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SPECIFICATION FOR
SERVICE TERMINATIONS



FEBRUARY 2015

CONTENTS

FOREWORD	ii
BRIEF HISTORY	ii
DISCLAIMER.....	ii
MANDATORY AND NON-MANDATORY REQUIREMENTS	ii
INTRODUCTION	1
1. SCOPE.....	1
2. REFERENCES	1
3. DEFINITIONS	1
4. SERVICE PIPE TERMINATION LOCATIONS	1
5. SERVICE PIPE DESIGN AND TERMINATION.....	2
APPENDIX A – REFERENCES	5
APPENDIX B – DEFINITIONS	7
APPENDIX C – SPECIFICATION AND DETAILS OF ECV INSTALLATION	8
ENDNOTE	11

FOREWORD

This Specification was approved by Bob Hipkiss on 09/02/15 for use by managers, engineers and supervisors throughout Scotia Gas Networks (SGN).

SGN documents are revised, when necessary, by the issue of new editions. Users should ensure that they are in possession of the latest edition by referring to the SHE & Engineering Document Library available on SGNnet.

Compliance with this safety and engineering document does not confer immunity from prosecution for breach of statutory or other legal obligations.

BRIEF HISTORY

First published as SGN/SP/SER/8	December 2008	DESC-0159-28012008
Second update published	March 2014	DESC-1432-14032014
Third Update Published	February 2015	DESC-1555-9022015

KEY CHANGES

Section	Amendments
Table A1	Correction to errors in Specification details
Table A3	Correction to errors in Specification details

DISCLAIMER

This safety and engineering document is provided for use by SGN and such of its contractors as are obliged by the terms and conditions of their contracts to comply with this document. Where this document is used by any other party it is the responsibility of that party to ensure that this document is correctly applied.

MANDATORY AND NON-MANDATORY REQUIREMENTS

In this document:

must: indicates a mandatory requirement.

should: indicates best practice and is the preferred option. If an alternative method is used then a suitable and sufficient risk assessment must be completed to show that the alternative method delivers the same, or better, level of protection.

SPECIFICATION FOR SERVICE TERMINATIONS

INTRODUCTION

In support of the introduction of competition in the provision of gas supply metering installations Scotia Gas Networks has prepared standard service pipe termination details. These details provide service and meter installers with the orientation and location dimensions, and define the position of the Emergency Control Valve (ECV) for all new standard installations. The standards also define the size and type of ECV thread or flange outlet fitting.

1. SCOPE

- 1.1 This Specification applies to all services to metering installations where the inlet pressure is equal or less than 7 bar. The document illustrations are shown as standard examples; the use of PE / Steel transition fitting is the preferred option when a service entry is made to external meter houses. The service height and entry dimensions shall also be adopted for all internal installations where permitted (including MP/IP). This specification is not applicable to SGN replacement activities, guidance should be taken from T/PM/MSL/1.

N.B. a variation in heights and dimensions shown is permitted when it is unsound, unsafe or impractical to install the termination as indicated.

General requirements for PE service entries into buildings should be made to IGE/TD/3 and IGE/TD/4.

This document excludes standard domestic service termination into prefabricated recess, surface mounted and semi-concealed meter boxes.

2. REFERENCES

- 2.1 This Specification makes references to the documents listed in Appendix A. Unless otherwise specified, the latest edition of the document applies, including all amendments.

3. DEFINITIONS

- 3.1 The requirements and definitions applying to this Specification are listed in Appendix B.

4. SERVICE PIPE TERMINATION LOCATIONS

- 4.1 For supplies to premises where the peak demand exceeds 6 scmh and one of the following circumstances apply:
- a) Service pipes designed by SGN Connections and service pipes designs submitted to SGN for adoption within its network or
 - b) Alteration to existing services or
 - c) An increase to an existing demand which takes the revised value above 6 scmh.

The following priority order set out below must be used:

- a) Located externally, as close as possible to the cartilage of the property.
- b) Located externally, within the site boundary.
- c) Located on the external wall of the building.
- d) Located internally within the building

5. SERVICE PIPE DESIGN AND TERMINATION

Any design submission should be assessed on its individual merits, with safety a prime consideration.

