines we have listed all the hazards of ANNEX I. Go through this checklist and identify all hazards that apply to your machinery. Having identified the hazards define the preventative measure. The order of priority is:

- 1. Elimination of hazard.
- 2. Risk reduction.
- 3. Technical protective measures.
- 4. Information.

For this purpose you can find help in standards and recommendations.

The Commission has contracted with CEN to prepare new European harmonised safety standards. The use of these harmonised standards in design and construction confers the presumption of compliance with the essential requirements which they cover (Article 7). When a manufacturer has chosen to follow one or more of the harmonised standards in order to satisfy one of the essential safety requirements which they cover, he has taken the measures which can be expected of him. Standards in this context are CEN/CENELEC harmonised standards, see also article 7 of the Directive. A list of harmonised standards is given in Appendix B of these guidelines. This list is as published from time to time by the ??

The hierarchy of CEN Standards is as follows:

- **Type A Standards**: such as EN 292 which are fundamental safety standards, giving basic concepts, principles for design, and general aspects that can be applied to all machinery.

- **Type B Standards**: (group safety standards) dealing with one safety aspect or one type of safety related device that can be used across a wide range of machinery.

B1 Standards on particular safety aspects (e.g. BS EN 294 1992 -safety distances, upper limbs), also surface temperature, noise.

B2 Standards on safety related devices (e.g. BS EN 418 1992 - emergency stop equipment) also pressure sensitive devices, two hand control devices, etc.

- **Type C Standards**: (machine safety standards) giving detailed safety requirements for a particular machine or group of machines (e.g. BS EN 289 1994 - compression transfer moulding presses).

You may find no harmonised standard is available for your type of machinery. In this case, other (ISO or National) standards and recommendations may help you. They do not give the presumption of conformity, but as you need to state how you have eliminated the hazard, it is in your interest to refer to all such material used to develop your technical solution.

The checklists do not replace ANNEX I as you will have to study this to find various definitions and the full wording of the hazards. The checklists only give the headings of the paragraphs including the numbers for easy reference. The standard BS EN 292 Parts 1 and 2 is essential reading to definitions of concepts and words.

Now fill in the checklists under the columns given:

- EN Standards
- Other standards (ISO, National etc)
- Recommendations
- Other measures taken (your own solutions)

For each hazard identified you must state how the ESRs have been met.

One other important point requiring specific attention is operating instructions. Point 1.7.4 of ANNEX I of the Directive describes the mandatory contents of the operating instructions - also see item 8 of these guidelines - **Language.**
Having complied with all the relevant ESRs to eliminate the hazards and reduce the risks based on technical standards and recommendations and information you can now prepare:

2.3 The Technical File

This is sometimes referred to as the Technical Construction File, ANNEX VII, of the Directive states:

> The technical file must demonstrate that the machinery complies with the requirements of this Directive. It must cover the design, manufacture and operation of the machinery to the extent necessary for this assessment. The technical file must be compiled in one or more official Community languages, except for the instructions for the machinery, for which the special provisions of Annex I, section 1.7.4.1 apply.

In Appendix C we have suggested forms that give you the contents of the Technical File. Before filling in these forms, the following should be remembered:

- The responsible person for drawing up the Technical File is either the manufacturer (whether or not established in the Community) or his authorised representative (established in the Community). See Appendix E (page 31).

- In case the manufacturer for compelling reasons (cease of existence, machinery imported without the knowledge of the manufacturer, complex assemblies etc.) is not able to draw up the Technical File, or no authorised representative is established in the Community, the person placing the machinery on the market will take over this responsibility.

- The information needed to assemble the Technical File should be available so that the file may be compiled within a reasonable time of a request so to do. It will usually be easiest to compile the file when designing the machine because, at this time, all the relevant information is normally available to hand.

- The Technical File for a given machine shall be maintained for a period of 10 years after production (for series manufacture, 10 years after production of last unit).

- The Technical File need only be in one of the official languages of the Community. No translation of the Technical File can be requested. However, the operating instructions shall be in the language of the user, see ANNEX I: 1.7.4(b).

- The manufacturer of equipment into which components bought from external sources are incorporated is responsible for his choice of component (based for instance on specifications given in data sheets). He must incorporate information relevant to the Technical File about these components into his Technical File (data sheet and confirmation from his supplier that components comply with these sheets).

