



***IGEM/G/1 Edition 2
Communication 1765***

***Defining the end of the Network, a meter
installation and installation pipework***



*Founded 1863
Royal Charter 1929
Patron: Her Majesty the Queen*





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© The Institution of Gas Engineers and Managers
IGEM House
High Street
Kegworth
Derbyshire, DE74 2DA
Tel: 0844 375 4436
Fax: 01509 678198
Email: general@igem.org.uk

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SECTION 1 : INTRODUCTION

- 1.1 This Standard provides a framework and a consistent approach for the arrangement of Natural Gas distribution mains, services, primary meter installations and installation pipework.

IGEM/G/1 Edition 2 supersedes the 1st, 2nd, and 3rd Impressions (Communication 1733), of IGEM/G/1 which are obsolete.

- 1.2 For the purposes of this Standard, definitions have been agreed between parties involved in the introduction of competition into metering activities in Great Britain. The Institution of Gas Engineers and Managers (IGEM) consulted appropriate regulatory bodies (HSE, Ofgem and Gas Safe Register), associations of gas transporters (GTs), suppliers and shippers, meter asset managers (MAMs), installation pipework owners and installers and manufacturers of pipe, meters, regulators and other equipment associated with gas systems at the end of networks.

- 1.3 Arising from the provision in the Gas Act 1986 (as amended) (see clause 3.1.2), metering services and, in particular, the provision of gas supply meters at gas consumers' premises are provided by competitive service providers under the revision of gas metering arrangements (RGMA).

In order to facilitate the operation of the market and to provide necessary controls, a number of industry documents have been published which include:

- OFGAS Gas Metering Definitions
- OFGAS Codes of Practice, CoP1/a, 1/b and 1/c, which specify standards and processes applicable to meter installations
- MAM Code of Practice (MAMCoP)
- OFGAS Meter Competition Focus Group – Definitions Expert Group Final Report, June 2000, which defines the competitive area for meter installations.

Work dataflows across the industry need to conform to the relevant parts of the Review of Gas Metering Arrangements (RGMA) processes managed by Supply Point Administration Agreement (SPAA Ltd).

IGEM/G/1 Edition 2 builds on the above documents to provide additional and supplementary detail to assist parties who have statutory duties under legislation in the development of arrangements and to assist in the provision of a safe and secure supply of gas to consumers.

- 1.4 In defining the end of the network, there are repercussions with respect to the boundaries of responsibility between a GT/gas conveyor with network management responsibilities, the meter installation owner/MAM and the installation pipework owner/operator. Notwithstanding the Notes (below), the document is, to IGEM's best knowledge, consistent with the current editions of:

- Gas Safety (Management) Regulations (GS(M)R)
- Gas Safety (Installation and Use) Regulations (GS(I&U)R)
- Pipeline Safety Regulations (PSR)
- Pressure Systems Safety Regulations (PSSR).

Note 1: This Standard contains specific terminology which may differ from the legal meaning.

Note 2: This Standard does not include all possible configurations, and the law may allow deviation from the common practices shown. For example, the designation of an "emergency control" in a particular situation will, ultimately, rest on the facts of the case, that is primarily on intended use by a consumer of gas.

1.5 This Standard recognises inconsistency between relevant official CoPs, guidance to legislation, and national and industry standards. They attempt to consolidate the varied use of different terms across such publications, to provide a base for their future amendment and to represent current best practice. These publications include:

- HSL56
- HSL80
- HSL81
- HSL82
- HSL122
- HSL144
- OFGAS Gas Metering Definitions
- OFGAS CoPs: 1/a, 1/b and 1/c (see Sub-Section 1.3)
- SPAA MAMCoP
- IGEM/GM/5
- IGEM/GM/6
- IGEM/GM/7A
- IGEM/GM/7B
- IGE/GM/8
- IGE/UP/1
- IGE/UP/1A
- IGEM/UP/1B
- IGEM/UP/1C
- IGEM/UP/2
- IGEM/TD/1
- IGE/TD/3
- IGE/TD/4
- IGEM/TD/13
- IGEM/G/5
- BS 6400-1
- BS 6400-2
- BS 6891.

Appendix 2 provides detail of these publications.

Any definitions relating to this Standard but not contained within it are given in IGEM/G/4, which is free to access and download from www.igem.org.uk.

- 1.6 This Standard makes use of the terms “must”, “shall” and “should” when prescribing particular requirements. Notwithstanding Sub-Section 1.7:
- the term “must” identifies a requirement by law in Great Britain (GB) at the time of publication
 - the term “shall” prescribes a requirement which, it is intended, will be complied with in full and without deviation
 - the term “should” prescribes a requirement which, it is intended, will be complied with unless, after prior consideration, deviation is considered to be acceptable.

Such terms may have different meanings when used in legislation, or Health and Safety Executive (HSE) Approved Codes of Practice (ACoPs) or guidance, and reference needs to be made to such statutory legislation or official guidance for information on legal obligations.

- 1.7 The primary responsibility for compliance with legal duties rests with the employer. The fact that certain employees, for example “responsible engineers”, are allowed to exercise their professional judgement does not allow employers to abrogate their primary responsibilities. Employers must:
- have done everything to ensure, so far as it is reasonably practicable, that “responsible engineers” have the skills, training, experience and personal qualities necessary for the proper exercise of professional judgement
 - have systems and procedures in place to ensure that the exercise of professional judgement by “responsible engineers” is subject to appropriate monitoring and review
 - not require “responsible engineers” to undertake tasks which would necessitate the exercise of professional judgement that is not within their competence. There should be written procedures defining the extent to which “responsible engineers” can exercise their professional judgement. When “responsible engineers” are asked to undertake tasks which deviate from this, they should refer the matter for higher review.

- 1.8 This Standard was published in August 2013.

SECTION 2 : SCOPE

2.1 This Standard is applicable to all Natural Gas systems and provides a framework for the arrangement of gas distribution mains, services, primary meter installations, installation pipework and includes:

- definitions for the end of the gas network, the primary meter installation (including any associated regulator) and installation pipework
- illustrations of a range of standard arrangements which are deemed appropriate for the gas industry as it currently operates and which will simplify any new arrangements that are required, to ensure a safe and secure supply of gas to a consumer
- illustrations of a range of legacy arrangements, which are not recommended with respect to their design or layout
- identification of boundaries and interfaces.

Note: The definition of these boundaries and interfaces is essential so that relevant information can be exchanged between organisations and persons who have a duty to ensure a safe and secure supply of gas to premises.

2.2 The term "regulator" is intended to mean "meter regulator" unless otherwise stated.

2.3 All pressures are gauge pressures unless otherwise stated.

2.4 Italicised text is informative and does not represent formal requirements.

2.5 Appendices are informative and do not represent formal requirements unless specifically referenced in the main sections by the terms "must", "shall" or "should".

SECTION 3 : LEGISLATION, CODES OF PRACTICE AND OFFICIAL GUIDANCE

3.1 GENERAL

3.1.1 This Standard assumes that organisations and persons are aware of relevant legislation. It does not change, replace or supersede the requirements of legislation nor any arrangements that are in place to manage the supply of gas, nor does it detail any duties or requirements that may arise as a conveyor of gas on the Network; the operator of a pipeline; the user of a pressure system; the owner of a primary meter; an installer or a gas consumer.

3.1.2 Relevant to this Standard are:

- Gas Act 1986 which has been amended by:
 - Competition and Service (Utilities) Act 1992 (clause 43)
 - Gas Act 1995
 - Competition Act (1998 (c.41)
 - Utilities Act 2000 (c.27)
 - Gas (Exemptions) Order 2011.
- Gas Safety (Installation and Use) Regulations 1998 (GS(I&U)R), as amended
- Gas Safety (Management) Regulations 1996 (GS(M)R)
- Health and Safety at Work etc. Act 1974 (HSWA)
- Management of Health and Safety at Work Regulations 1999 (MHSWR)
- Pipeline Safety Regulations 1996 (PSR)
- Pressure Systems Safety Regulations 2000 (PSSR)
- HSL56
- HSL80
- HSL81
- HSL82
- HSL122.

3.2 SELECTED EXTRACTS FROM THE REGULATIONS

Note: This Standard does not always use precisely the definitions given below (see Sub-Section 1.4). Where definitions for terms within this Sub-Section are not given in Section 4 or 5, the definition as given in the appropriate Regulations, AcoP or Guidance applies.

3.2.1 GS(M)R

Regulation 6 (8)

"A person who conveys gas in a network shall, where he is requested to do so by a person proposing to carry out work in relation to a gas fitting, provide him with information about the operating pressures of the gas at the outlet of a service pipe."

3.2.1.2 *Guidance 2 (1)*

"An emergency control is a valve intended for use by a consumer for turning off the gas supply in an emergency. An emergency control will always be found at the end of a service pipe but additional controls may be found in premises, for example, if the primary meter is moved to assist a disabled person."

"A service pipe connects the distribution main to individual premises, terminating at the outlet of the emergency control valve immediately upstream of the installation pipework and other gas fittings."

3.2.1.3 *Guidance 2 (2)*

"A network starts from a processing facility, storage facility or interconnector importing gas into Great Britain but does not include it. However, where a pipeline, for the time being, is used to convey gas from Great Britain, it will be necessary for the gas transporter on that pipeline to prepare a safety case in accordance with these Regulations. The end of the network is the outlet of the emergency control at the end of the service pipe."

3.2.2 **GS(I&U)R**

3.2.2.1 *Part A Regulation 2 (1)*

"'Service pipe' means a pipe for distributing gas to a premises from a distribution main, being a pipe between the distribution main and the outlet of the first emergency control downstream from the distribution main."

3.2.2.2 *Part B Regulation 9 (1)*

"No person shall for the first time enable gas to be supplied for use in any premises unless there is provided an appropriately sited emergency control to which there is adequate access."

3.2.2.3 *Part B Regulation 9 (2)*

"Any person installing an emergency control shall ensure that:

- a) any key, lever or hand-wheel of the control is securely attached to the operating spindle of the control;
- b) any such key or lever is attached so that –
 - 1) the key or lever is parallel to the axis of the pipe in which the control is installed when the control is in the open position; and
 - 2) where the key or lever is not attached so as to move only horizontally, gas cannot pass beyond the control when the key or lever has been moved as far as possible downwards;
- c) either the means of operating the key or lever is clearly and permanently marked or a notice in permanent form is prominently displayed near such means as to indicate when the control is open and when the control is shut; and
- d) any handwheel indicates the direction of opening or closing of the control."

3.2.2.4 *Part B Regulation 9 (3)*

"Where a person installs an emergency control which is not adjacent to a primary meter, he shall immediately thereafter prominently display on or near the means of operating the control a suitably worded notice in permanent form indicating the procedure to be followed in the event of an escape of gas."

3.2.2.5 *Part B Regulation 14 (1)*

“No person shall install a primary meter or meter bypass used in connection with a primary meter unless –

- 1) there is a regulator controlling the pressure of gas supplied through the meter or the bypass, as the case may be, which provides adequate automatic means for preventing the gas fittings connected downstream side of the regulator from being subjected to a pressure greater than that for which they were designed;
- 2) where the normal pressure of the gas supply is 75 mbar or more at the inlet to the regulator, there are also adequate automatic means for preventing, in case the regulator should fail, those gas fittings from being subjected to such a greater pressure; and
- 3) where the regulator contains a relief valve or liquid seal, such valve or seal is connected to a vent pipe of adequate size and so installed that it is capable of venting safely.”

3.2.3 **Guidance to GS(I&U)R (HSL56)**

3.2.3.1 *Guidance 2 (Paragraph 3)*

“The emergency control is a valve intended, and readily accessible, for use by the consumer, i.e. end-user, of gas. For example, a valve located in a meter room which is locked for security, and accessible only to a landlord, gas supplier, gas transporter and/or emergency services, cannot be regarded as an ‘emergency control’. Where a meter is fitted, the meter control valve may be used as the emergency control, subject to certain conditions – see Regulation 9 (1) and paragraph 92.”

3.2.3.2 *Guidance 2 (Paragraph 4)*

“Although there may be more than one emergency control serving a particular premises, it is the outlet of the first emergency control downstream of the distribution main which marks the interface between a ‘service pipe’ and ‘installation pipework’. There is a similar interface in other related legislation, e.g., the Pipeline Safety Regulations 1996.”

3.2.3.3 *Guidance 9 (1) (Paragraph 92)*

“Whenever a new supply of gas is made available for use in premises, an emergency control should also be provided; where there is a gas meter, the meter control may serve as the emergency control as long as the conditions (as follows) are met. Each individual premises (e.g. each house, flat, maisonette, or caravan) using a supply of gas should be provided with an emergency control, whether or not that premises contains a gas meter. The emergency control should be situated as near as is reasonably practicable to the point where the pipe supplying gas enters the premises. It should be readily accessible to all consumers, i.e. gas users, in the premises concerned (e.g. not located in a basement or cellar); therefore, a valve located in a meter-room which is normally locked, and accessible only to a landlord, gas supplier, gas transporter and/or emergency services, for example, cannot act as an ‘emergency control’. An emergency control should be protected against unauthorised operation (i.e. tamper-proof) but if situated in a locked compartment, the occupier(s) of the premises should be provided with keys (see also Regulation 13(3)–(4)). In such cases, the emergency service provider should also hold keys where access cannot be ensured for them at all times, e.g. through keys held by the responsible person for premises.”

3.2.3.4 *Guidance 9 (2) (Paragraph 96)*

"The emergency control can operate by a key, lever or a handwheel which should be securely attached to the operating spindle of the control. Where a key or lever is used, the 'open' position should be when the key or lever is parallel with the axis of the pipe. The 'off' position should be approximately one quarter turn of the key or lever to the right or left, where the key or lever moves in the vertical plane, the move to the 'off' position should be in the downwards direction. Either the key or lever itself, or a nearby permanent notice, should indicate how the control operates and when the gas is 'off' and 'on'."

"Controls operated by handwheels need to indicate the opening and/or closing directions for the control."

3.2.4 **PSR**

Regulation 3

"A pipeline for supplying gas to premises shall be deemed not to include anything downstream of an emergency control."

"Emergency control means a valve for shutting off the supply of gas in an emergency, being a valve intended for use by a consumer of gas."

SECTION 4 : PRIMARY DEFINITIONS

4.1 INTRODUCTION

The definitions in this section represent IGEM's interpretation of legislation in Great Britain and the Ofgas Gas Metering Definitions. In general, all the definitions accommodate all "standard gas supply arrangements" (see Sub-Section 6.2 and Appendix 3). However, some also accommodate "legacy gas supply arrangements" (see Sub-Section 6.3 and Appendix 4).

For this Standard, the following definitions shall be adopted.

4.1.1 NETWORK

The Network comprises interconnecting pipes which are downstream of a gas reception terminal, processing facility, storage facility or importing interconnector, and used for the conveyance of gas to consumers as defined in GS(M)R.

Note: A "network" is part of the "Network".

4.1.2 END OF THE NETWORK

The end of the Network is the outlet of the emergency control valve (ECV) as defined by relevant legislation and explained further in clause 4.1.3.

4.1.3 EMERGENCY CONTROL VALVE (ECV)

The ECV is a valve (see GS(I&U)R Regulation 2), not being an "additional emergency control valve" (AECV) (see clause 4.1.4) for shutting off the supply of gas in an emergency, intended for use by a consumer of gas and being installed at the end of a service or distribution main. The outlet of the ECV terminates, and thus defines the end of, the Network.

Note 1: The gas conveyer (which is, normally, a GT) has to agree the designation of the ECV which defines the end of the Network. For all "standard gas supply arrangements", the ECV will be upstream of all components of the meter installation.

Note 2: For further information, see HSL56.

Note 3: Advice on installation and labelling of ECVs is given in IGEM/GM/6, IGE/GM/8, IGEM/UP/2 and IGE/TD/4, as appropriate.

4.1.4 ADDITIONAL EMERGENCY CONTROL VALVE (AECV)

The AECV is a valve, not being the ECV, for shutting off the supply of gas in an emergency, intended for use by a consumer of gas. AECV(s) may be located within either the meter installation or installation pipework and, as such, may not isolate all of the consumer's pipework or meter installation.

Note 1: An AECV does not denote the end of the Network and is always fitted downstream of the ECV. The existence of an AECV does not affect the existence of an ECV (which is always required).

Note 2: Advice on installation and labelling AECVs is given in IGEM/GM/6, IGE/GM/8, BS 6891, IGEM/G/5, IGEM/UP/2 and IGE/TD/4, as appropriate.

4.1.5 METER INSTALLATION

4.1.5.1

A meter installation includes a primary meter and any associated volume conversion system, valve, filter, meter regulator or pressure regulating installation (PRI), flexible connection, meter by-pass, interconnecting pipework, fitting and support.

4.1.5.2 A meter installation commences at either:

- the outlet of the first common valve through which all the gas entering the meter installation will pass and which is upstream of the first meter regulator/PRI (including any filtration) upstream of the meter or,
- in the case of a meter upstream of a regulator/PRI, or of an unregulated supply, the outlet of the first common valve upstream of the primary filter(s) for the meter installation.