5.1 Planning

The size of a gas service pipe should be determined for gas supply points in accordance with SGN/SP/NP/14.

Due consideration of the requirements of the relevant Building Regulations, GS(I&U) Regulations, BS 6400 and IGE/GM/6 and IGE/GM/8 for acceptable meter locations, should be taken into account when agreeing the proposed final meter positions. In accordance with SGN/SP/NP/14, allowance for the specific service termination fittings should be taken into account for calculation purposes.

5.2 Design Submissions

5.2.1 Where an external location is not the chosen option, the following information will be required by the SGN Distribution Network in order to make an assessment:

- a) Rationale for design not incorporating an external location.
- b) Details of the internal location such that a safety based risk assessment can be undertaken.

5.3 Specification for the ECV

To provide a predictable consistent installation and ensure that independent meter installers can make a connection to the gas service pipe, an ECV of nominal size and type as indicated within Tables A1-A3 shall be provided. The specification of the meter inlet connection details are also given in Tables A1-A3.

5.4 ECV Orientation and Position

Service entries and emergency control valves should be installed to the left of the meter installation viewed from a front elevation.

The ECV shall be operated by a key, lever or hand wheel, which should be securely attached to the operating spindle. Where a key or lever is used, the 'open' position should be when the key or lever is parallel to the axis of the pipe. Where the key or lever moves in the vertical plane, the move to the off position should be in a downward direction.

The ECV shall be located relative to the external walls of any kiosk / meter room (with a service slot through the base of the kiosk where used), as shown within the figures in Appendix C.

Note: Above ground entries for services exceeding 6" nominal bore shall not be used, and all such installations shall be provided via below ground service entries.

Table A1: Networks with an MOP not exceeding 75mbar (LP Networks)

Networks With A Maximum Operating Pressure Not Exceeding 75mb (Low Pressure Networks)				
Nominal Meter Installation Standard & Model	Emergency Control Valve			
	Nominal Size mm	Type	Specification	Outlet Connection
IGE/GM/6, U16	50	Plug or Ball	BS 1552* MOP Class 200mbar	External thread to BS746
IGE/GM/6, U25	50			
IGE/GM/6, U40	50			
IGE/GM/6, U65	80 /50 **	Gate Valve Double Block & Bleed	GIS/V 7-1 :2007	BS EN 1092 1 , Table 9 PN 16 type B1 (raised face)
IGE/GM/6, U100	80			
IGE/GM/6, U160	80			
IGE/GM/6, U160	100 ***			
IGE/GM/6, RD1	50	Plug or Ball	BS 1552* MOP Class 200mbar	External thread to BS746
IGE/GM/6, RD2	80	Gate Valve Double Block & Bleed	GIS/V 7-1 :2007	BS EN 1092 1 , Table 9 PN 16 type B1 (raised face)
IGE/GM/6, RD3				
IGE/GM/6, RD4	100	Gate Valve Double Block & Bleed	GIS/V 7-1 :2007	BS EN 1092 1 , Table 9 PN 16 type B1 (raised face)
IGE/GM/6, RD5				
IGE/GM/6, RD6	150	Gate Valve Double Block & Bleed	GIS/V 7-1 :2007	BS EN 1092 1 , Table 9 PN 16 type B1 (raised face)
IGE/GM/6, RD7				
IGE/GM/6, RD8				
(*) Denotes BS EN 331 can be used as an alternative				
(**) U65 Meter kits can be fitted to either 50mm Plug or Ball Valve* or 80mm Gate Valve				
(***) Standard U160 kits fits onto a 80mm gate valve, an adaptor piece would be required for a 100mm valve.				

**Table A2: Networks with an MOP exceeding 75mbar and not exceeding 2bar.
(MP Networks)**

Note: The ball valves referenced in Table A2 shall not be used for low-pressure installations.