- Only the national authorities can request the Technical File. It shall only be submitted on duly substantiated request (i.e. not on a systematic basis). Only the part of the Technical File relating to the aspect of the machine suspected not to conform need be submitted (see also below).

- When a certain aspect of your machine has been questioned by national authorities of one country and conformity with the directive has been accepted, the correspondence and documentation from the case can be used as proof in the event that another country questions the same aspect. Keep good records of any case!

If you prepare your Technical File with the help of the master forms given in APPENDIX C, the forms serve the following purposes:

- **Form Ia** - Enclosure for EC Declaration of Conformity (*).

- **Form Ib** - For inspection purposes on duly substantiated request from authorities, on a case-by-case basis together with one or more of the sub-parts of Form II.

- **Form II** - Divided into sub-parts for each hazard. For inspection purposes on duly substantiated request from authorities. Shall be prepared for each hazard.

- **Form III** - If your machine is in series manufacture.

(*) NOTE: The directive allows manufacturers to decide themselves whether to enclose information on standards in their Declaration of Conformity, depending on their commercial strategy (remember, the declaration will be transmitted not only to the authorities, but also to your customer). If you want to enclose this information, Form Ib (without enclosures) contains the relevant information. BVAA recommends forms Ia and Ib be submitted in all cases as future legislation may make it compulsory.

*** Important!** If a manufacturer refuses to present his Technical File, nonconformity is presumed.

Having ensured that the Technical File is available, i.e. all the information to show compliance with the ESRs, you are now in a position to make:

2.4 The Declaration of Conformity (for Safety Components)

"The manufacturer or his authorised representative established in the Community must, in order to certify that machinery and safety components are in conformity with this Directive, draw up for all machinery or safety components manufactured, an EC Declaration of Conformity based on the model given in ANNEX II (A) or (C) as appropriate.

In addition, for machinery alone, the manufacturer or his authorised representative in the Community must affix to the machine the CE Mark referred to in Article 10".

Safety components are not allowed to bear the CE mark but they must have a Declaration of Conformity (do not allow a competitor to attempt to gain an apparent selling advantage by unlawfully applying a CE mark to his 'safety component' - protest through the BVAA).

It is important to remember that, if you have followed the methodology described in this section of these guidelines, you can yourself declare that your machine conforms. You need no external or third party testing or certification.

In Appendix D we recommend a form for the Declaration of Conformity. With this declaration the Technical File, Form I.a must be enclosed (depending on your own choice, also Form I.b without enclosures).
(See (*) note paragraph 2.2 Technical File above)

It is only necessary to submit a Declaration of Conformity for each separate order of identical items, not for each item.

Please note the following before filling in the declaration:

- If you need to comply with other directives these shall also be mentioned.
- The person signing must be identified explicitly (in block letters, name, first name, position).
- In case of series manufacture the Declaration of Conformity may state a range of series numbers to which the declaration applies. Thus, photocopies may be used for machines in this range.
- The declaration must be drawn up in the same language as the original operating instructions. It must be accompanied by translation in (one of) the official language(s) of the country where the machine is to be used (see ANNEX I, 1.7.4 (b) for details).

3. Incorporation of a Product into "Machinery" and Declaration of Incorporation

This regulation applies in the case of relevant machinery which

(a) Is intended for:
  (i) Incorporation into other machinery; or
  (ii) Assembly with other machinery;

(b) Cannot function independently, and

(c) Is not interchangeable equipment

BVAA Interpretation

If the manufacturer knows that the valve, actuator or valve/actuator assembly is to be incorporated into 'machinery' then the manufacturer or supplier will need to issue with the product a Declaration of Incorporation. A recommended form of a Declaration of Incorporation is given in Appendix E of these guidelines.

It is only necessary to submit a Declaration of Incorporation for each separate order of identical items, not for each item.

Procedure for partly completed machinery

1. The manufacturer of partly completed machinery or his authorised representative shall, before placing it on the market, ensure that:

a) The relevant technical documentation described in Annex VII, part B is prepared;
b) Assembly instructions described in Annex VI are prepared;
c) A declaration of incorporation described in Annex II, part 1, Section B has been drawn up.