4.1.5.3 A meter installation terminates at:

- the outlet connection of the meter (if a meter outlet valve (MOV) is not fitted) or,
- the outlet of the meter outlet adaptor if fitted or,
- the outlet of the MOV (or outlet spool) if fitted or,
- the outlet of the tee fitted downstream of the meter where a meter by-pass rejoins the pipework on the outlet of the meter or,
- in the case of a meter upstream of a regulator/PRI, the outlet of the regulator/PRI outlet valve (PRIOV) or spool piece for a regulator by-pass or, where a twin stream regulator/PRI is installed, the outlet of the tee where the two streams join or,
- the outlet of the meter installation outlet valve (MIOV) if fitted or,
- in the case of a semi-concealed domestic meter with a flexible connection downstream of the meter, the outlet of the meter box outlet adaptor,

whichever is appropriate for the system.

Note: Legacy gas supply meter installations will not necessarily comply with these arrangements (see Appendix 4).

4.1.6 **INSTALLATION PIPEWORK**

Installation pipework is any pipework for conveying gas for a particular consumer and any associated valve or other gas fitting, including any pipework used to connect a gas appliance to other installation pipework and any shut off device at the inlet to the appliance, but it does not mean:

- a service pipe
- a pipe comprised in a gas appliance
- any valve attached to a storage container or cylinder
- service pipework.

Note: For the purposes of this Standard:

- *installation pipework also does not mean pipework within a meter installation*
- *for 'standard gas supply arrangements' (see Appendix 3) installation pipework also does not mean pipework upstream of a meter installation.*

SECTION 5 : SECONDARY DEFINITIONS

This Standard should be read alongside IGEM/G/4 "Definitions for the gas industry", which is freely available to download from www.igem.org.uk.

arrangements	Processes, practices and contracts that an organisation or person has in place to manage their undertaking.
consumer	End-user of gas.
duty holder	Person or organisation having responsibility in law.
gas conveyor	<p>Person who conveys gas through pipes and the Network and having duties under GS(M)R and PSR and who may also hold a Gas Transportation Licence.</p> <p><i>Note 1: There cannot be a gas conveyor on pipe designated as installation pipework.</i></p> <p><i>Note 2: The Gas Act 1986 Schedule 2a, paragraph 1a permits a landlord to be a gas conveyor without a gas transporter's licence. However they would still be required to comply with GS(M)R(unless that pipework is adopted formally by an upstream conveyor); PSR and GS(I&U)R.</i></p>
gas fitting	<p>Gas pipework, valves (other than the ECV), regulators, meters, fittings, apparatus and appliances designed for use by consumers of gas for heating, lighting, cooking or other purposes for which gas can be used, but it does not mean:</p> <ul style="list-style-type: none"> ● any part of a distribution main or service (pipe) ● any part of a pipeline upstream of a distribution main or service (pipe) ● a gas storage vessel ● a gas cylinder or cartridge designed to be disposed of when empty.
gas meter	<p>Instrument designed to measure, memorise and display the quantity of fuel gas (volume or mass) that has passed through it.</p> <p><i>Note: A "smart meter" is defined as a meter with additional functionalities, for example two way data communication.</i></p>
gas transporter (GT)	Company, licensed by Ofgem, which transports gas through its network on behalf of a gas shipper.
inlet isolation valve (IIV)	Valve, not being an ECV and always installed upstream of an ECV, to enable isolation of gas to all parts of a building, by an authorised party.
legacy gas supply arrangements	<p>Configurations that are not consistent with the installations defined as being standard gas supply arrangements.</p> <p><i>Note: Such legacy arrangements were usually installed prior to the publication of IGE/G/1 Edition 1.</i></p>
legacy meter owner	GT which provided a meter under licence conditions in a configuration not consistent with "standard gas supply arrangements". Usually, this would have been prior to the publication of IGE/G/1 Edition 1.

meter asset manager (MAM)	Organisation that works on behalf of the meter owner and is responsible for ensuring the design; installation; commissioning; maintenance; removal and disposal of gas supply meter installations is performed by suitably qualified persons or organisations, in accordance with industry standards and legislation.
meter by-pass	Pipe and associated gas fittings used to supply gas to a consumer without passing through the meter.
meter inlet valve (MIV)	Valve fitted upstream of, and adjacent to, a gas meter to shut off the supply of gas.
meter installation inlet valve (MIIV)	Valve fitted upstream of all the other components of a meter installation to shut off the supply of gas.
meter installation outlet valve (MIOV)	Valve fitted downstream of all the other components of a meter installation to shut off the supply of gas through a meter installation.
meter outlet adaptor	Fitting which facilitates the connection of a gas consumer's installation pipework to the outlet of a meter.
meter outlet valve (MOV)	Valve fitted downstream of, and adjacent to, a gas meter to shut off the supply of gas.
meter owner	Person owning a meter and/or a meter installation (see also "legacy meter owner").
meter regulator	Device located in close proximity to a primary meter which is solely to control the pressure of the gas within the measurement device and/or installation pipework and is not separated from the measurement device by buried pipework, except short lengths specifically included in the installation design for access purposes.
operator (of a gas pipeline)	Person who is to have or (once gas is conveyed) has, control over the conveyance of gas in the pipeline.
pipeline isolation valve (PIV)	Either a Distribution Main Valve (DMV) or a Service Isolation Valve (SIV) (see IGEM/G/4).
premises (HSA 1974)	<p>"Premises" includes any place, and in particular, includes:</p> <ul style="list-style-type: none"> (a) any vehicle, vessel, aircraft or hovercraft, (b) any installation on land (including the foreshore and other land intermittently covered by water), any offshore installation, and any other installation (whether floating, or resting on the seabed or the subsoil thereof), or resting on other land covered with water or the subsoil thereof, and (c) any tent or movable structure. <p><i>Note: "Domestic premises" means premises occupied as a private dwelling (including any garden, yard, garage, outhouse or other appurtenance of such premises which is not used in common by the occupants of more than one such dwelling), and "non-domestic premises" are construed accordingly.</i></p>

primary meter	Gas meter, the index reading of which constitutes the basis of charge for all gas supplied through that meter. <i>Note: This definition is a variation of the legal definition taken from GS(I&U)R.</i>
pressure regulating installation (PRI)	Assembly of equipment designed to regulate, or reduce, the pressure of gas. A PRI comprises all pressure-containing and associated equipment between the upstream face of the PRIIV and the downstream face of the PRIOV.
standard gas supply arrangements	Gas supply arrangements that are recognised by IGEM/G/1, as being preferred arrangements.
regulator/PRI inlet valve (PRIIV)	Valve fitted upstream of, and adjacent to, a regulator/PRI to shut off the supply of gas.
regulator/PRI outlet valve (PRIOV)	Valve fitted downstream of, and adjacent to, a regulator/PRI to shut off the supply of gas.
shipper	Holder of a licence from Ofgem to purchase gas from a gas producer, sell it to a gas supplier and employ a GT to transport the gas to the premises of the user. <i>Note: This definition is a variation of the legal definition taken from GS(M)R.</i>
sub-deduct arrangements	As described within the Uniform Network Code; Transportation principal document; Section G Supply Points Sub-Section 1.8.
supplier	Holder of a licence from Ofgem to supply gas to any premises through a primary meter. <i>Note: This definition is a variation of the legal definition taken from GS(M)R.</i>

SECTION 6 : STANDARD AND LEGACY GAS SUPPLY ARRANGEMENTS

6.1 GENERAL

6.1.1 All new system designs shall comply with the standard gas supply arrangements in IGEM/G/1 and all applicable technical Standards.

6.2 STANDARD GAS SUPPLY ARRANGEMENTS

6.2.1 The end of the Network and the inlet and outlet of a meter installation need to be defined so that the boundaries of responsibility are clear and arrangements between duty holders made which shall ensure a safe and secure supply of gas.

6.2.2 The meter installation and installation pipework shall be wholly downstream of the outlet of the ECV. All standard gas supply arrangements require this to be the case, in which case the meter installation and installation pipework are not part of the Network. The owner or user of the meter installation and of the installation pipework would not, therefore, be conveyors of gas on the Network and would not be subject to the general duties required of a gas conveyor under GS(M)R.

Similarly, the owner or user of a meter installation and of installation pipework are not operators of a pipeline and, therefore, are not subject to the requirements of PSR. However, the meter installation may be subject to the requirements of PSSR.

Note: The provision of distribution mains, services, meter installations and installation pipework in accordance with standard gas supply arrangements and in compliance with the relevant requirements of legislation assist in the development and maintenance of arrangements.

6.2.3 Appendix 3, Figures 2 to 27 inclusive illustrate standard gas supply arrangements with a number of generic examples. The examples are not exhaustive and, where other types of system are provided, the principles set out in Appendix 3 shall be applied.

6.3 LEGACY GAS SUPPLY ARRANGEMENTS

6.3.1 The following should be noted:

- Some existing arrangements will not be fully consistent with the specified definitions and standard gas supply arrangements but, nevertheless, the interface between duty holders has to be defined. Appendix 4 illustrates a number of examples of such arrangements. These suggestions do not form any part of any definition in this document, unless otherwise stated. For such systems, any arrangements may be complex
- Several of the arrangements shown in Appendix 4 (for example Figure 30) depict installation pipework upstream of the meter installation but downstream of the ECV, and including pressure regulating equipment. Responsibility/ownership of this pipework will vary from installation to installation in that the pipework may be owned or be the responsibility of the upstream GT, another GT, or the premises owner. In particular, the MAM would need to establish which party owns/is responsible for such pipework
- In other arrangements, (for example Figure 33) the elements of the meter installation are located upstream of the designated ECV, that is they are on the network. In some cases, these elements will be the responsibility of/owned by the upstream GT but, in other cases, there may be another gas conveyor operating this part of the supply network. For clarity, such diagrams differentiate between the upstream network (denoted 'distribution network') and the downstream network (denoted 'network').

6.3.2 Parties agreeing to continue with legacy gas supply arrangements should be fully aware of the legal issues involved. In particular, compliance with GS(M)R, PSR and GS(I&U)R must be achieved. If all parties do not agree to the legacy arrangements, the owner of the legacy arrangement (usually the premises owner) shall instigate a process aimed at changing the arrangement such that all parties involved accept them. Such changes shall aim to approach standard gas supply arrangements and not further diverge from them. Where legacy arrangements continue in-service following agreement, the demarcation of responsibility shall be recorded for future reference.

Note: Ideally, such changes would lead to the full achievement of standard gas supply arrangements but it is recognised that this may not always be practicable or commercially acceptable to all parties.

Legacy gas supply arrangements are not considered appropriate for new gas supply arrangements.

APPENDIX 1 : ACRONYMS AND ABBREVIATIONS

ACRONYMS AND ABBREVIATIONS

ACoP	Approved Code of Practice
AECV	additional emergency control valve
CoP	Code of Practice
DMV	distribution main valve
ECV	emergency control valve
FIV	filter inlet valve
FOV	filter outlet valve
GC	gas chromatograph
GS(I&U)R	Gas Safety (Installation and Use) Regulations
GS(M)R	Gas Safety (Management) Regulations
GT	gas transporter
HSWA	Health and Safety at Work etc. Act
HSE	Health and Safety Executive
IGE	Institution of Gas Engineers
IGEM	Institution of Gas Engineers and Managers
IV	isolation valve
IIV	inlet isolation valve
MAM	meter asset manager
MBV	meter by-pass valve
MHSWR	Management of Health and Safety at Work Regulations
MIIV	meter installation inlet valve
MIOV	meter installation outlet valve
MIV	meter inlet valve
MOP	maximum operating pressure
MOV	meter outlet valve
OFGAS	Office of Gas Supply
Ofgem	Office of Gas and Electricity Markets
PE	polyethylene
PIV	pipeline isolation valve
PRI	pressure regulating installation
PRIIV	PRI inlet valve
PRIOV	PRI outlet valve
PSR	Pipeline Safety Regulations
PSSR	Pressure Systems Safety Regulations
RD	rotary displacement
RGMA	review of gas metering arrangements
SIV	service isolation valve
SPAA	Supply Point Administration Agreement
UNC	Uniform Network Code.

APPENDIX 2 : REFERENCES

A2.1 LEGISLATION

- Gas Act 1986 which has been amended by:
 - Competition and Service (Utilities) Act 1992 (clause 43)
 - Gas Act 1995
 - Competition Act (1998 (c.41)
 - Utilities Act 2000 (c.27)
 - Gas (Exemption) Order 2011
- Gas Safety (Installation and Use) Regulations 1998, as amended
- Gas Safety (Management) Regulations 1996
- Health and Safety at Work etc. Act 1974
- Management of Health and Safety at Work Regulations 1999
- Pipeline Safety Regulations 1996
- Pressure Systems Safety Regulations 2000.

Note: See these at www.legislation.gov.uk.

A2.2 OFFICIAL CODES OF PRACTICE

- OFGAS Codes Of Practice 1/a, 1/b and 1/c
- MAMCoP.

Note: See at Ofgem's website www.ofgem.gov.uk.

A2.3 INSTITUTION OF GAS ENGINEERS AND MANAGERS (IGEM)

- IGEM/GM/5
Edition 2 Selection, installation and use of electronic gas meter volume conversion systems
- IGEM/GM/6
Edition 2 Non-domestic meter installations. Standard designs
- IGEM/GM/7A Electrical connections for gas metering equipment
- IGEM/GM/7B Hazardous area classification for gas metering equipment
- IGE/GM/8 Non-domestic meter installations. Flow rate exceeding $6 \text{ m}^3 \text{ h}^{-1}$ and inlet pressure not exceeding 38 bar
- IGE/UP/1
Edition 2
Reprint with Amendments Strength testing, tightness testing and purging of industrial and commercial gas installations
- IGE/UP/1A
Edition 2
Reprint with Amendments Strength testing, tightness testing and direct purging of small low pressure industrial and commercial Natural Gas installations
- IGEM/UP/1B
Edition 3 Tightness testing and direct purging of small liquefied petroleum gas/air, natural gas and liquefied petroleum gas installations
- IGEM/UP/1C Strength testing, tightness testing and direct purging of Natural Gas and LPG meter installations
- IGEM/UP/2
Edition 2 Installation pipework on industrial and commercial premises
- IGE/UP/9
Edition 2 Application of Natural Gas and fuel oil systems to gas turbines and supplementary and auxiliary fired burners
- IGEM/TD/1
Edition 5 Steel pipelines for high pressure gas transmission

- IGE/TD/3
Edition 4 Steel and PE pipelines for gas distribution
- IGE/TD/4
Edition 4 PE and steel gas services and service pipework
- IGEM/TD/13
Edition 2 Pressure regulating installations for transmission and distribution systems
- IGEM/G/4 Definitions for the gas industry
- IGEM/G/5
Edition 2 Gas installations in flats and other multi-dwelling buildings.

A2.4

BRITISH STANDARDS INSTITUTION (abbreviated titles)

- BS 6400-1 Domestic meter installations (≤ 75 mbar)
- BS 6400-2 Domestic meter installations (> 75 mbar ≤ 2 bar)
- BS 6891 Domestic pipework installations.
- CP 331 Part 2 & 3 Code of practice for installation of pipes and meters for town gas

A2.5

HSE

- HSL56 Safety in the installation and use of gas systems and appliances (ACoP and Guidance)
- HSL80 A guide to the Gas Safety (Management) Regulations 1996 (Guidance)
- HSL81 Design, construction and installation of gas service pipes (ACoP and Guidance)
- HSL82 A guide to the Pipelines Safety Regulations 1996 (Guidance)
- HSL122 Safety of pressure systems (ACoP).

A2.6

OTHER DOCUMENTS

- OFGAS Gas Metering Definitions 1996
- Meter Competition Focus Group - Definitions Expert Group Final Report 30th June 2000

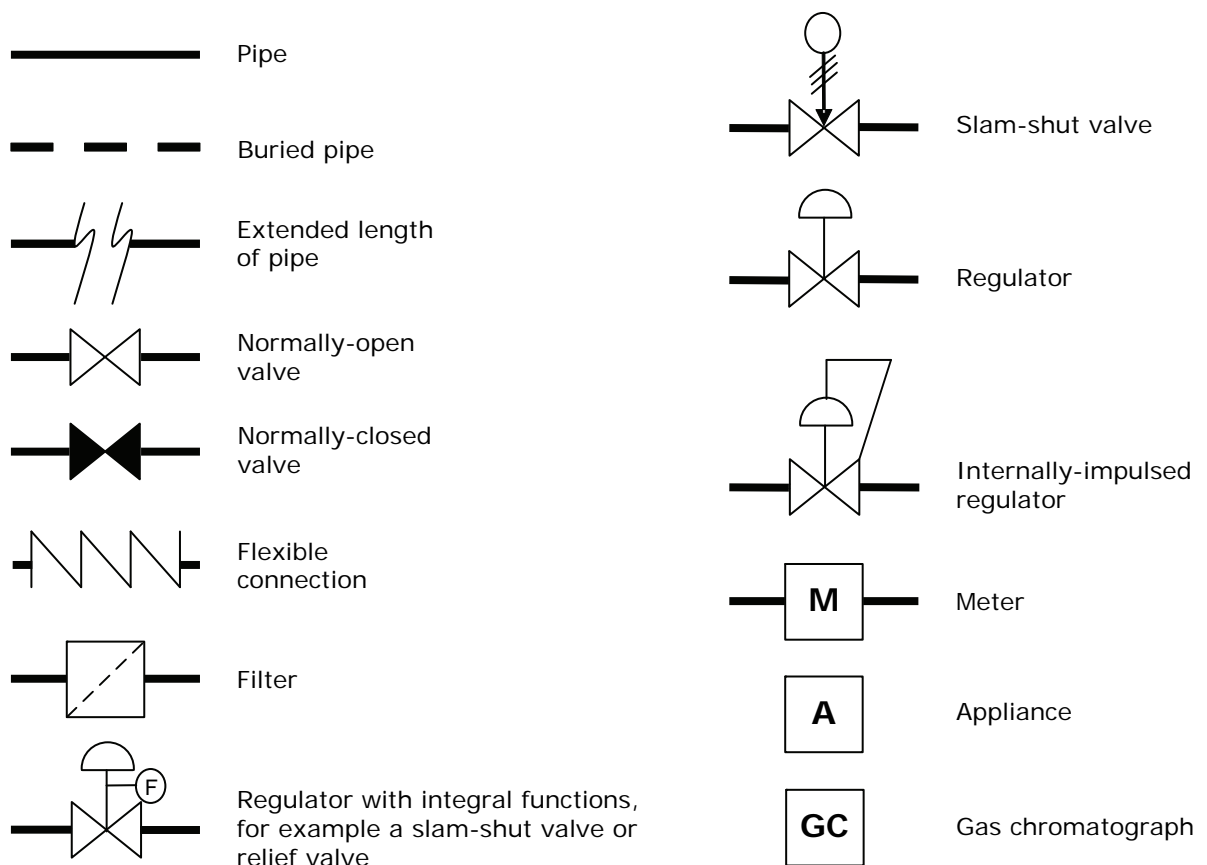
APPENDIX 3 : STANDARD GAS SUPPLY ARRANGEMENTS

All new system designs are required to comply with current Standards.