Networks With A Maximum Operating Pressure Exceeding 75mb But Not Exceeding 2bar (Medium Pressure Networks)				
Emergency Control Valve				
Nominal Meter Installation Standard & Model	Nominal Size mm	Type	Specification	Outlet Connection
BS 6400-2:	20	Ball	BS EN 331 MOP Class 5bar	BS EN 10806
IGE/GM/8	25 - 50	Ball	BS EN 331 MOP Class 5bar	BS 21
IGE/GM/8	80 - 400	Gate Valve Double Block & Bleed	GIS/V 7-1 :2007	BS EN 1092-1 – Table 9 PN 16 Type B1 (raised face)

**Table A3: Networks with an MOP exceeding 2 bar and not exceeding 7 bar.
(IP Networks)**

Note: The IGE/GL/5 process shall be used to support IP service planning and construction.

Networks With A Maximum Operating Pressure Exceeding 2bar But Not Exceeding 7bar (Intermediate Pressure Networks)				
Emergency Control Valve				
Nominal Meter Installation Standard & Model	Nominal Size mm	Type	Specification	Outlet Connection
IGE/GM/8	25 - 50	Ball	BS ISO 7121	BS EN 1092-1 – Table 9 PN 16 Type B1 (raised face)
IGE/GM/8	80 - 400	Gate Valve Double Block & Bleed	GIS/V 7-1 :2007	BS EN 1092-1 – Table 9 PN 16 Type B1 (raised face)

APPENDIX A – REFERENCES

Note: This document refers to other documents prefixed SGN. However during the transitional period following the change of ownership of SGN, a number of these documents will retain a T prefix. This will be updated to SGN over a period of time. Both prefixes should be regarded as interchangeable until all updates have been completed.

This Specification makes reference to the documents listed below (see clause **Error! Reference source not found.2**)

A.1 Legislation

- | | | |
|-------------|---|--|
| GS(I&U)Regs | - | The Gas Safety (Installation and Use) (Amendment) Regulations 1996 |
|-------------|---|--|

A.2 External Documents

- | | | |
|-------------------------|---|--|
| BS EN 331: 1998+A1:2010 | - | Manually operated ball valves and closed bottom taper plug valves for gas installations in buildings. |
| BS EN 1092 – 1: 2007 | - | Flanges and their joints. Circular flanges for pipes, valves, fittings and accessories, PN designated. Steel flanges |
| BS EN ISO 10806: 2003 | - | Pipework. Fittings for corrugated metal hoses |
| BS 21: 1985 | - | Specification for pipe threads for tubes and fittings where pressure-tight joints are made on the threads (metric dimensions) |
| BS 746: 2005 | - | Fittings for low pressure gas meters. Requirements and test methods. |
| BS 1552: 1995 | - | Specification for open bottomed taper plug valves for 1st, 2 nd and 3 rd family gases up to 200mbar. |
| BS ISO 7121:2006 | - | Steel ball valves for general-purpose industrial applications |
| BS 6400 – 1: 2006 | - | Specification for installation, exchange, relocation and removal of gas meters with a maximum capacity not exceeding 6 m ³ /h – Part 1 Low pressure (2nd family gases) |
| BS 6400 – 2: 2006 | - | Specification for installation, exchange, relocation and removal of gas meters with a maximum capacity not exceeding 6 m ³ /h – Part 2 Medium pressure (2nd family gases) |
| IGE/GM/6 Edition 2 | - | Non Domestic Meter Installations. Standard Designs. exceeding 1076 m ³ /h (38000 ft ³ /h) |
| IGE/GM/8 Part 1 | - | Non Domestic Meter Installations Flow rate exceeding 6 m ³ h-1 and inlet pressure not exceeding 38 bar. |
| IGE/TD/3 | - | Steel and PE Pipelines for Gas Distribution |
| IGE/TD/4 | - | PE and steel gas services and service pipework |
| IGE/GL/5 | - | Procedures for managing new works, modifications and repairs. |

A.3 Gas Industry Documents

- GIS/V7-1:2007 - Specification for Distribution valves, Part 1: Metal-bodied line valves for use at pressures up to 16 bar and construction valves for use at pressures up to 7 bar
- SGN/SP/NP/14 - Specification for the design of system extensions, connections and services to below 7 bar Scotia Gas Network Systems
- T/PR/TMP/3 - Management Procedure for the Installation, Exchange, Relocation or Removal of Low Pressure Gas Meters Not Exceeding 6m³/h