2. The assembly instructions and the declaration of incorporation shall accompany the partly completed machinery until it is incorporated into the final machinery and shall then form part of the technical file for that machinery

4. Safety Devices

The Machinery Directive does not refer to pressure, or protections against excessive pressure, and therefore Safety Devices (e.g. self-contained, spring loaded pressure relief type valves) are not within the meaning of "machinery" and do not fall under the Machinery Directive.

The question whether (e.g. self-contained, spring loaded pressure relief type valves) should be treated as safety components has still to be resolved. The current thinking is that the forthcoming PED (Pressure Equipment Directive) will cover these valves and may call for a Declaration of Conformity.

Members therefore may choose either to take no action with these valves at the present time, *or* to prepare and issue a Declaration of Conformity now, (as described in Chapter 2 of these guidelines), in the knowledge it may happen in due course.

The BVAA will stay close to this dilemma and advise members when the situation changes.

5. Marking

BVAA Interpretation

As a valve, an actuator and a valve/actuator assembly is not 'machinery' as defined by the Directive, it cannot carry a CE mark and therefore no specific extra making is required.

6. Guarding

BVAA Interpretation

BVAA understands that the standard of guarding required under the Machinery Directive is the same as presently required by the Health and Safety at Work Act 1974 and subordinate legislation. Providing Members' products meet these requirements then **CURRENT PRACTICES ARE ACCEPTABLE**.

This does not absolve anyone from the responsibility of considering:

a) The risks arising from the use of machinery (Safety of Machinery - see BS EN 292 Parts I and II)

b) Advice on assessing risks (see provisional standard Pr EN1050).

7. Components from inside and outside the EU

If a component is manufactured inside the EU and is assembled into a piece of machinery which in turn is supplied for use in the EU, then the responsible person for that piece of machinery will obtain the information about the component for use in his design. If pertinent, then this information may be copied and held in the Technical File for the piece of machinery.

If a component manufactured outside the EU is obtained from an EU based importer then the importer is responsible for providing the component documentation to his customer.

If components manufactured outside the EU are obtained and incorporated into a product which is then supplied to a customer in the EU who is then exporting his product outside the EU, the rules and regulations still apply.

The general principle is that the responsibility for component documentation lies with whoever imports the component into the EU.

8. Language

> ANNEX I: 1.7.4 Instructions
>
> When machinery is put into service, it must be accompanied by a translation of the instructions in the language or languages of the country in which the machinery is to be used, and also a copy of the instructions in the original (country of origin) language.

BVAA Interpretation

> Installation, operating and maintenance instructions must be drawn up in the language of the end user by the manufacturer or his authorised representative in the Community, or by the person introducing the machine into the language area in question, accompanied by a copy in English.
>
> Although the Directive makes the final seller responsible, Members will no doubt have to provide both the English and foreign language versions and should be prepared for this.

9. Material Traceability

BVAA Interpretation

> Current practices operated in accordance with the appropriate Standards provide the necessary information to meet the requirements of the Directive.

CHECKLIST FOR HAZARDS IN ANNEX I, MACHINERY DIRECTIVE

Point	Hazard/item	EN-Standard
1.1	GENERAL REMARKS	
1.1.1	Definitions	
1.1.2	Principles of safety integration	
1.1.3	Materials and products	
1.1.4	Lighting	
1.1.5	Facilitate handling	
1.2	CONTROLS	
1.2.1	Safety and reliability of control systems	
1.2.2	Control devices	
1.2.3	Starting	
1.2.4	Stopping device	
1.2.5	Mode selection	
1.2.6	Failure of power supply	
1.2.7	Failure of control circuit	
1.2.8	Software	
1.3	PROTECTION AGAINST MECHANICAL HAZARDS	
1.3.1	Stability	
1.3.2	Risk of break-up during operation	
1.3.3	Risks due to falling or ejected objects	
1.3.4	Risks due to surfaces, edges or angles	
1.3.5	Risks related to combined machinery	
1.3.6	Risks relating to variations in rotational speed of tools	