Figure 2 provides an overview of which Standards apply to the different types of equipment in different applications.

The examples which follow show a number of more detailed line diagrams of standard gas supply arrangements and indicate the boundary between the Network, a meter installation and installation pipework.

The line diagrams do not show all aspects of a system, but simply the major components. Components such as creep relief valves, top hat strainers, purge and vent points, installation pre-heating, equipotential bonding etc. generally are not shown.



Colour Code for Figures 2 to 27:





-  Pipeline which is on the Network
-  Parts of a meter installation not on the Network
-  Installation pipework
-  Ancillary plant

FIGURE 1 - KEY TO FIGURES 2 to 27

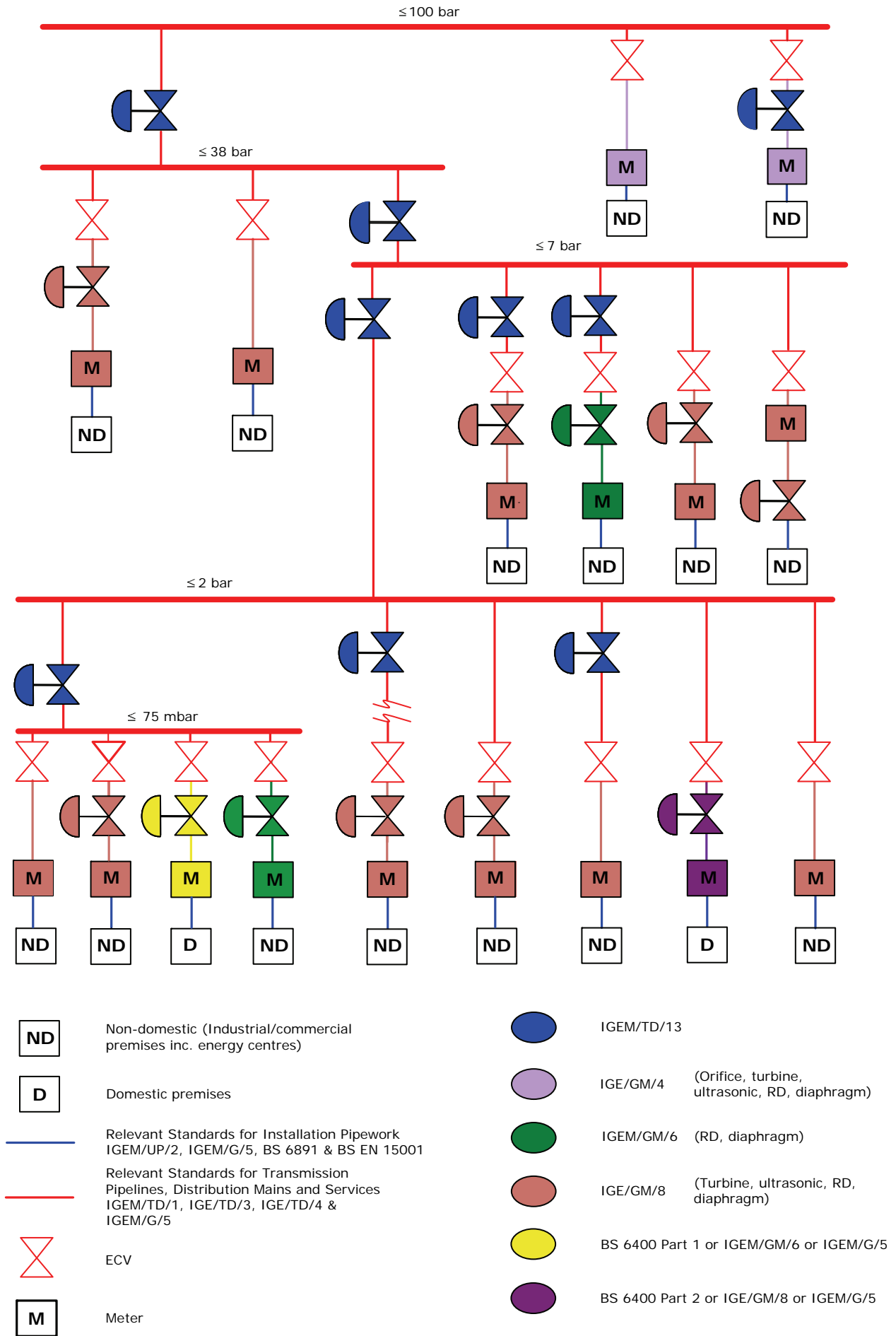
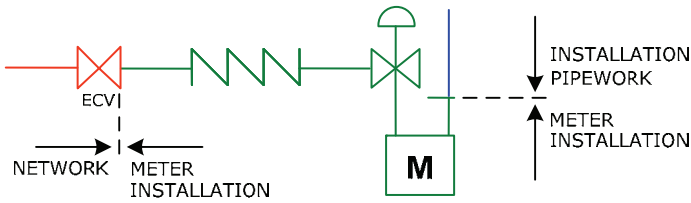


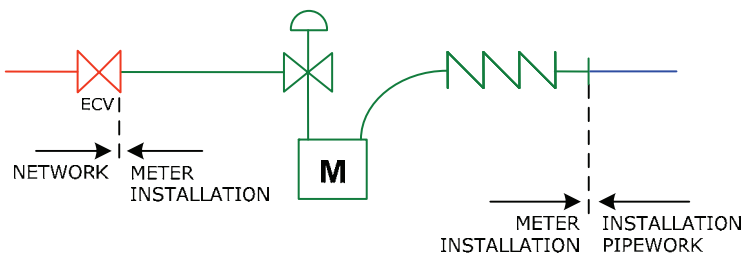
FIGURE 2 - NORMATIVE DOCUMENTS APPLICABLE TO STANDARD GAS SUPPLY ARRANGEMENTS



Functional standards:

- Network to IGE/TD/3 or IGE/TD/4
- meter installation to BS 6400-1
- installation pipework to BS 6891 and/or IGE/UP/2.

FIGURE 3 - STANDARD ARRANGEMENT
SUPPLY MOP ≤ 75 mbar
CAPACITY $\leq 6 \text{ m}^3 \text{ h}^{-1}$

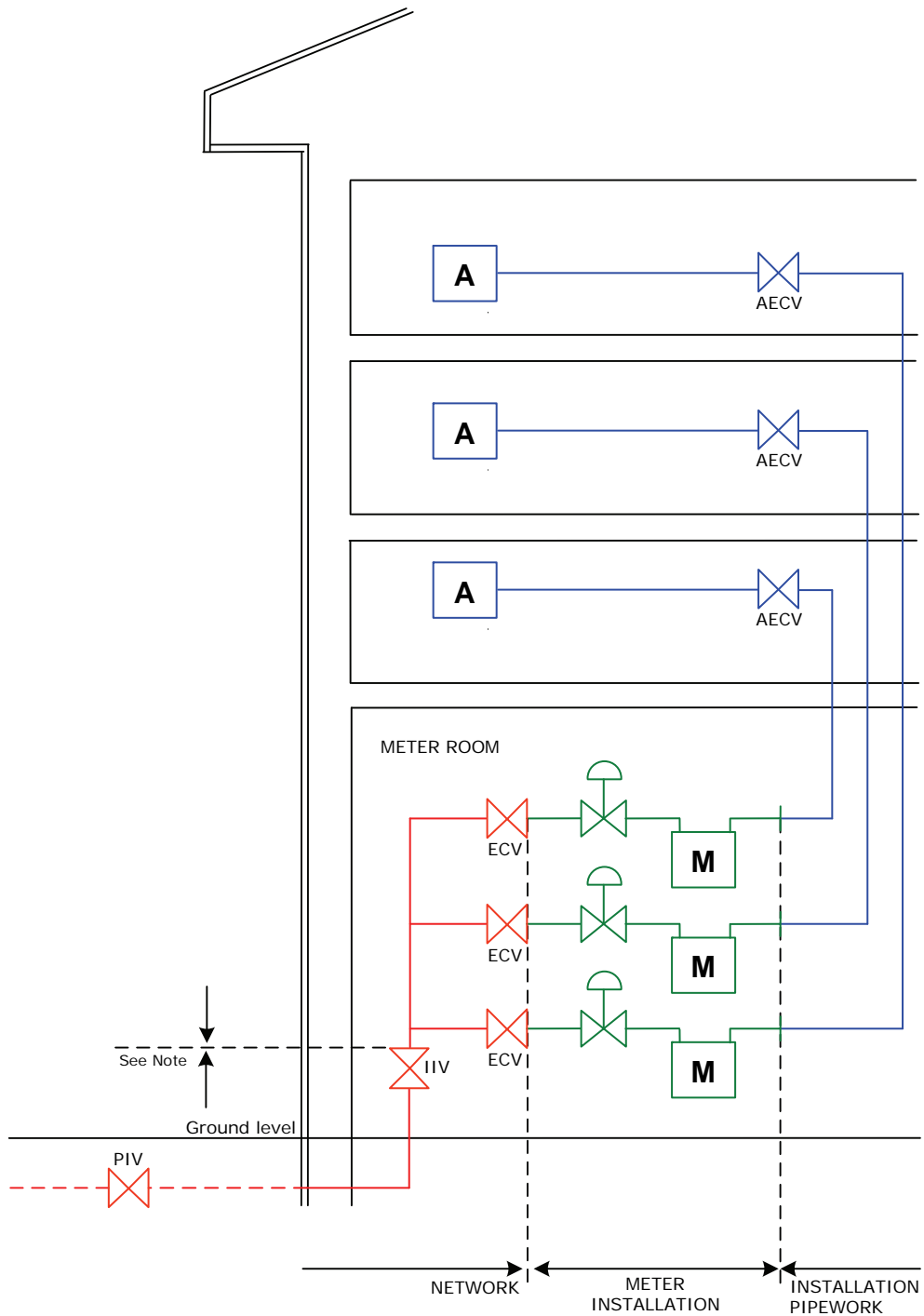


Note: If the outlet flexible connection is fitted on the inlet as Figure 3, the installation becomes as Figure 3.

Functional standards:

- Network to IGE/TD/3 or IGE/TD/4
- meter installation to BS 6400-1
- installation pipework to BS 6891 and/or IGE/UP/2.

FIGURE 4 - STANDARD ARRANGEMENT
SUPPLY MOP ≤ 75 mbar
SEMI-CONCEALED INSTALLATION
CAPACITY $\leq 6 \text{ m}^3 \text{ h}^{-1}$



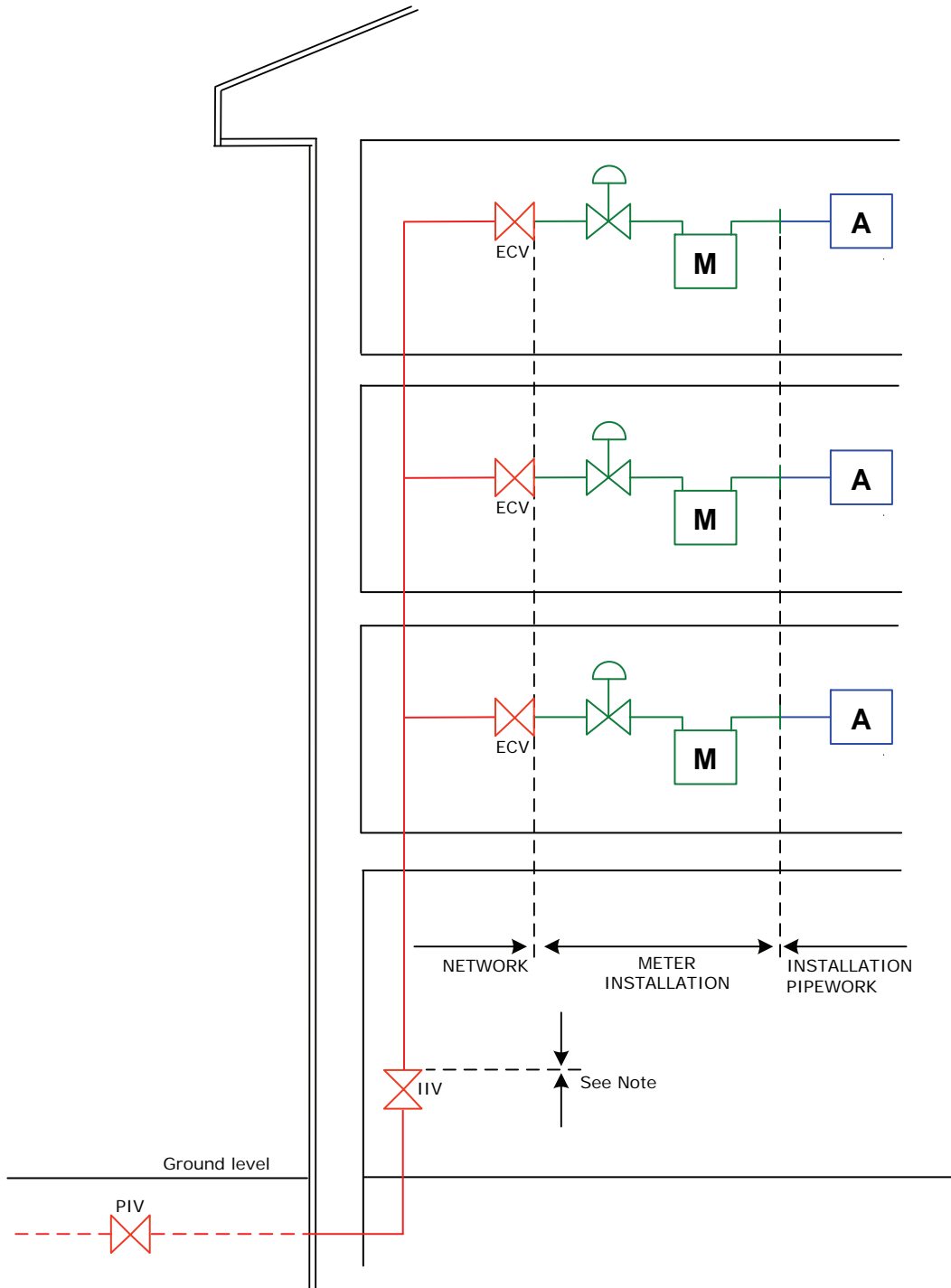
Functional standards:

- Network to IGE/TD/3 or IGE/TD/4
- meter installation to BS 6400-1, IGEM/GM/6 or IGE/GM/8
- installation pipework to BS 6891 and/or IGEM/UP/2
- generally to IGEM/G/5.

Note: In some situations, a conveyor may change to another GT or to an organisation such as a local authority at the outlet of the IIV. If there is more than one conveyor on the Network, arrangements between conveyors include exchange of information to ensure a suitable pressure is available at the end of the Network and all parties have to be aware of their statutory duties.

The alternative arrangement is that the upstream conveyor (usually a GT) is asked to adopt the pipework between the outlet of the IIV and the outlet of each ECV.