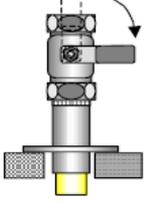
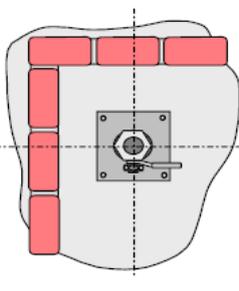
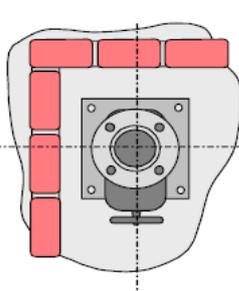
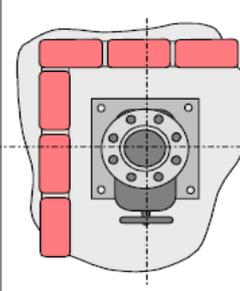
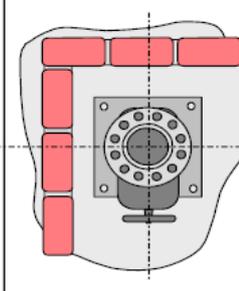
APPENDIX B – DEFINITIONS

- ECV** - Emergency Control Valve
- AECV** - Additional Emergency Control Valve

APPENDIX C – SPECIFICATION AND DETAILS OF ECV INSTALLATION

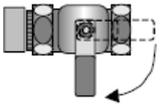
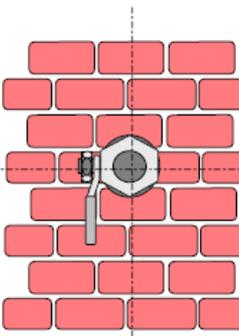
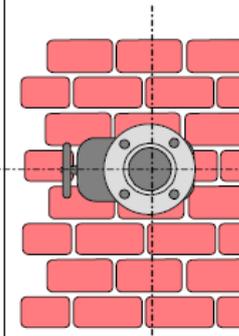
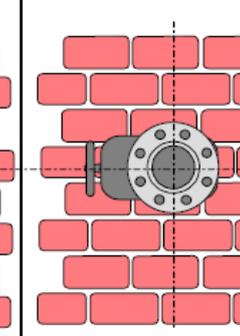
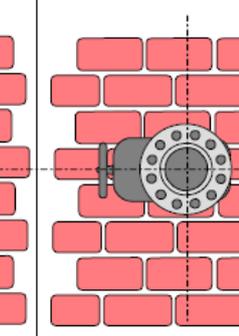
C.1 Valve orientation for vertical inlet

Plan view

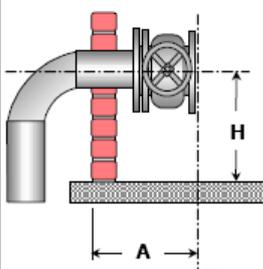
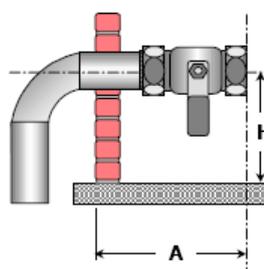
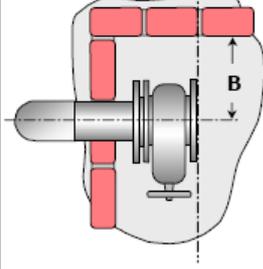
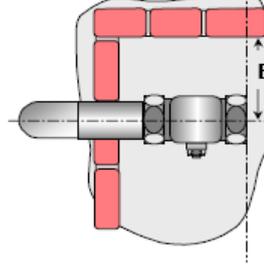
<p>NOTE Valves with levers must fall to close</p> 					
	Service Valve Size	Up to 50mm	Up to 50mm	80mm, 100mm and 150mm	200mm, 250mm and 300mm
	Valve Type	SCREWED	FLANGED	FLANGED	FLANGED
	No Bolts	N/A	4	8	12
	Bolt size	N/A	M16	80mm/100mm – M16 150mm – M20	200mm – M20 250mm/300mm – M24