Other standards (ISO, national)	Recommendations	Other measures taken

Point	Hazard/item	EN-Standard
1.3.7	Prevention of risks related to moving parts	
1.3.8	Choice of protection against risks related to moving parts	
1.4	REQUIRED CHARACTERISTICS OF GUARDS AND PROTECTION DEVICES	
1.4.1	General requirement	
1.4.2	Special requirements for guards	
1.4.2.1	Fixed guards	
1.4.2.2	Movable guards	
1.4.2.3	Adjustable guards restricting access	
1.4.3	Special requirements for protection devices	
1.5	PROTECTION AGAINST OTHER HAZARDS	
1.5.1	Electricity supply	
1.5.2	Static electricity	
1.5.3	Energy supply other than electricity	
1.5.4	Errors of fittings	
1.5.5	Extreme temperatures	
1.5.6	Fire	
1.5.7	Explosion	
1.5.8	Noise	
1.5.9	Vibration	
1.5.10	Radiation	
1.5.11	External radiation	

Other standards (ISO, national)	Recommendations	Other measures taken

Point	Hazard/item	EN-Standard
1.5.12	Laser equipment	
1.5.13	Emissions of dust, gases etc.	
1.5.14	Risk of being trapped in a machine	
1.5.15	Risk of slipping, tripping or falling	
1.6	MAINTENANCE	
1.6.1	Machinery maintenance	
1.6.2	Access operating position and servicing points	
1.6.3	Isolation of energy sources	
1.6.4	Operator intervention	
1.6.5	Cleaning of internal parts	
1.7	INDICATORS	
1.7.0	Information devices	
1.7.1	Warning devices	
1.7.2	Warning of residual risks	
1.7.3	Marking	
1.7.4	Instructions	
2	CERTAIN CATEGORIES OF MACHINERY	
2.1	AGRI-FOODSTUFFS MACHINERY	
2.2	PORTABLE HAND-HELD AND/OR HAND-GUIDED MACHINERY	
2.3	MACHINERY FOR WORKING WOOD AND ANALOGOUS MATERIALS	
3	HAZARDS DUE TO THE MOBILITY OF MACHINERY	
3.1	GENERAL	

Other standards (ISO, national)	Recommendations	Other measures taken

Point	Hazard/item	EN-Standard
3.1.1	Definition	
3.1.2	Lighting	
3.1.4	Design of machinery to facilitate its handling	
3.2	WORK STATIONS	
3.2.1	Driving position	
3.2.2	Seating	
3.2.3	Other places	
3.3	CONTROLS	
3.3.1	Control devices	
3.3.2	Starting/moving	
3.3.3	Travelling function	
3.3.4	Movement of pedestrian-controlled machinery	
3.3.5	Control circuit failure	
3.4	PROTECTION AGAINST MECHANICAL HAZARDS	
3.4.1	Uncontrolled movements	
3.4.2	Risk of break-up during operation	
3.4.3	Rollover	
3.4.4	Falling objects	
3.4.5	Means of access	
3.4.6	Towing devices	
3.4.7	Transmission of power between self-propelled machinery (or tractor) and recipient machinery	
3.4.8	Moving transmission parts	

Other standards (ISO, national)	Recommendations	Other measures taken

Point	Hazard/item	EN-Standard
3.5	PROTECTION AGAINST OTHER HAZARDS	
3.5.1	Batteries	
3.5.2	Fire	
3.5.3	Emission of dust, gases etc.	
3.6	INDICATIONS	
3.6.1	Signs and warning	
3.6.2	Marking	
3.6.3	Instruction handbook	
4	HAZARDS DUE TO A LIFTING OPERATION	
4.1	GENERAL REMARKS	
4.1.1	Definitions	
4.1.2	Protection against mechanical hazards	
4.1.2.1	Risks due to lack of stability	
4.1.2.2	Guide rails and rail tracks	
4.1.2.3	Mechanical strength	
4.1.2.4	Pulleys, drums, chains or ropes	
4.1.2.5	Separate lifting accessories	
4.1.2.6	Control of movements	
4.1.2.7	Handling of loads	
4.1.2.8	Lighting	
4.2	SPECIAL REQUIREMENTS FOR MACHINERY WHOSE POWER SOURCE IS OTHER THAN MANUAL EFFORT	
4.2.1	Controls	
4.2.1.1	Driving position	