**FIGURE 5 - STANDARD ARRANGEMENT
SUPPLY MOP \leq 75 mbar
LOCATED IN HIGH RISE BUILDINGS (BANKED METERS)**



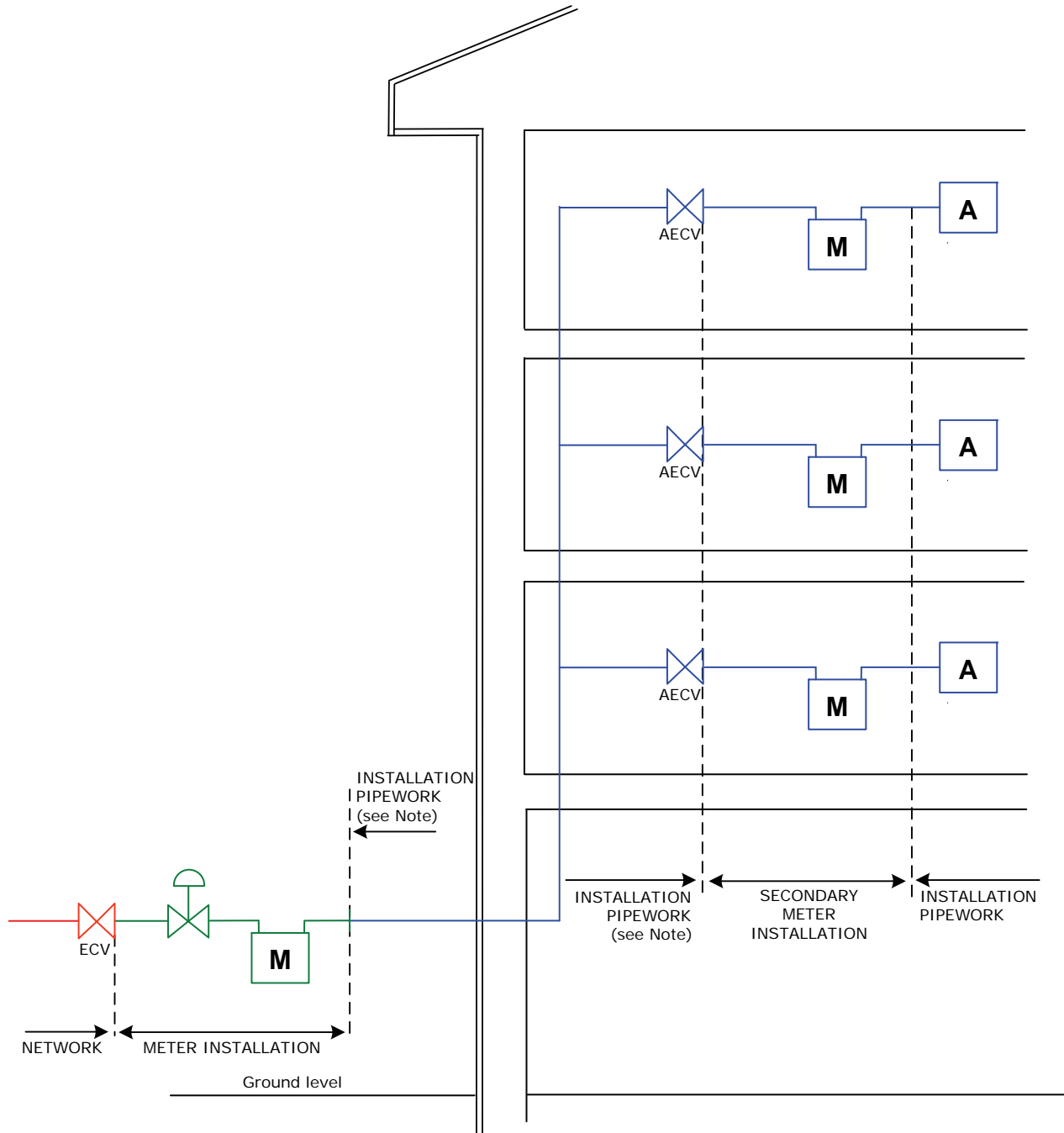
Functional standards:

- Network to IGE/TD/3 or IGE/TD/4
- meter installation to BS 6400-1, IGEN/GM/6 or IGE/GM/8
- installation pipework to BS 6891 and/or IGEN/UP/2
- generally to IGEN/G/5.

Note: In some situations, a conveyor may change to another GT or to an organisation such as a local authority at the outlet of the IIV. If there is more than one conveyor on the Network, arrangements between conveyors include exchange of information to ensure a suitable pressure is available at the end of the Network and all parties have to be aware of their statutory duties.

The alternative arrangement is that the upstream conveyor (usually a GT) is asked to adopt the pipework between the outlet of the IIV and the outlet of each ECV.

**FIGURE 6 - STANDARD ARRANGEMENT
SUPPLY MOP \leq 75 mbar
LOCATED IN HIGH RISE BUILDINGS (SINGLE SERVICE
RISER TO INDIVIDUAL METERS)**

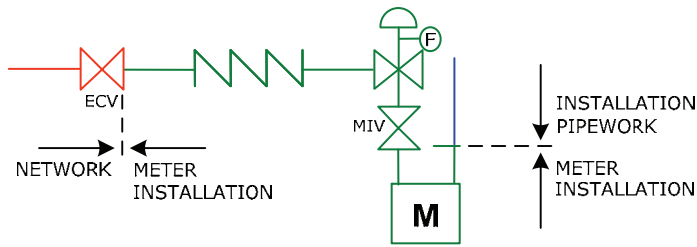


Functional standards:

- Network to IGE/TD/3 or IGE/TD/4
- ECV to IGE/TD/4, IGE/G/5
- meter installation to BS 6400-1, IGE/GM/6 or IGE/GM/8
- installation pipework to BS 6891 and/or IGE/UP/2
- generally to IGE/G/5.

Note: The ECV has to be accessible to premises occupiers. Where this is not achievable or there are any other aspects of the proposed ECV that will not comply with relevant legislation and standards, this arrangement is not appropriate and designs such as given in Figure 5 and Figure 6 will need to be considered, see clauses 3.2.2 and 3.2.3.

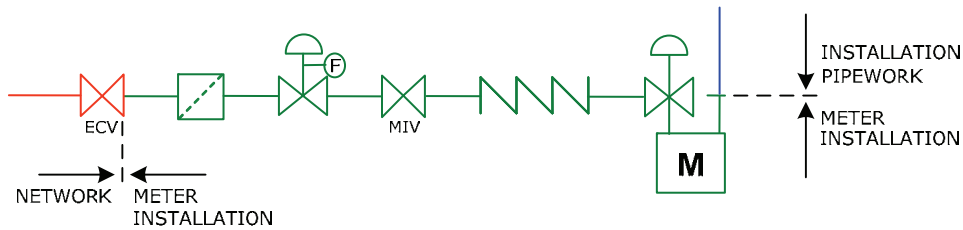
**FIGURE 7 - STANDARD ARRANGEMENT
TYPICAL REMOTE BULK METER
AECVs AND SECONDARY METERS WITHIN INDIVIDUAL
DWELLINGS**



Functional standards:

- Network to IGE/TD/3 or IGE/TD/4
- meter installation to BS 6400-2
- installation pipework to BS 6891 and/or IGE/UP/2.

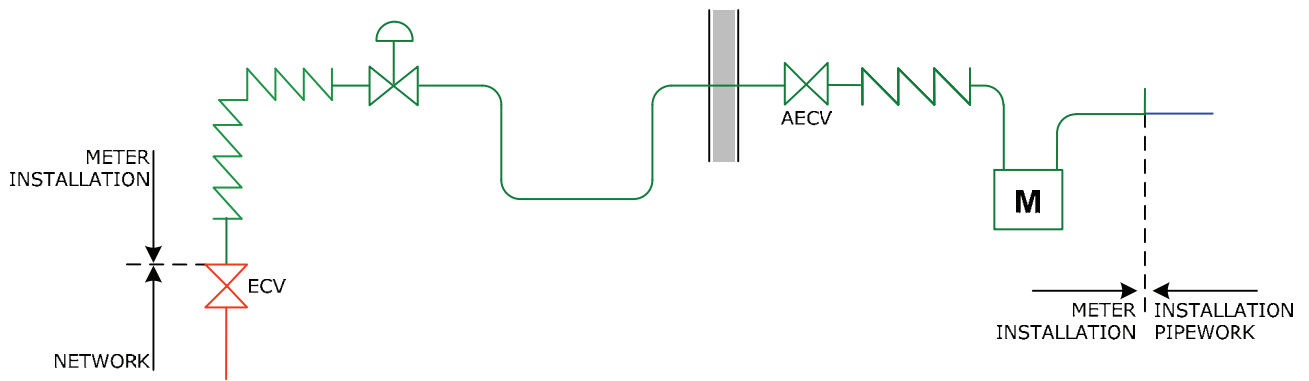
FIGURE 8 - STANDARD ARRANGEMENT
75 mbar < SUPPLY MOP ≤ 2 bar
CAPACITY ≤ 6 m³ h⁻¹ (see also Figure 9)



Functional standards:

- Network to IGE/TD/3 or IGE/TD/4
- meter installation to BS 6400-2
- installation pipework to BS 6891 and/or IGE/UP/2.

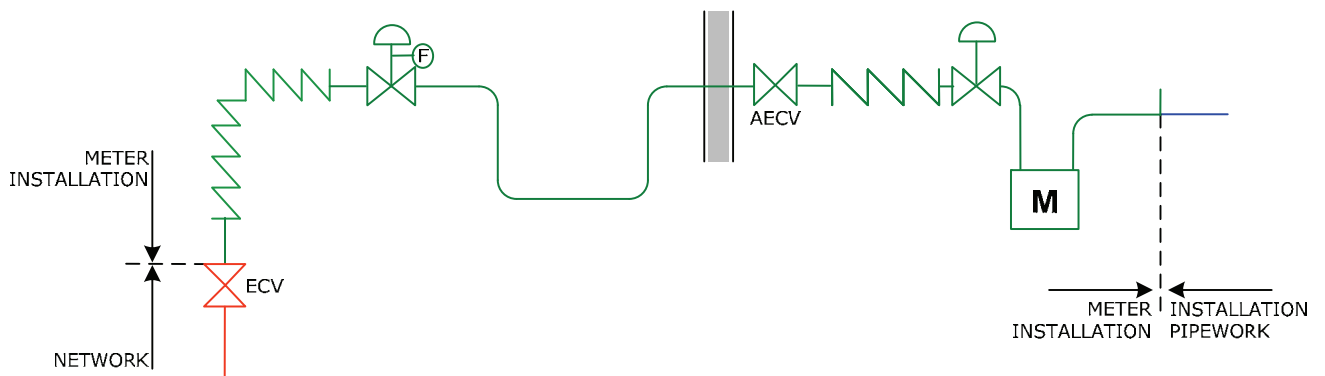
FIGURE 9 - STANDARD ARRANGEMENT
75 mbar < SUPPLY MOP ≤ 2 bar
CAPACITY ≤ 6 m³ h⁻¹ (see also Figure 8)



Functional standards:

- Network to IGE/TD/3 or IGE/TD/4
- meter installation to BS 6400-1
- installation pipework to BS 6891.

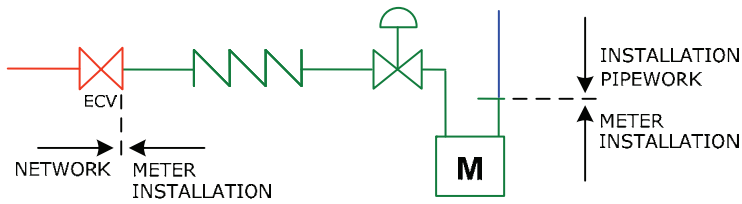
**FIGURE 10 - STANDARD ARRANGEMENT
SUPPLY MOP \leq 75 mbar
METER RE-POSITIONED INSIDE THE PREMISES
CAPACITY \leq 6 m³ h⁻¹**



Functional standards:

- Network to IGE/TD/3 or IGE/TD/4
- meter installation to BS 6400-2
- installation pipework to BS 6891.

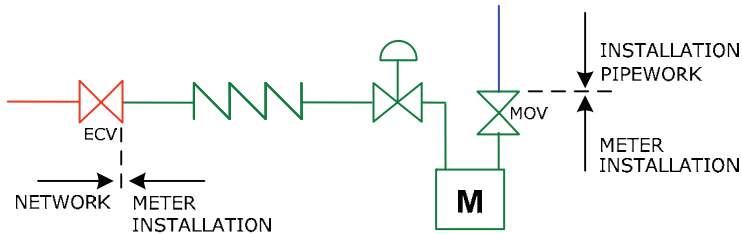
**FIGURE 11 - STANDARD ARRANGEMENT
75 MBAR < SUPPLY MOP \leq 2 BAR
METER RE-POSITIONED INSIDE THE PREMISES
CAPACITY \leq 6 M³ H⁻¹**



Functional standards:

- Network to IGE/TD/3 or IGE/TD/4
- meter installation to IGEM/GM/6 or IGE/GM/8
- installation pipework to IGEM/UP/2.

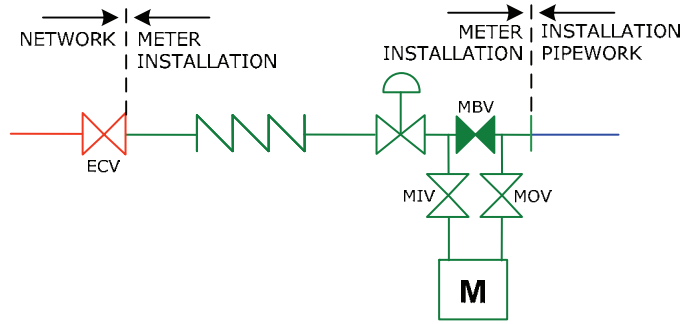
FIGURE 12 - STANDARD ARRANGEMENT
SUPPLY MOP ≤ 75 mbar
DIAPHRAGM METER
 $6 \text{ m}^3 \text{ h}^{-1} < \text{CAPACITY} \leq 16 \text{ m}^3 \text{ h}^{-1}$



Functional standards:

- Network to IGE/TD/3 or IGE/TD/4
- meter installation to IGEM/GM/6 or IGE/GM/8
- installation pipework to IGEM/UP/2.

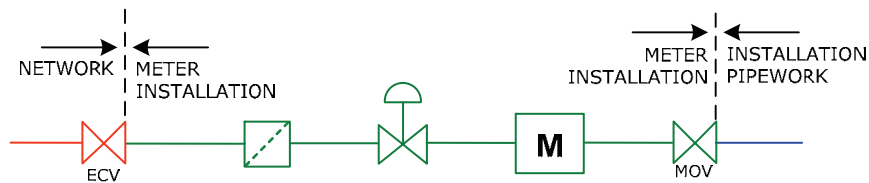
FIGURE 13 - STANDARD ARRANGEMENT
SUPPLY MOP ≤ 75 mbar
DIAPHRAGM METER
 $\text{CAPACITY} > 16 \text{ m}^3 \text{ h}^{-1}$



Functional standards:

- Network to IGE/TD/3 or IGE/TD/4
- meter installation to IGE/GM/8
- installation pipework to IGEM/UP/2.

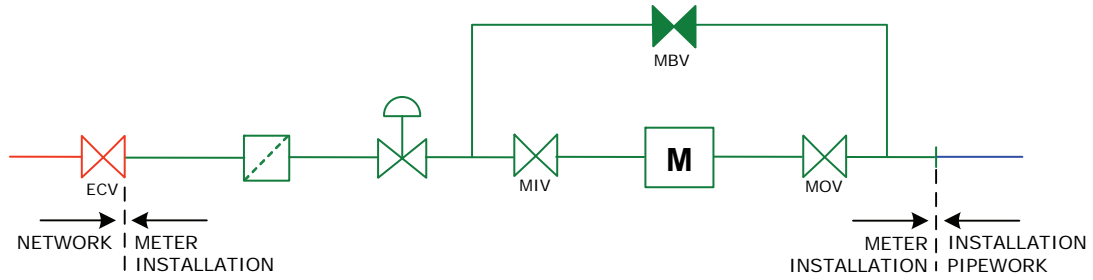
FIGURE 14 - STANDARD ARRANGEMENT
SUPPLY MOP ≤ 75 mbar
DIAPHRAGM METER WITH BY-PASS
CAPACITY $> 6 \text{ m}^3 \text{ h}^{-1}$



Functional standards:

- Network to IGE/TD/3 or IGE/TD/4
- meter installation to IGEM/GM/6 or IGE/GM/8
- installation pipework to IGEM/UP/2.

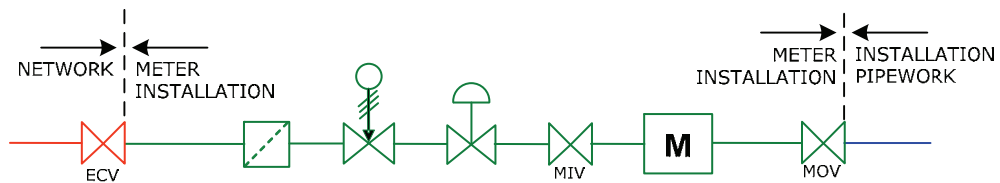
FIGURE 15 - STANDARD ARRANGEMENT
SUPPLY MOP ≤ 75 mbar
RD OR TURBINE METER
CAPACITY $> 6 \text{ m}^3 \text{ h}^{-1}$



Functional standards:

- Network to IGE/TD/3 or IGE/TD/4
- meter installation to IGE/GM/8
- installation pipework to IGEM/UP/2.