C.2 Valve orientation for Horizontal inlet

End view

<p>NOTE Valves with levers must fall to close</p> 					
	Service Valve Size	Up to 50mm	Up to 50mm	80mm, 100mm and 150mm	200mm, 250mm and 300mm
	Valve Type	SCREWED	FLANGED	FLANGED	FLANGED
	No Bolts	N/A	4	8	12
	Bolt size	N/A	M16	80mm/100mm – M16 150mm – M20	200mm – M20 250mm/300mm – M24

C.3 Horizontal inlet connection heights for LP / MP (Not for U series meters)

Flanged Inlet	Screwed Inlet	Horizontal Inlet			
					
					

Size of ECV "D" Ø	Pressure Tier	Connection Type	Dim A Minimum distance	Dim B Minimum distance	Dim H Tolerance ± 25mm
≤ 50mm	LP / MP	SCREWED	440	300	600
80mm	LP / MP	FLANGED	625	350	800
100mm	LP / MP	FLANGED	650	350	800
150mm	LP / MP	FLANGED	880	450	800

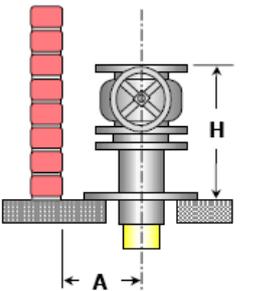
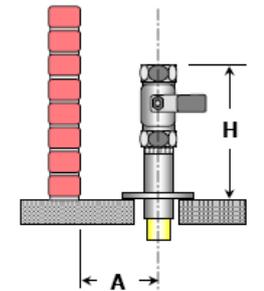
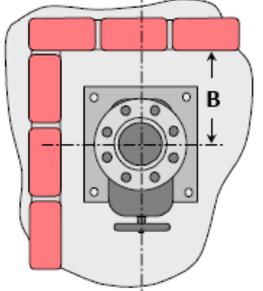
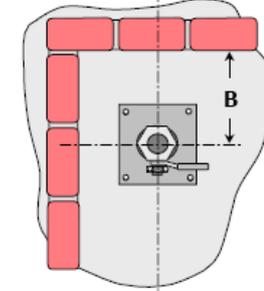
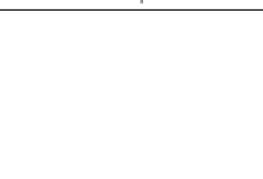
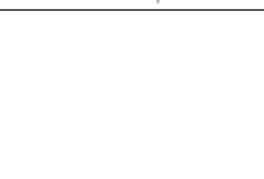
Pressure Tier
 LP = Low Pressure not exceeding 75 mbar
 MP = Medium Pressure not exceeding 2bar

NOTE
 IP –ABOVE GROUND ENTRY NOT TO BE USED
 VERTICAL BELOW GROUND INLET ONLY

DIMENSION "A" IS TO OUTSIDE OF WALL

C.4 Horizontal inlet connection heights for LP / MP/IP

MP REGULATORS COME IN STANDARD KIT FORM AND ARE ATTACHED TO THE METER, THUS THE INLET HEIGHT OF THE SERVICE IS CRITICAL IF THE METER / REGULATOR IS TO FIT