Other standards (ISO, national)	Recommendations	Other measures taken

Point	Hazard/item	EN-Standard
4.2.1.2	Seating	
4.2.1.3	Control devices	
4.2.1.4	Loading control	
4.2.2	Installation guided by cables	
4.2.3	Risks to exposed persons. Means of access to driving position and intervention points	
4.2.4	Fitness for purpose	
4.3	MARKING	
4.3.1	Chains and ropes	
4.3.2	Lifting accessories	
4.3.3	Machinery	
4.4	INSTRUCTION HANDBOOK	
4.4.1	Lifting accessories	
4.4.2	Machinery	
5	MACHINERY FOR UNDERGROUND WORK	
5.1	RISKS DUE TO LACK OF STABILITY	
5.2	MOVEMENT	
5.3	LIGHTING	
5.4	CONTROL DEVICES	
5.5	STOPPING	
5.6	FIRE	
5.7	EMISSION OF DUST, GASES ETC.	
6	HAZARDS DUE TO THE LIFTING OR MOVING OF PERSONS	
6.1	GENERAL	

Other standards (ISO, national)	Recommendations	Other measures taken

Point	Hazard/item	EN-Standard
6.1.1	Definitions	
6.1.2	Mechanical strength	
6.1.3	Loading control for types of device moved by power other than human strength	
6.2	CONTROLS	
6.2.1	Where safety requirements do not impose other solutions	
6.2.2	Carrier in position other than rest position	
6.2.3	Excess speeds hazard	
6.3	RISKS OF PERSONS FALLING FROM THE CARRIER	
6.3.1	Personal protective equipment	
6.3.2	Trapdoors	
6.3.3	Tilting of floor	
6.4	CARRIER FALLING OR OVERTURNING	
6.4.1	Prevention of falling or overturning	
6.4.2	Acceleration and braking	
6.5	MARKINGS	

Other standards (ISO, national)	Recommendations	Other measures taken

APPENDIX (B)

STANDARDS IN SUPPORT OF THE SUPPLY OF MACHINERY (SAFETY) REGULATIONS 1992

The DTI has formally notified the publication of the following British Standards as Transposed Harmonised Standards for the purpose of the Supply of Machinery (Safety) Regulations 1992

BS EN 292 Safety of machinery - Basic concepts, general principles for design, **Part 1: 1991** basic terminology, methodology.

BS EN 292 Safety of machinery - Basic concepts, general principles for design, **Part 2: 1991** technical principles and specifications.

BS EN 60204 Safety of machinery - Electrical equipment of machines - **Part 1: 1992** Specification for general requirements.

BS EN 294 Safety of machinery - Safety distances to prevent danger zones being **1992** reached by the upper limbs.

BS EN 349 Safety of machinery - Minimum gaps to avoid crushing of parts of the **1993** human body.

BS EN 418 Safety of machinery - Emergency stop equipment, functional aspects **1992** - principles for design.

BS EN 457 Safety of machinery - Auditory danger signals - general requirements, **1992** design and testing (ISO 7731: 1986 modified).

BS 7228 Industrial robots. Recommendations for safety. (EN 775: 1992; **Part 6: 1992** SIO 10218: 1992 modified). **(Amended 1 March 1992)**

BS 4196 Sound power levels of noise sources. Precision methods for **Part 1: 1991** determination of sound power levels for broad-band sources in **(Amended** reverberation rooms. **1 April 1992)** (EN 23741: 1991; ISO 3741: 1988).

BS 4196 Sound power levels of noise sources. Precision methods for **Part 2: 1991** determination of sound power levels for discrete-frequency and **(Amended** narrow-band sources in reverberation rooms. **1 April 1992)** (EN 23742: 1991; ISO 3741: 1988).

BS EN 289 Safety of machinery - Rubber and plastics machinery - Compression 29 transfer moulding presses- Safety requirements for the design.