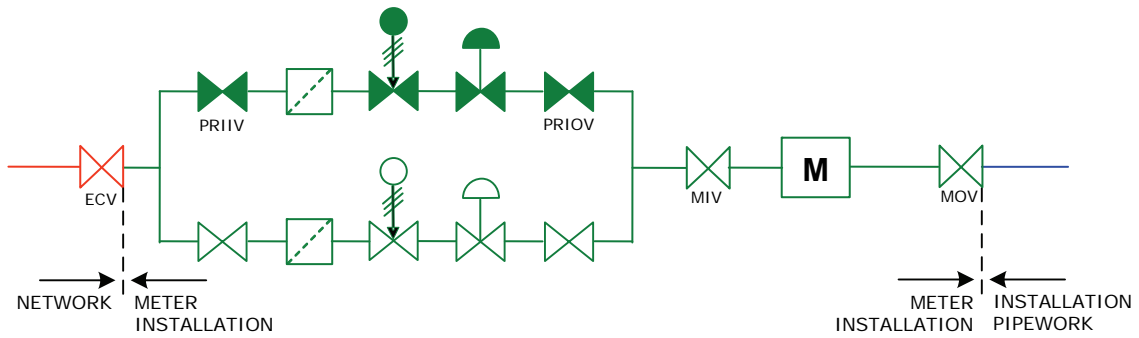
FIGURE 16 - STANDARD ARRANGEMENT
SUPPLY MOP ≤ 75 mbar
RD OR TURBINE METER WITH BY-PASS
CAPACITY > 6 m³ h⁻¹



Functional standards:

- Network to IGE/TD/3 or IGE/TD/4
- meter installation to IGE/GM/8
- installation pipework to IGEM/UP/2.

FIGURE 17 - STANDARD ARRANGEMENT
75 mbar < SUPPLY MOP ≤ 2 bar
SINGLE STREAM
DIAPHRAGM, RD OR TURBINE METER
CAPACITY > 6 m³ h⁻¹

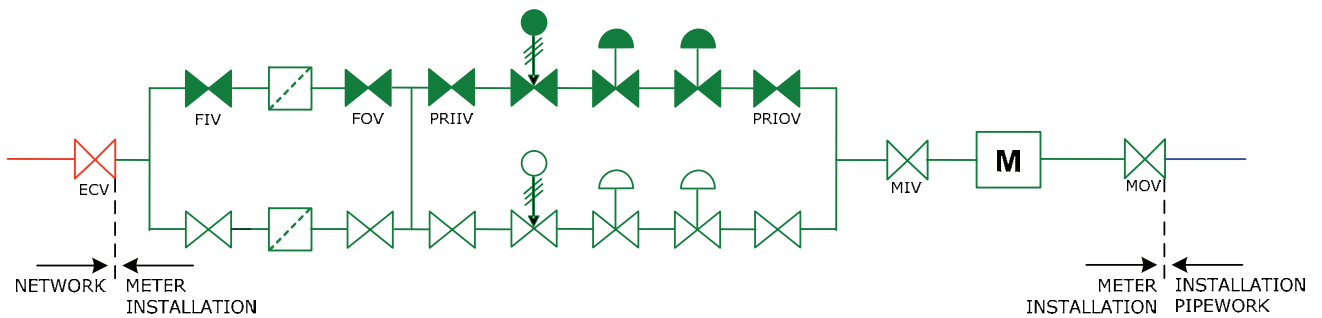


Note: A meter by-pass may be fitted.

Functional standards:

- Network to IGE/TD/3 or IGE/TD/4
- meter installation to IGE/GM/8
- installation pipework to IGEM/UP/2.

FIGURE 18 - STANDARD ARRANGEMENT
75 mbar < SUPPLY MOP ≤ 2 bar
TWIN STREAM
DIAPHRAGM, RD OR TURBINE METER
CAPACITY > 6 m³ h⁻¹



Note: A meter by-pass may be fitted.

Functional standards:

- Network to IGEM/TD/1, IGE/TD/3 or IGE/TD/4
- meter installation to IGE/GM/8
- installation pipework to IGEM/UP/2 or BS EN 15001.

FIGURE 19 - STANDARD ARRANGEMENT
2 bar < SUPPLY MOP ≤ 38 bar
TWIN STREAM
DIAPHRAGM, RD, TURBINE OR ULTRASONIC METER
CAPACITY > 6 m³ h⁻¹



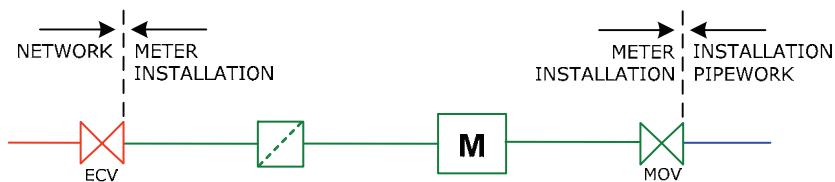
Note 1: It is imperative that the low pressure section of this installation, i.e. downstream of the MIV, is clearly labelled to indicate that the ECV and the remaining part of the meter installation comprising higher pressure regulating and safety devices are situated remotely.

Note 2: In cases where the MIV shown above is in fact the ECV, upstream components form part of the Network and therefore are not part of the meter installation.

Functional standards:

- Network to IGEM/TD/1, IGE/TD/3 or IGE/TD/4
- meter installation to IGE/GM/8
- installation pipework to IGEM/UP/2 or BS EN 15001.

FIGURE 20 - STANDARD ARRANGEMENT
75 mbar < SUPPLY MOP ≤ 38 bar
REMOTE REGULATORS SEPARATED BY ABOVE GROUND
PIPEWORK
CAPACITY > 6 m³ h⁻¹

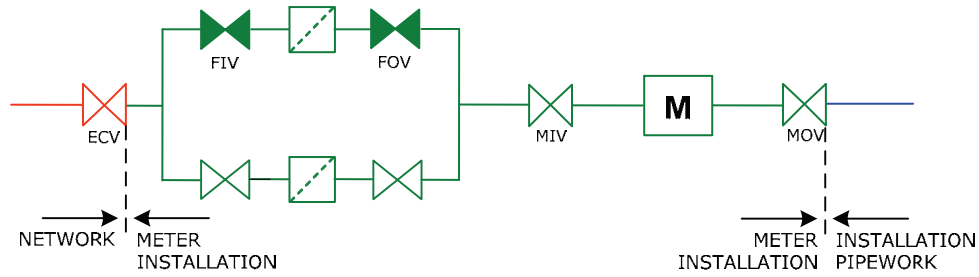


Note: An unregulated supply requires exemption if GS(I&U)R apply, (Reg 40).

Functional standards:

- Network to IGEM/TD/1, IGE/TD/3 or IGE/TD/4
- meter installation to IGE/GM/8 (MOP ≤ 38 bar) or principles of IGE/GM/4 (MOP > 38 bar)
- installation pipework to IGEM/UP/2 or BS EN 15001.

FIGURE 21 - STANDARD ARRANGEMENT
ANY SUPPLY MOP
UNREGULATED SINGLE STREAM
NON-DOMESTIC
CAPACITY > 6 m³ h⁻¹

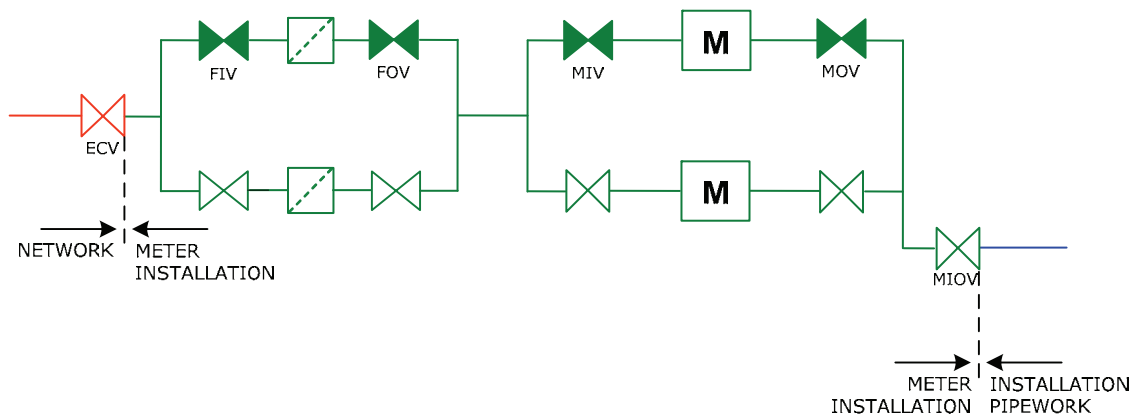


Note: An unregulated supply requires exemption if GS(I&U)R apply, (Reg 40).

Functional standards:

- Network to IGEM/TD/1, IGE/TD/3 or IGE/TD/4
- meter installation to IGE/GM/8 (MOP ≤ 38 bar) or principles of IGE/GM/4 (MOP > 38 bar)
- installation pipework to IGEM/UP/2 or BS EN 15001.

**FIGURE 22 - STANDARD ARRANGEMENT
ANY SUPPLY MOP
UNREGULATED TWIN FILTER STREAM
NON-DOMESTIC
CAPACITY > 6 m³ h⁻¹**

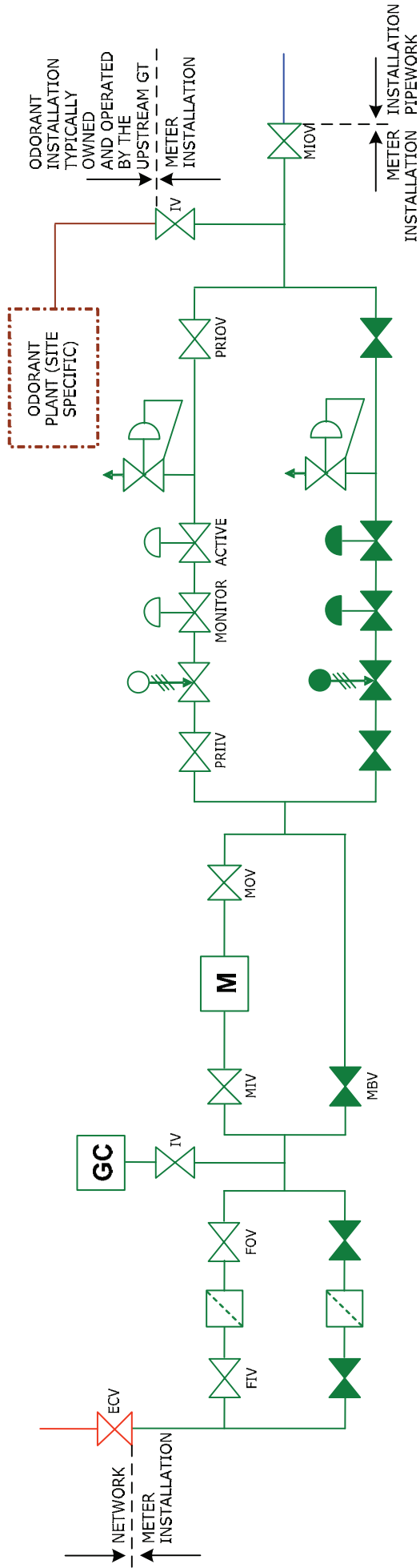


Note: An unregulated supply requires exemption if GS(I&U)R apply, (Reg 40).

Functional standards:

- Network to IGEM/TD/1, IGE/TD/3 or IGE/TD/4
- meter installation to IGE/GM/8 (MOP ≤ 38 bar) or principles of IGE/GM/4 (MOP > 38 bar)
- installation pipework to IGEM/UP/2 or BS EN 15001.

**FIGURE 23 - STANDARD ARRANGEMENT
ANY SUPPLY MOP
UNREGULATED TWIN FILTER AND TWIN METER STREAM
NON-DOMESTIC
CAPACITY > 6 m³ h⁻¹**



Note: Example of supply to a power generation plant.

Functional standards:

- Network to IGE/M/TD/1 or IGE/TD/3
- PRI to IGE/M/TD/13
- meter installation to IGE/GM/8 (MOP ≤ 38 bar) or principles of IGE/GM/4 (MOP > 38 bar)
- installation pipework to IGE/M/UP/2 or BS EN 15001.

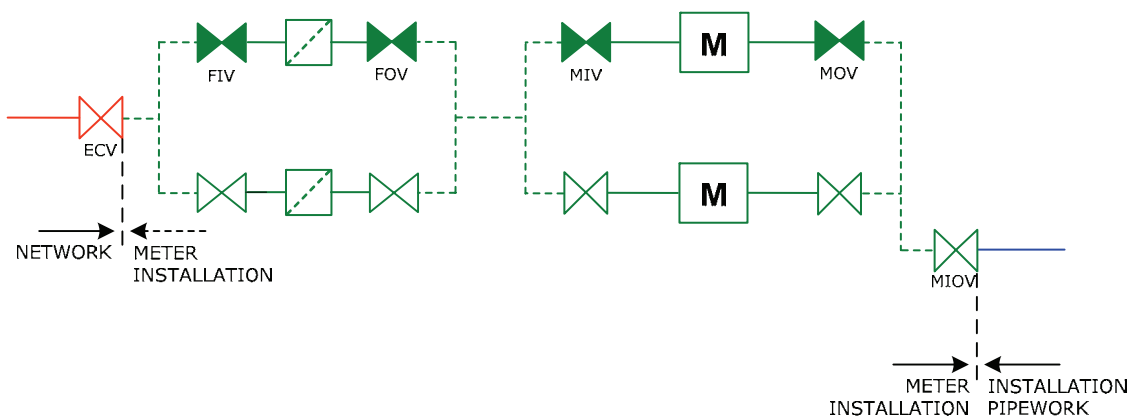
**FIGURE 24 - STANDARD ARRANGEMENT
TYPICAL HIGH PRESSURE METER INSTALLATION**



Functional standards:

- Network to IGE/TD/3 or IGE/TD/4
- PRI to IGE/TD/13
- meter installation to BS 6400-1
- installation pipework to BS 6891.

FIGURE 25 - STANDARD ARRANGEMENT
75 mbar < SUPPLY MOP ≤ 2 BAR
REMOTE SERVICE REGULATOR, ECV AND LOCAL LOW
PRESSURE REGULATOR
CAPACITY ≤ 6 m³ h⁻¹

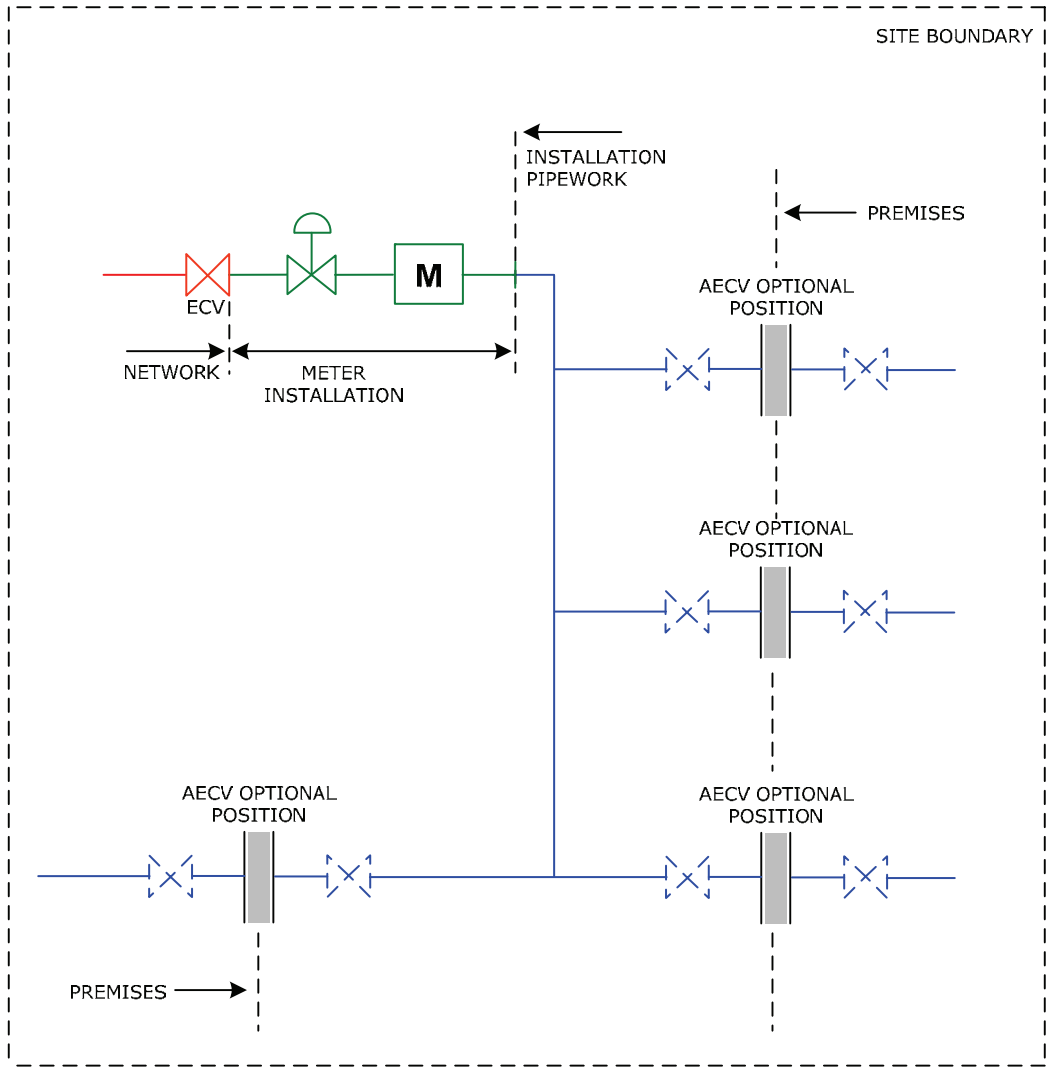


Note: An unregulated supply is shown.

Functional standards:

- Network to IGE/TD/1, IGE/TD/3 and IGE/TD/4
- meter installation to IGE/GM/8
- installation pipework to IGE/UP/2 or BS EN 15001.