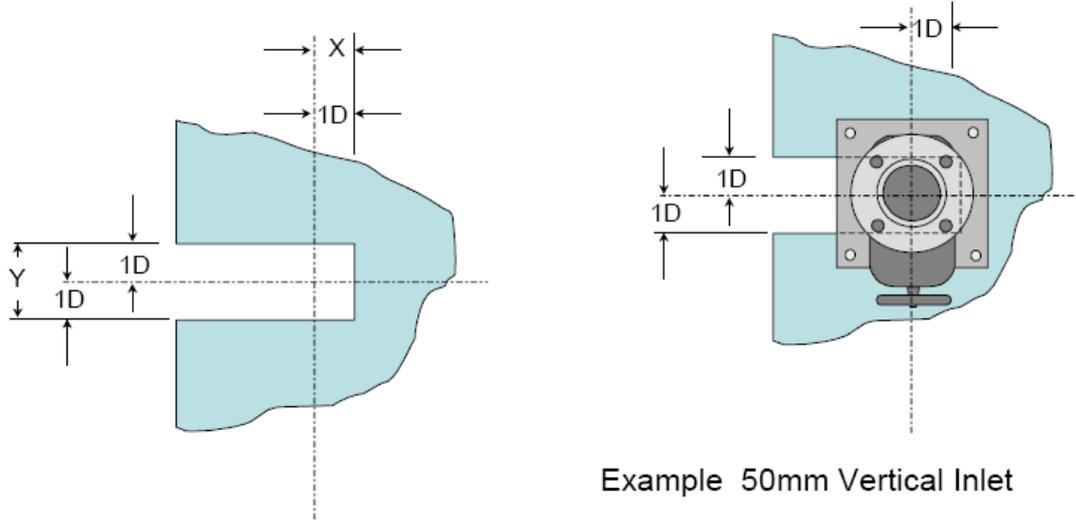
Flanged Inlet	Screwed Inlet	Vertical Inlet			
					
					

Size of ECV "D" Ø	Pressure Tier	Connection Type	Dim A Minimum distance	Dim B Minimum distance	Dim H Tolerance ± 25mm
≤ 50mm	LP / MP	SCREWED	2D	300	265
≤ 50mm	IP	FLANGED	2D	350	350
80mm - 100mm	LP/ MP/ IP	FLANGED	2D	350	500
150mm	LP/ MP/ IP	FLANGED	2D	450	500
> 150mm	LP/ MP/ IP	FLANGED	2D	750	550

Example of Dim A
 80mm PN16 ECV - Dim A = 2 x 80mm = 160mm

Pressure Tier
 LP = Low Pressure not exceeding 75 mbar
 MP = Medium Pressure not exceeding 2bar
 IP = Intermediate Pressure not exceeding 7bar

C.5 Positioning vertical inlet in concrete slotted bases

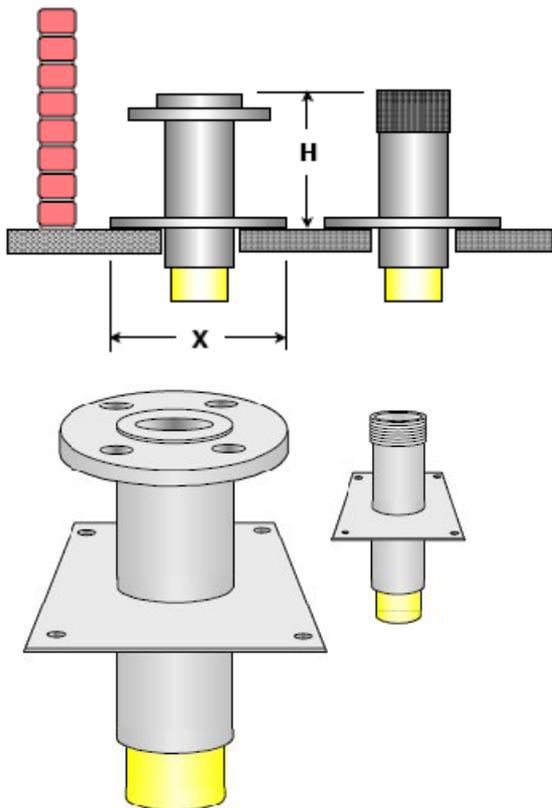


Example 50mm Vertical Inlet

Y = Slot Width 1D + 1D = 50mm + 50mm = 100mm

X = Central position from end of slot = 1D = 50mm

C.6 Examples of Steel transition fittings



Flange Size	Dim H	Dim X
50mm	170mm	250mm
80mm	295mm	310mm
100mm	269mm	350mm
150mm	231mm	450mm
200mm	256mm	550mm
250mm	218mm	650mm
300mm	192mm	750mm
Threaded Size	Dim H	Dim X
25mm	170mm	200mm
50mm	170mm	250mm

ENDNOTE

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