APPENDIX (C)

SUGGESTED FORMS FOR PREPARING THE CONTENT OF THE TECHNICAL FILE

Technical File

General Information — **Form I,a**

Manufacturer

Name: _____

Address: _____

Phone/Fax: _____

Contact person: _____

Machine

Make: _____

Type: _____

Serial No: _____

Year of construction: _____

Safety requirements

(Machinery Directive, Annex I)
List of Hazards (*)

_____

_____

_____

_____

Technical File

Detailed Information — **Form I,b**

Harmonised Standards and/or National Technical Standards used in Design and Construction (*)

_____

_____

_____

_____

Enclosures

- Operation Manual/Instructions
- Specification drawings incl.control circuits
- _____
- _____

(*) For these points, a copy of the checklist of Step 1 is a good reference

Technical File

Detailed Information

Form II

Machine Part/Hazard (describe each (group of) hazards(s) separately)

_____

_____

_____

_____

Enclosures

- Detailed Drawings
- Calculation Notes
- Test Results, internal/external
- _____
- _____

Technical File

In case of series manufacturers

Form III

Internal Measures Ensuring Conformity with Machinery Directive of Each Machine

_____

_____

_____

_____

_____

_____

APPENDIX (D)

A RECOMMENDED FORM FOR EC Declaration of Conformity:

EC Declaration of Conformity

(Annex II.C Safety Components)

We _____

_____

_____

_____

_____

(Supplier's name, address, other identification)

Declare under our sole responsibility that the machine

Make _____

Type _____

Serial no(s) _____

Year of construction _____

As described in the attached documentation is in conformity with the Machinery Directive 89/392 as amended by the EC Directives 91/368 and 93/44 (specify other applicable directives, if any).

Name: _____

First name: _____

Position :_____

(Block capitals)

_____ _____

Place, Date of Issue **Signature**

Enclosures: * List of relevant provisions of Annex I of the Machinery Directive (corresponds to Technical File, Form I,a)

APPENDIX (E)

RECOMMENDED COMPLETION OF A DECLARATION OF INCORPORATION

A. NAME: A N Other
ADDRESS: 23 The Avenue
Blossom Trading Estate
Kingsland
Wilts AB1 2CD
England

DECLARATION OF INCORPORATION

EXPLANATORY NOTES

Name and address of "the responsible person" - "responsible person" means:

(a) The **manufacturer** of that machinery;
(b) The **manufacturer's authorised representative** established in the Community; or
(c) **Where the manufacturer is not established in the Community** and either:
(i) He has not appointed an authorised representative established in the Community; or
(ii) His authorised representative established in the Community is not the supplier of that machinery

The person who first supplied the relevant machinery in the Community, and, in this definition, **"the manufacturer" includes any person who assembles machinery or parts thereof to form relevant machinery.**

B. DESCRIPTION OF THE MACHINERY OR PARTS

Manufacturer's Name: A N Other Valve Type: Ball-reduced Bore Model: "Sure Stop" Fig No. : BV 123 Pressure Class: PN 20 End Connections: Flanged ANSI Class 150 Materials of Construction: Body - Carbon Steel
Ball -Stainless Steel Seats -PTFE

EXPLANATORY NOTE

No specific requirements on descriptions of machinery or parts is given in the Machinery Directive or the Supply of Machinery (Safety) Regulations. The example given is a BVAA recommendation. Members are at liberty to use their own interpretation but a standard format would be preferable.

C. RELEVANT MACHINERY HAVING AN EC TYPE EXAMINATION

Not applicable.

EXPLANATORY NOTE

Valve, actuator and valve/actuator assembly is not relevant machinery and does not require an EC Type examination by an Approved Body or Notified Body.

D. RELEVANT MACHINERY - CERTIFICATE OF ADEQUACY

Not applicable.

EXPLANATORY NOTE

Valve, actuator and valve/actuator assembly is not relevant machinery and does not require an EC Type examination by an Approved Body or Notified Body.

E. LIST OF TRANSPOSED HARMONISED STANDARDS EXPLANATORY NOTE

"TRANSPOSED HARMONISED STANDARD" means a standard which has been agreed in Europe and adopted by the UK, i.e. BS EN 292 Part 2: 1991.

F. STATEMENT - the machinery to which this Declaration of Incorporation relates must not be put into service until the relevant machinery into which it is to be incorporated has been declared in conformity with the provisions of the Machinery Directive.

G. Signature _____ Name _____

Position or Job Title _____ EXPLANATORY NOTE

IDENTIFICATION OF THE PERSON EMPOWERED TO SIGN - this is intended only to avoid illegible signatures. It is therefore sufficient to write in BLOCK CAPITALS, below the signature, the name, first name and position of the person signing the declaration.