FIGURE 26 - STANDARD ARRANGEMENT
LARGE INSTALLATION
ABOVE AND BELOW GROUND PIPEWORK



Note 1: Buildings and site occupied by a single business that is the gas consumer, for example; a hospital, an educational establishment, etc.

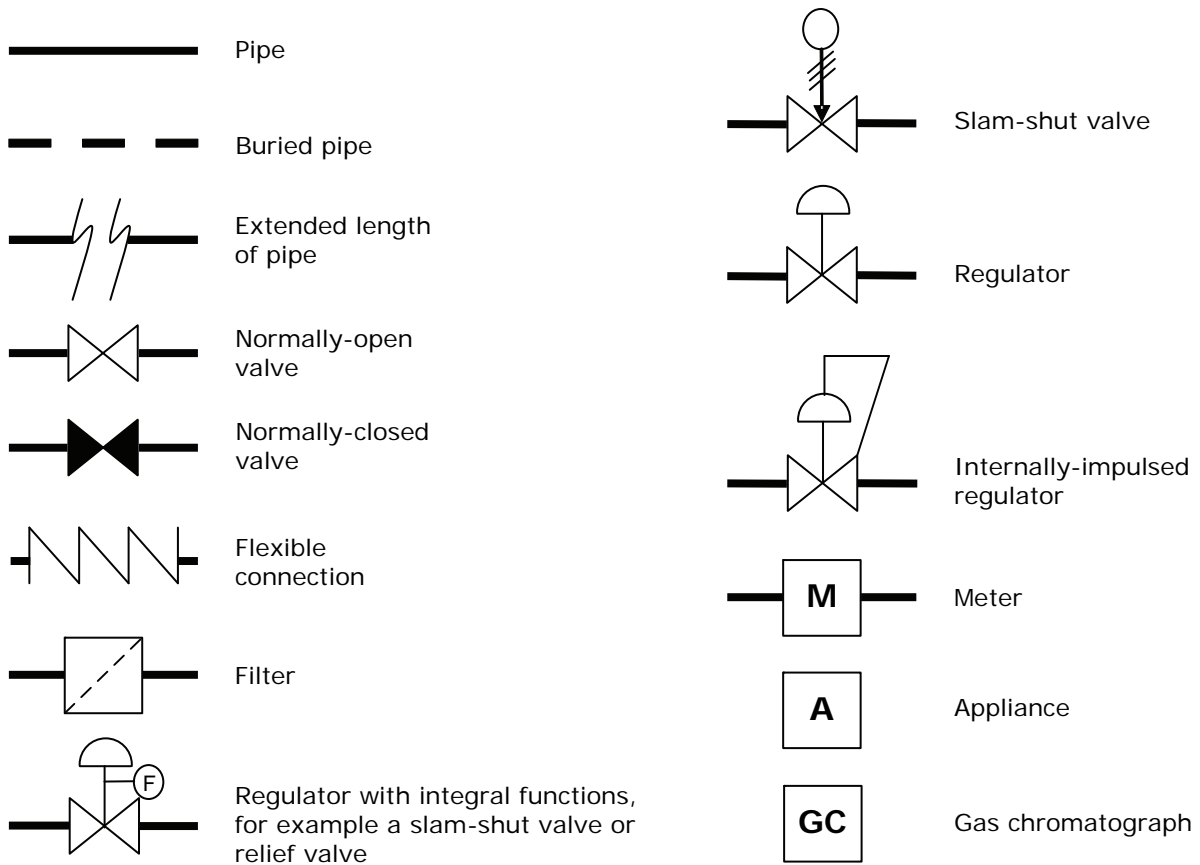
Note 2: The ECV has to be accessible to premises occupiers (see clause 3.2.3.1).

Functional standards:

- Network to IGEM/TD/1, IGE/TD/3 and IGE/TD/4
- meter installation to IGEM/GM/6 or IGE/GM/8
- installation pipework to BS 6891 and/or IGEM/UP/2.

FIGURE 27 - STANDARD ARRANGEMENT
SUPPLY MOP \leq 75 mbar
CAPACITY $>$ 6 m³ h⁻¹

APPENDIX 4 : LEGACY GAS SUPPLY ARRANGEMENTS



Colour Code for Figures 29 to 52:

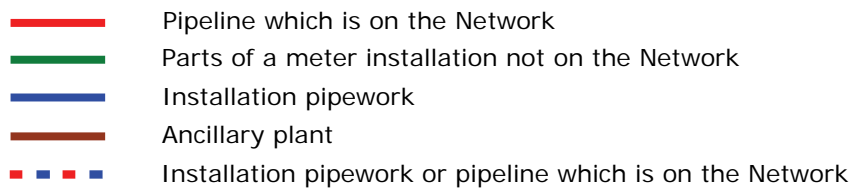


FIGURE 28 - KEY TO FIGURES 29 TO 52

A4.1 BACKGROUND

A4.1.1 The following examples are not a comprehensive list of legacy arrangements but are intended to illustrate a number of arrangements that are not consistent with standard gas supply arrangements but where the network and metering interface needs to be defined.

A4.1.2 The line diagrams indicate the boundary between a network, a meter installation and installation pipework. They do not identify the demarcation between the GT and the meter installation owner/meter asset manager, but these will need to be identified in practice. This document is not intended to suggest such demarcation.

Note: The line diagrams do not show all aspects of the system; simply the major components. Components such as creep relief valves, top hat strainers, purge and vent points, pre-heating, etc., are not shown.

A4.1.3 On many legacy arrangement low pressure installations (and some standard arrangement installations), two pre-fabricated lead connections were fitted on the inlet and outlet of the meter installation. In accordance with CP 331 Part 2, the outlet connection was part of the meter installation.

In 1985, BS 6400 superseded CP 331 Part 2 and was then revised in 2006 to include requirements that lead components be removed from within meter installations as part of 'pre-installation and safety precautions'. This same requirement was stated for when 'carrying out work' on meter installations.

BS 6891, published in 2005, covering installation pipework, in Commentary and Recommendation (C & R), allows connection to be made to a pre-fabricated outlet lead connection but only if this lead component is in good condition, sound, well supported and is of adequate size. Furthermore, BS 6891 states in C & R that the connection may be made to steel or copper pipework using appropriate fittings.

Neither BS 6400 nor BS 6891 identify responsibility for compliance in this respect. When making commercial arrangements for legacy installations, the ownership of lead connections needs to be addressed.

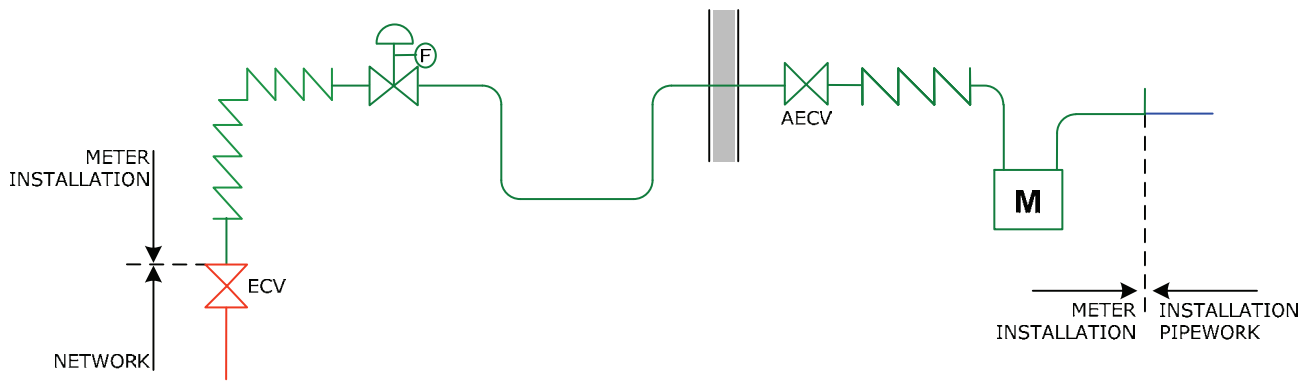
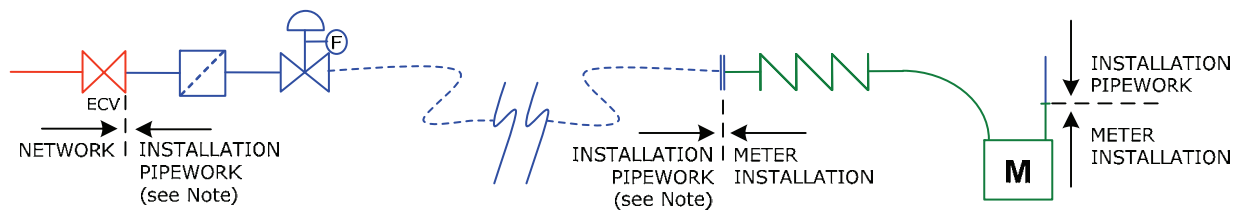
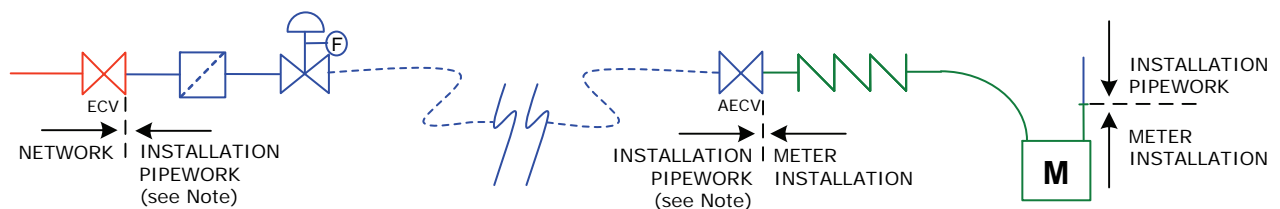


FIGURE 29 - LEGACY ARRANGEMENT
75 mbar < SUPPLY MOP ≤ 2 bar
METER RE-POSITIONED INSIDE THE PREMISES
CAPACITY ≤ 6 m³ h⁻¹



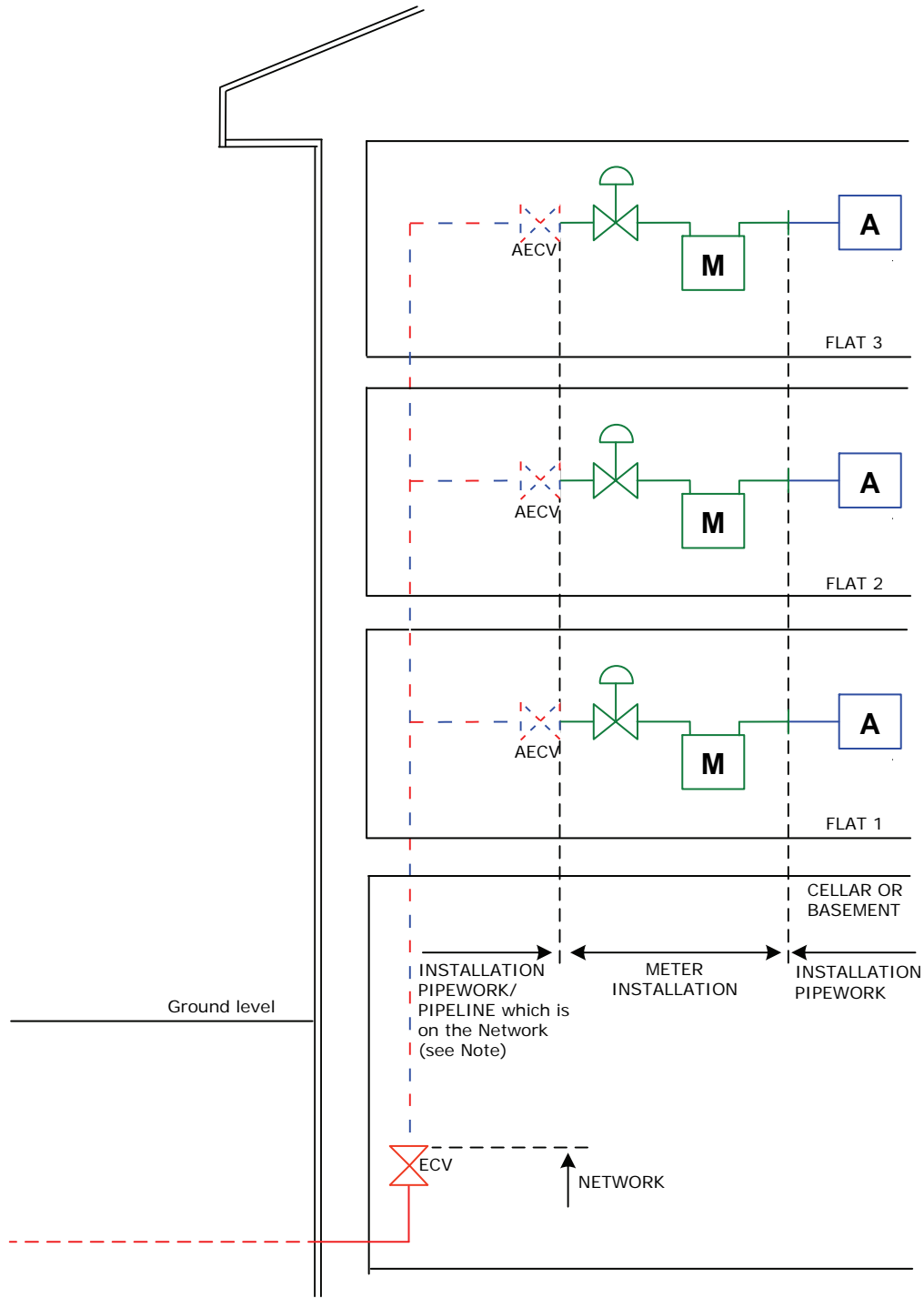
Note: For installation pipework between the ECV and the inlet of the meter installation, refer to Sub-Section 6.3 and A4.1.2 regarding ownership and responsibilities for the plant and pipework.

FIGURE 30 - LEGACY ARRANGEMENT
75 mbar < SUPPLY MOP ≤ 2 bar
REMOTE REGULATOR



Note: For installation pipework between the ECV and the inlet of the meter installation, refer to Sub-Section 6.3 and A4.1.2 regarding ownership and responsibilities for the plant and pipework.

FIGURE 31 - LEGACY ARRANGEMENT
75 mbar < SUPPLY MOP ≤ 2 bar
REMOTE REGULATOR AND AECV



Note: This arrangement is no longer considered appropriate and the valves and pipework would need to be re-defined in accordance with Figure 6.

Figure 6 shows that a “conveyor” becomes responsible for the installation pipework from the current ECV (which would become the IIV) to the AECVs (which would become individual ECVs). The “conveyor” would need to be aware of this and its duties under GS(M)R and PSR.

FIGURE 32 - LEGACY ARRANGEMENT METERS LOCATED IN HIGH RISE BUILDINGS

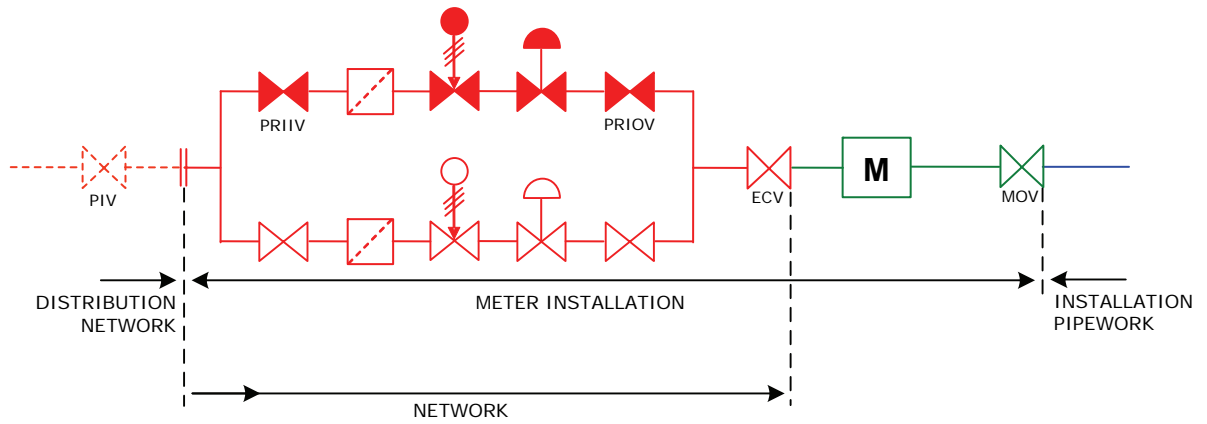


FIGURE 33 - LEGACY ARRANGEMENT
75 mbar < SUPPLY MOP ≤ 2 bar
TWIN STREAM
RD OR TURBINE METER
CAPACITY > 6 m³ h⁻¹

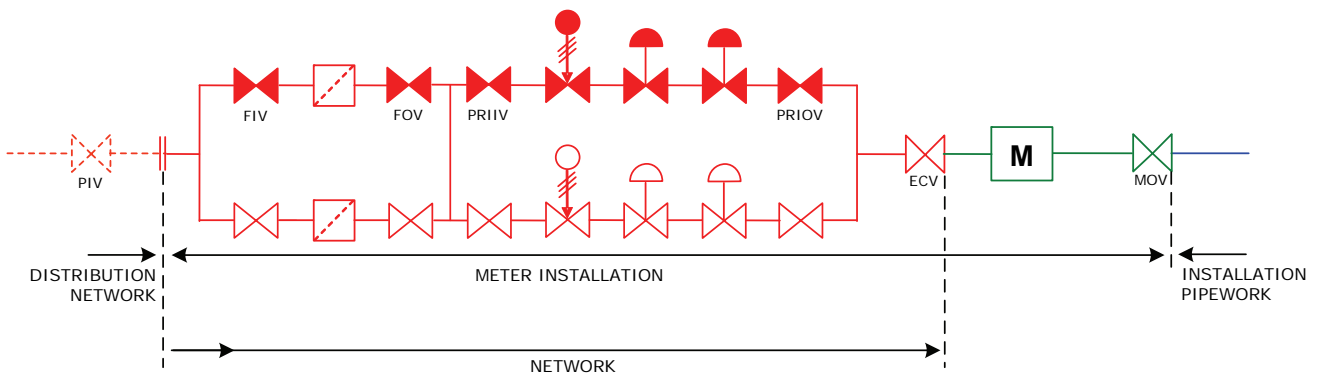
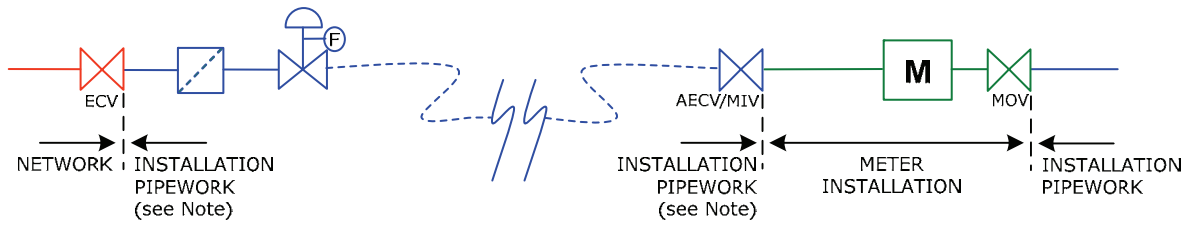
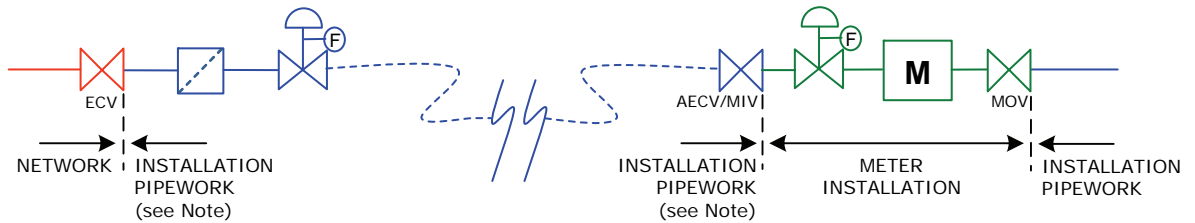


FIGURE 34 - LEGACY ARRANGEMENT
2 bar ≤ SUPPLY MOP ≤ 100 bar
TWIN STREAM WITH SEPARATE FILTER SET
RD, TURBINE OR ULTRASONIC METER
CAPACITY > 6 m³ h⁻¹



Note: For installation pipework between the ECV and the inlet of the meter installation, refer to Sub-Section 6.3 and A4.1.2 regarding ownership and responsibilities for the plant and pipework.

FIGURE 35 - LEGACY ARRANGEMENT
75 mbar < SUPPLY MOP ≤ 7 bar
REMOTE REGULATOR AND AECV
CAPACITY > 6 m³ h⁻¹

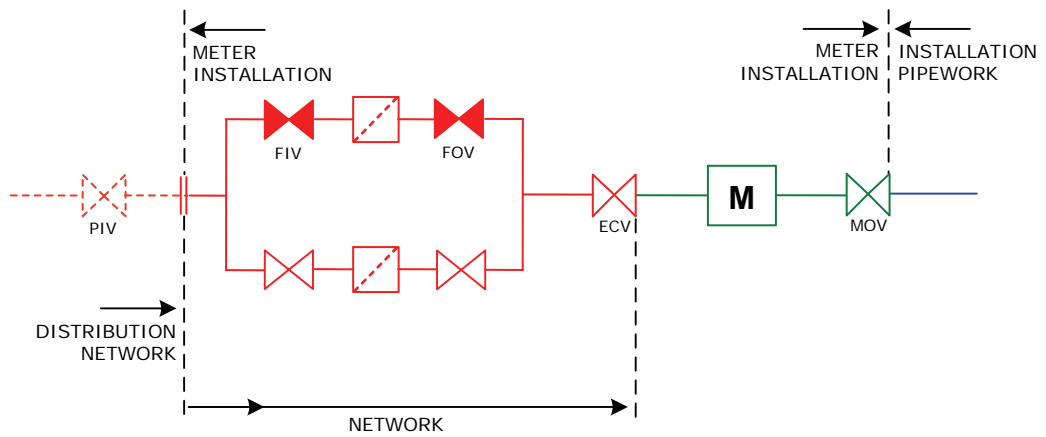


Note: For installation pipework between the ECV and the inlet of the meter installation, refer to Sub-Section 6.3 and A4.1.2 regarding ownership and responsibilities for the plant and pipework.

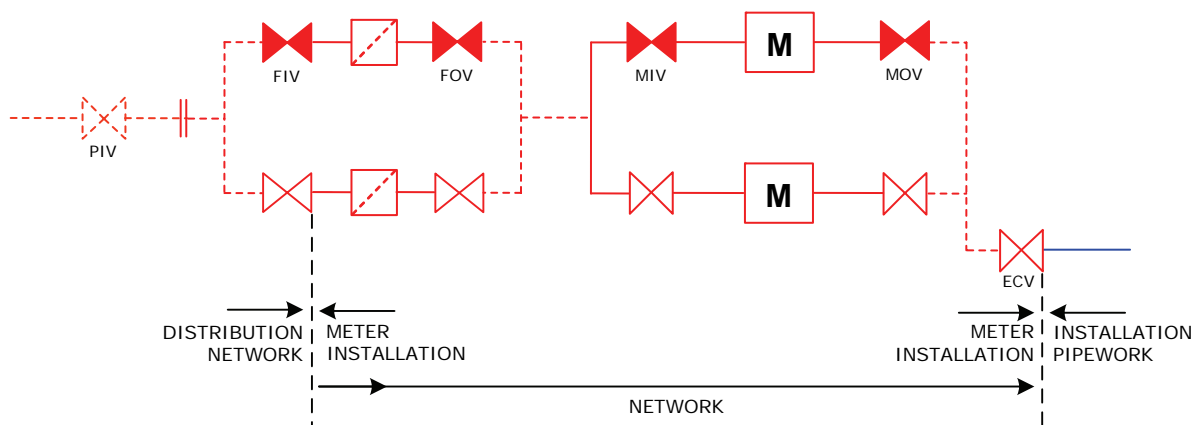
FIGURE 36 - LEGACY ARRANGEMENT
75 mbar ≤ SUPPLY MOP ≤ 7 bar
REMOTE REGULATOR, AECV AND LOCAL LOW PRESSURE
REGULATOR
CAPACITY > 6 m³ h⁻¹



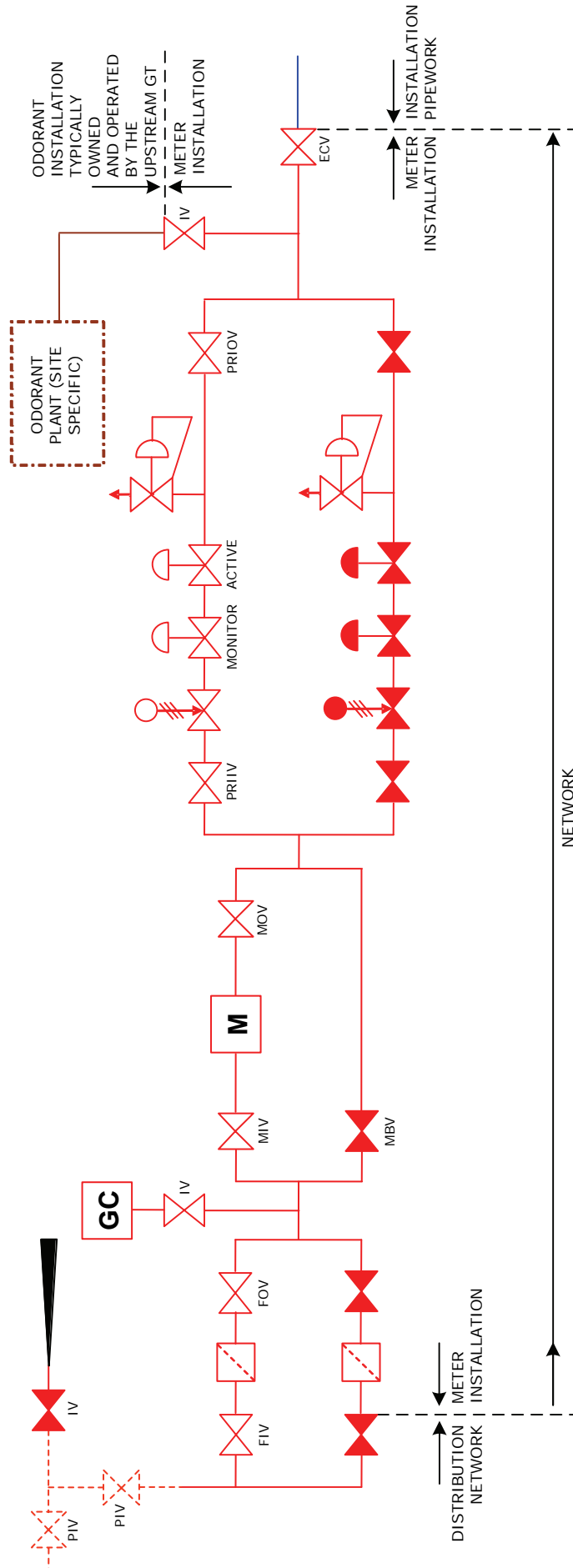
FIGURE 37 - LEGACY ARRANGEMENT
75 mbar < SUPPLY MOP ≤ 7 bar
REMOTE SERVICE REGULATOR AND NO METER REGULATOR
CAPACITY > 6 m³ h⁻¹



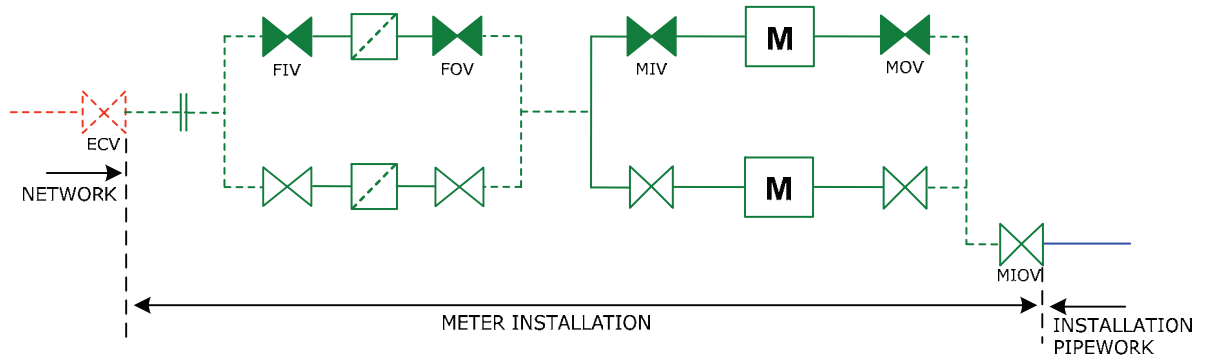
**FIGURE 38 - LEGACY ARRANGEMENT
ANY SUPPLY MOP
UNREGULATED WITH TWIN STREAM FILTER SET
CAPACITY > 6 m³ h⁻¹**



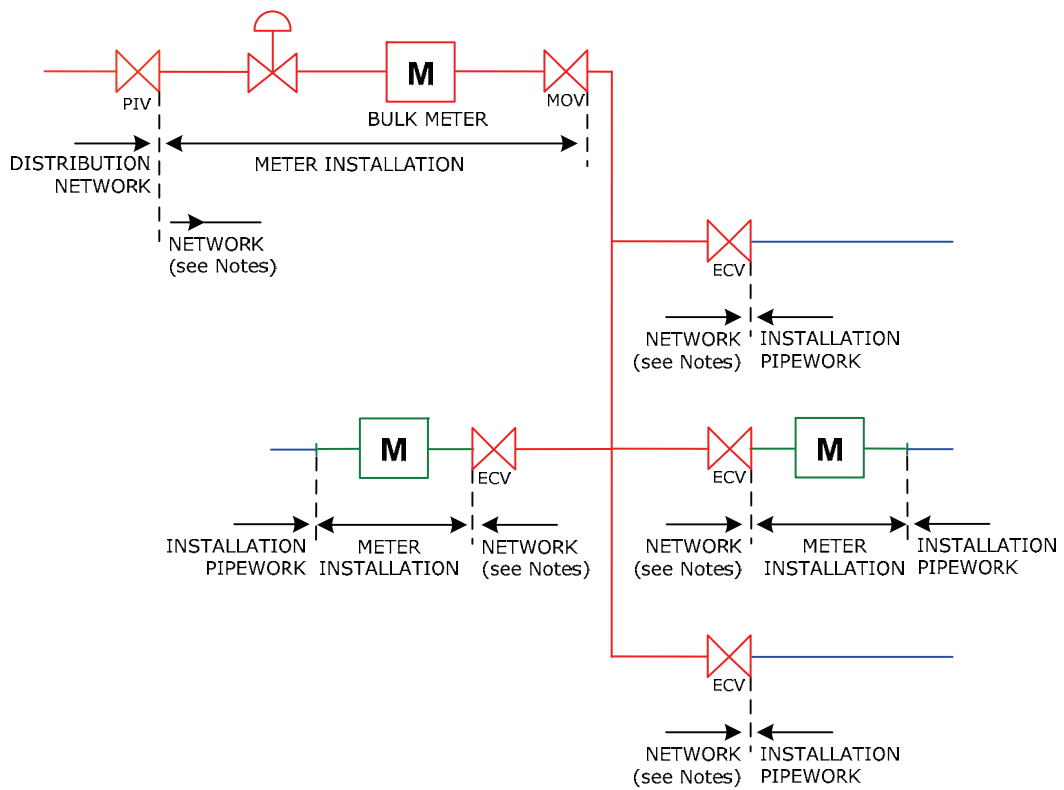
**FIGURE 39 - LEGACY ARRANGEMENT
LARGE INSTALLATION
ABOVE AND BELOW GROUND PIPEWORK**



**FIGURE 40 - LEGACY ARRANGEMENT
TYPICAL HIGH PRESSURE METER INSTALLATION**



**FIGURE 41 - LEGACY ARRANGEMENT
TYPICAL LARGE METER INSTALLATION INCORPORATING
ABOVE AND BELOW GROUND PIPEWORK**

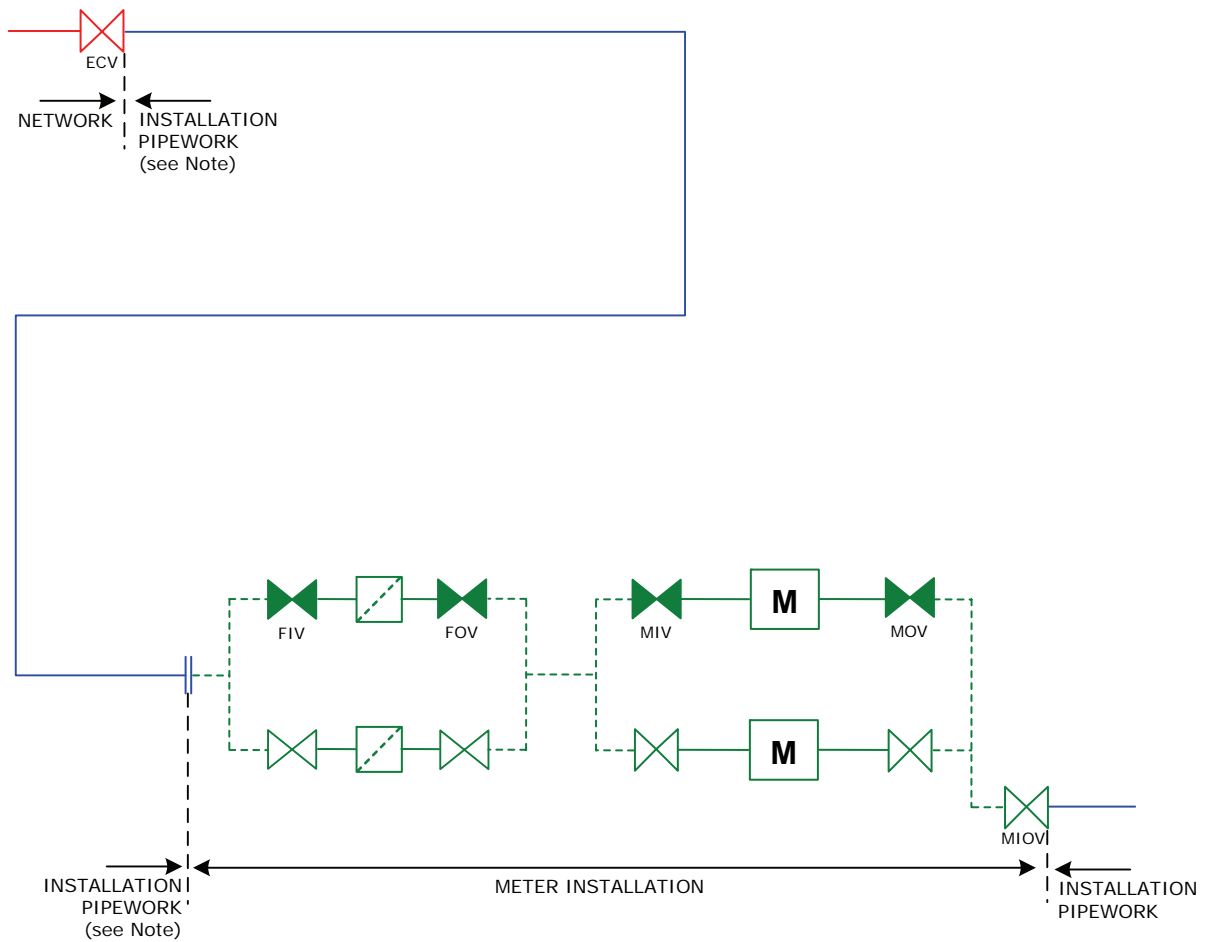


Note 1: Typical examples include a housing estate under the control of a local authority or Housing Trust or a business park site under the control of a single company where buildings are leased to the individual building occupiers (consumers of gas) and access is not provided to the building occupiers to the valve at the meter (marked PIV), to use to shut off the supply of gas in an emergency.