DECLARATION OF INCORPORATION

A. Name: ……..

Address: ……..

……..

……..

……..

B. Description of the machinery or parts

Manufacturer's Name ……..……
Valve Type …….
Model …….
Fig No. ……
Pressure Class …….
End Connections …….
Materials of Construction ……...

C. Relevant Machinery having an EC Type Examination

……
……
……
……

D. Relevant Machinery - Certificate of Adequacy

……
……
……
……

E. List of Transposed Harmonised Standards

……
……
……
……

DOI(I) (Cont'd)

DECLARATION OF INCORPORATION (Continued)

F. STATEMENT

The machinery to which this Declaration of Incorporation relates must not be put into service until the relevant machinery into which it is to be incorporated has been declared in conformity with the provisions of the Machinery Directive.

G. Signature …….

Name …….

Position or Job Title …….

EXPLANATORY NOTES

A. Name and address of "the responsible person" means:

(a) The **manufacturer** of that machinery
(b) The **manufacturer's authorised representative** established in the Community; or
(c) **Where the manufacturer is not established in the Community** and either:
(i) He has not appointed an authorised representative established in the Community; or
(ii) His authorised representative established in the Community is not the supplier of that machinery

The person who first supplied the relevant machinery in the Community, and, in this definition**, "the manufacturer" includes any person who assembles machinery or parts thereof to form relevant machinery.**

B. No specific requirements on description of machinery or parts is given in the Machinery Directive or the Supply of Machinery (Safety) Regulations. The example given is a BVAA recommendation. Members are at liberty to use their own interpretation but a standard format would be preferable.

C. Valve, actuator and valve/actuator assembly is not relevant machinery and does not require an EC type examination by an Approved Body or Notified Body.

D. See C above.

E. "Transposed Harmonised Standard" means a standard which has been agreed in Europe and adopted by the UK (i.e. BS EN 292 Part 2: 1991).

G. "Identification of the person empowered to sign" - this is intended only to avoid illegible signatures. It is therefore sufficient to write in BLOCK CAPITALS, below the signature, the name, first name and position of the person signing the declaration.

APPENDIX F

GENERAL		
Mina Joshi Richard Lawson	**DTI DTI**	**0171 215 1592 0171 215 1970**
ENFORCEMENT		
John Gillespie	**HSE**	**0151 951 4743**
ENGINEERING MATTERS		
Ray Ward Richard Wilson Tom Treble	**HSE HSE HSE**	**0151 951 4657 0151 951 4776 0151 951 4655**
LITERATURE ONLY		
DTI Hotline		**01179 444**
Product Standards - Machinery		**888**
HMSO		**0171 873 9090**

CONTACT NUMBERS FOR QUESTIONS ON THE SUPPLY OF MACHINERY (SAFETY) REGULATIONS

The Supply of Machinery (Safety) Regulations 1992 ISBN 0-11-025719-7

APPENDIX G

BIBLIOGRAPHY

Source

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2. Amending Directive (91/368/EEC) HMSO 20 June 1991 ISBN 0 - 11 - 968991 X

3. Amending Directive (93/44/EEC) HMSO 14 June 1993 ISBN 0 - 11 - 911737 - 1

4. Statutory Instrument: Health and Safety HMSO 1992 No. 3073 - The Supply of Machinery ISBN 0 - 11 - 025719 - 7 (Safety) Regulations 1992

5. 1994 No. 2063 - The Supply of Machinery HMSO (Safety) Regulations (Amendment) 1994 ISBN 0 - 11 - 045063 - 9

6. Community Legislation on Machinery HMSO Comments on Directive 89/392/EEC and ISBN - 92 - 826 5692 - 6 Directive 91/368/EEC. Edition 1993 Pierre Massimi and Jean-Pierre Van Gheluwe

7. Product Standards - Machinery UK Mrs Mina Joshi
Regulations, April 1993, DTI DTI Tel: 0171 215 1592

8. Machinery Update, November 1993 DTI

The BVAA considers it essential for Members to have publications 4, 5 and 6 available for reference

NOTES

NOTES

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