Note 2: The estate may have developed from a site where all the buildings were occupied by the site owner. If the site owner continues to be a consumer of gas, they may, with agreement of the GT designate the valve at the meter (marked PIV) as the ECV for their purposes and the ECVs will become AECVs. In this case, the site owner has to provide instructions to the effect and access to the new ECV to all the building occupiers.

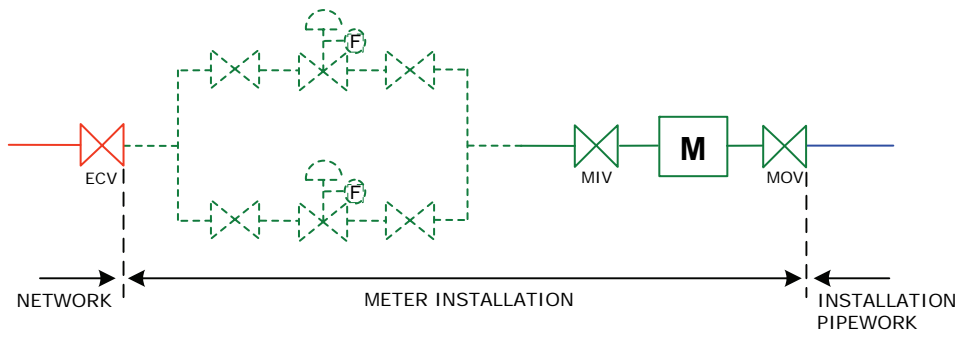
Note 3: GS(M)R and PSR apply to all ECVs and GS(I&U)R only applies downstream of the ECVs.

**FIGURE 42 - LEGACY ARRANGEMENT
A GAS CONVEYOR'S NETWORK DOWNSTREAM OF A GT'S
NETWORK**

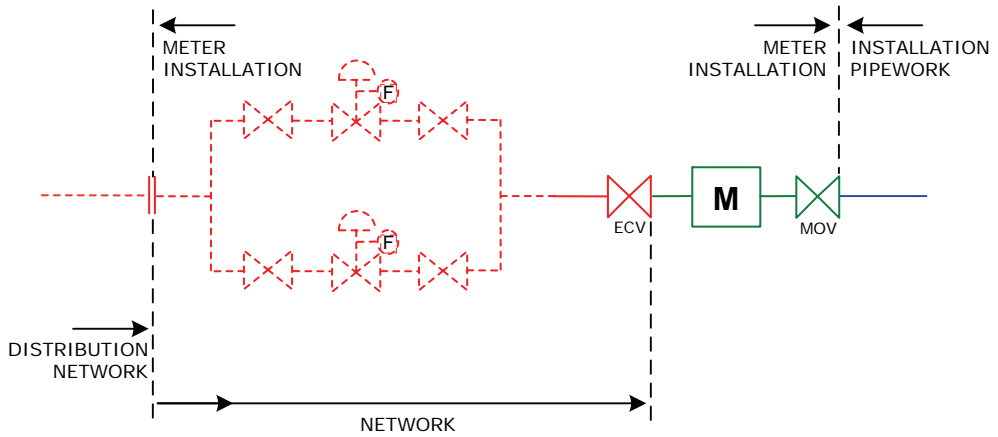


Note: For installation pipework between the ECV and the inlet of the meter installation, refer to Sub-Section 6.3 and A4.1.2 regarding ownership and responsibilities for the plant and pipework.

**FIGURE 43 - LEGACY ARRANGEMENT
LARGER SITES. LARGE INSTALLATION WITH REMOTE ECV
ABOVE AND BELOW GROUND PIPEWORK**



**FIGURE 44 - LEGACY ARRANGEMENT
 SUPPLY MOP > 75 mbar
 TWIN STREAM UNDERGROUND REGULATOR SET WITH
 ONLY SHORT LENGTHS OF BURIED PIPEWORK**



**FIGURE 45 - LEGACY ARRANGEMENT
 SUPPLY MOP > 75 mbar
 TWIN STREAM UNDERGROUND REGULATOR SET WITH
 ONLY SHORT LENGTHS OF BURIED PIPEWORK**

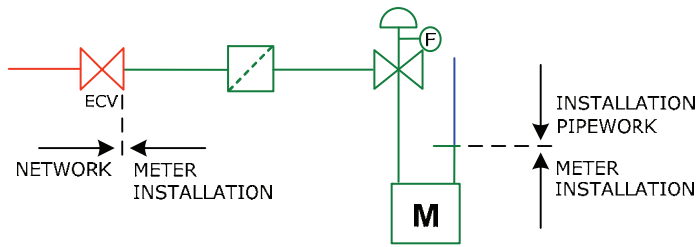
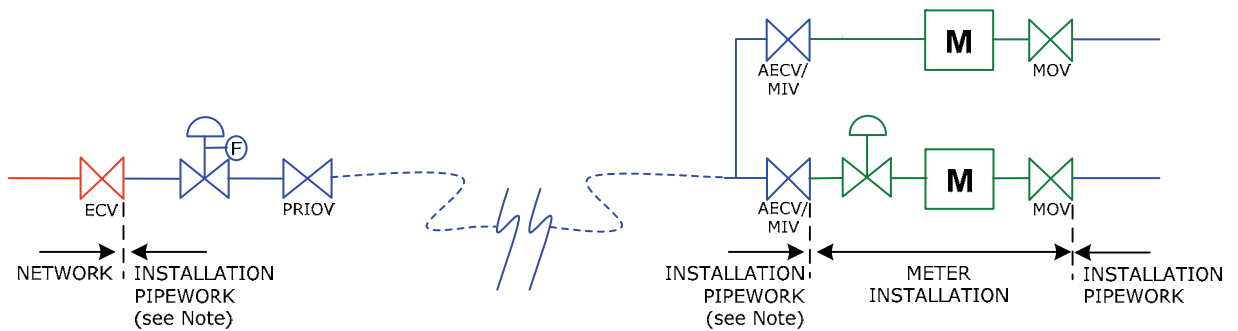


FIGURE 46 - LEGACY ARRANGEMENT
SUPPLY MOP ≤ 7 bar
INSTALLATION WITHOUT MIV
CAPACITY $\leq 6 \text{ m}^3 \text{ h}^{-1}$



Note: For installation pipework between the ECV and the inlet of the meter installation, refer to Sub-Section 6.3 and A4.1.2 regarding ownership and responsibilities for the plant and pipework.

FIGURE 47 - LEGACY ARRANGEMENT
75 mbar < SUPPLY MOP ≤ 7 bar
REMOTE REGULATOR WITH ECV ON ITS INLET SUPPLYING
MULTIPLE METER INSTALLATIONS

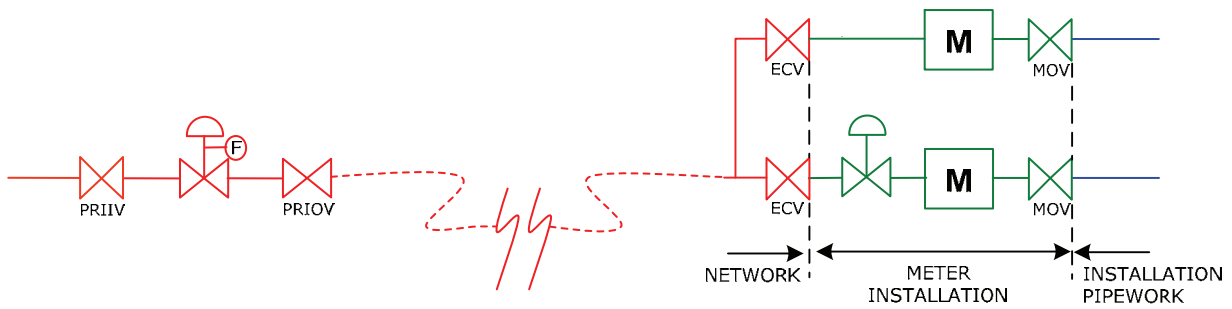
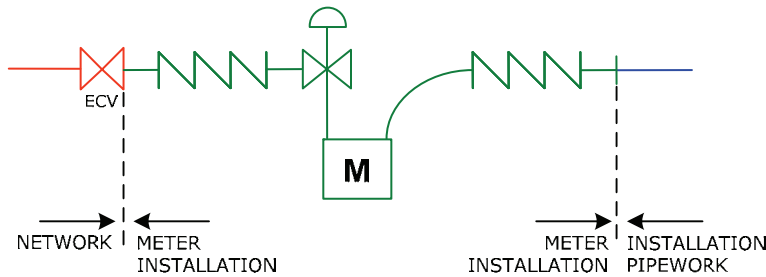
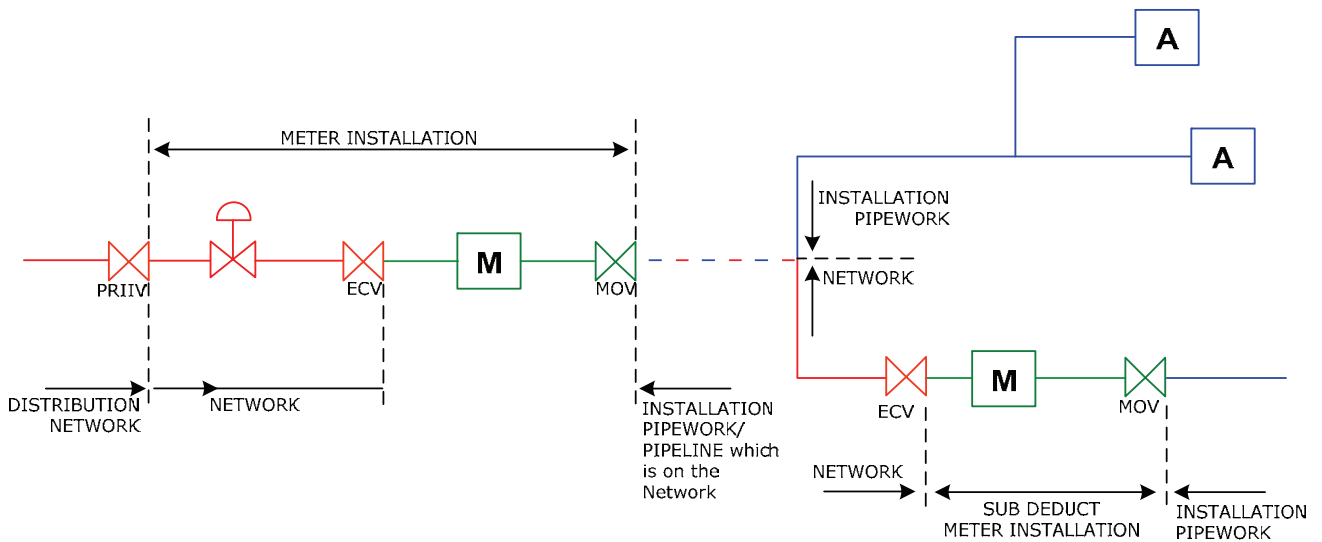


FIGURE 48 - LEGACY ARRANGEMENT
 $75 \text{ mbar} < \text{MOP} \leq 7 \text{ bar}$
REMOTE REGULATOR SUPPLYING MULTIPLE METER
INSTALLATIONS EACH WITH LOCAL ECV



Note: When replacing this installation, the outlet flexible will need to be removed.

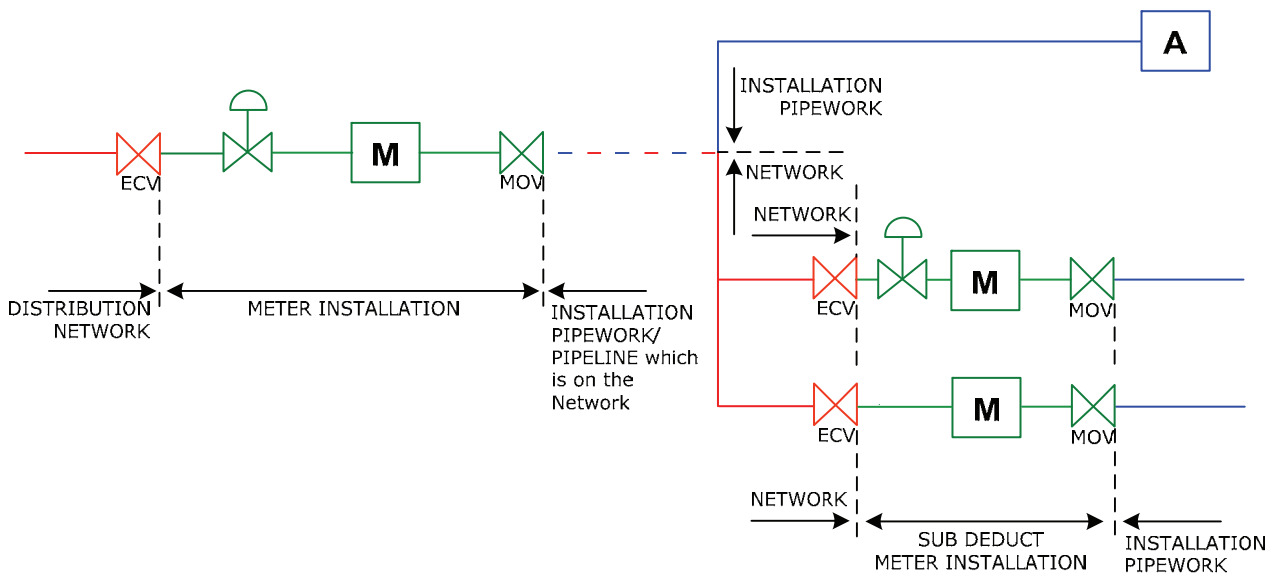
FIGURE 49 - LEGACY ARRANGEMENT
 $\text{SUPPLY MOP} \leq 75 \text{ bar}$
 $\text{CAPACITY} \leq 6 \text{ m}^3 \text{ h}^{-1}$
DOMESTIC DIAPHRAGM METER INSTALLATION INSTALLED
WITH TWO FLEXIBLES



Note 1: The arrangement up to the MOV may also be applicable to Figure 51.

Note 2: For installation pipework/pipeline which is on the Network, refer to Sub-Section 6.3 and A4.1.2 regarding ownership and responsibilities for the plant and pipework.

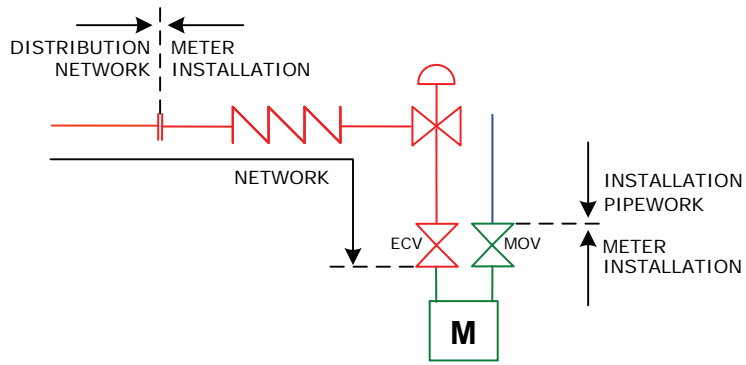
FIGURE 50 - LEGACY ARRANGEMENT
75 mbar < SUPPLY MOP ≤ 7 bar
TYPICAL UNC SUB DEDUCT ARRANGEMENT
ECV LOCATED WITHIN THE PRIMARY METER
INSTALLATION



Note 1: The arrangement up to the MOV may also be applicable to Figure 50.

Note 2: For installation pipework/pipeline which is on the Network, refer to Sub-Section 6.3 and A4.1.2 regarding ownership and responsibilities for the plant and pipework.

FIGURE 51 - LEGACY ARRANGEMENT
TYPICAL UNC SUB DEDUCT ARRANGEMENT
ECV ON INLET TO PRIMARY METER
INSTALLATION



**FIGURE 52 - LEGACY ARRANGEMENT
SUPPLY MOP \leq 75 mbar
ECV LOCATED DOWNSTREAM OF REGULATOR**

