Worcester Controls

Industrial Ball Valves and Actuators

3-digit series valves
Identification chart

FIELD A Size

NOMINAL PIPE BORE SIZE inches	mm	DIGITS 1	2
½"	15	0	5
¾"	20	0	7
1"	25	1	0
1¼"	32	1	2
1½"	40	1	5
2"	50	2	0
2½"	65	2	5
3"	80	3	0
4"	100	4	0
6"	150	6	0
8"	200	8	0

FIELD C Series

DIGITS 6	7	8	DESCRIPTION
4	5	9	459 Series
5	1	9	519 Series
5	2	9	529 Series
5	9	9	599 Series
8	1	9	819 Series
8	2	9	829 Series
8	5	9	859 Series

FIELD E Seat and seal materials

DIGIT 13 to 17	MATERIAL	DIGIT 13 to 17	MATERIAL
A	Polyether Ether Ketone (PEEK)	N	Alpha (PTFE impregnated stainless steel)
B	Buna N	O	TFM
C	35% Carbon filled PTFE	P	Polyfill/Fluorofill
D	Nylatron	Q	F.E.P. Encapsulated buna N
E	E.P.D.M.	R	15% Glass filled PTFE
F	F.E.P	S	Silicone
G	Gamma (graphite impregnated stainless steel or graphite coated 'S' gasket)	T	Virgin PTFE
		U	Ultra high molecular wt. polyethylene (UHMWPE)
H	VX1	V	Viton
I	PFA	W	VespelSP21
J	NAB one end, VX1 the other	X	Poly Peek
K	Kel F	Y	Delrin/lubetal
L	30% Calcium flouride PTFE	Z	Flexible graphite
M	PTFE Coated 'S' gasket	7	25% Glass filled PTFE

FIELD F Types of end

The different types are detailed below.

DIGITS 18, 19, 20	CONNECTION TYPE
S E A	Screwed API (continental)
S E N	Screwed - NPT
S E T	Screwed - BSPT
S E P	Screwed - BSPP
S W A	Socket weld schedule 40
S W C	Socket weld schedule 80
O D	Socket weld IMP. OD
S O M	Socket weld metric OD
B W 5	Butt weld schedule 5
B W E	Butt weld schedule 10
B W A	Butt weld schedule 40
B W C	Butt weld schedule 80
B W B	Butt weld "afnor"
150	ANSI 150 Flange
300	ANSI 300 Flange
116	116 PN Flange

A		B			C				D			E					F			G				H
SIZE		STANDARD VARIANT			SERIES				BODY & END	BALL	STEM	SEAT	BODY SEAL	THRUST SEAL	SECONDARY STEM SEAL	GLAND PACKING	END CONNECTION			SPECIAL				REVISION
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

FIELD B Standard variant

DIGITS 3, 4, 5	VARIANT DESCRIPTION
A	Antistatic
F	Fire design

FIELD D Major component materials

DIGITS 10, 11, 12	MATERIAL
4	Carbon steel
5	Low temperature carbon steel
6	Stainless steel
7	Monel
M	Special material (see field 'G')

FIELD G Special feature

DIGITS 21, 22, 23, 24
The first digit will contain a C, N, P, Q or an M

C	Customised numbers
N/P/Q	Special Valve
M	When the letter M appears anywhere in Field D (Digits 9, 10, 11 & 12) the appropriate code for the material e.g. M121 (Nickel Aluminium Bronze) will appear in Field G. This is omitted if ithe valve is P or Q.

FIELD H Revision

DIGIT 25
This letter denotes the revision of the bill of material for the product.

Worcester Controls

Industrial Ball Valves and Actuators

Flanged valves

Identification chart

FIELD A Size

NOMINAL PIPE BORE SIZE inches	mm	DIGITS 1	2
½"	15	0	5
¾"	20	0	7
1"	25	1	0
1¼"	32	1	2
1½"	40	1	5
2"	50	2	0
2½"	65	2	5
3"	80	3	0
4"	100	4	0
6"	150	6	0
8"	200	8	0
10"	250	A	0

FIELD E DIGIT 13 Seat material

DIGIT 13	MATERIAL	DIGIT 13	MATERIAL
A	Polyether Ether Ketone (Peek)	N	Alpha
B	Buna N	P	Polyfill/Fluorofill
C	Carbon filled PTFE	Q	Lubetal
D	Delrin high pressure	R	15% Glass filled PTFE
E	E.P.D.M.	S	Silicone
F	CPR type virgin PTFE	T	Virgin PTFE
G	Gamma	U	Ultra high molecular wt. polyethylene (UHMWPE)
H	VX1		
I	PTFE impregnated inconel	V	Viton
J	Nab one end, VX1 the other	W	Vespel
K	Kel F	X	Poly peek
L	CPR type 15% Glass filled PTFE	Y	Delrin
M	FEP	Z	PTFE impegnated monel

FIELD E DIGIT 14 Seat material

DIGITS 14	MATERIAL
A	Polyether Ether Ketone (Peek)
B	Buna N
C	Carbon filled PTFE
E	E.P.D.M.
F	F.E.P.
G	Graphite coated metal gasket
K	KEL F
M	PTFE coated metal gasket
N	Neoprene
R	15% Glass filled PTFE
S	Silicone
T	Virgin PTFE
U	Ultra high molecular wt. polyethylene (UHMWPE)
V	Viton
Z	Flexible graphite

FIELD F Types of flanged connection

There are 6 digits in this field. The code is dependent upon valve series as detailed below.

DIGITS 15, 16, 17, & 18, 19, 20	RATING	FLANGE STANDARD	SERIES
150	Class 150	BS 1560/ANSI B16.5	51
110	PN10	BS 4504	
116	PN16	BS 4504	
15D	Table D	BS 10	
15E	Table E	BS 10	
15F	Table F	BS 10	
300	Class 300	BS 1560/ANSI B16.5	52
325	PN25	BS 4504	
340	PN40	BS 4504	
30H	Table H	BS 10	
D10	PN10	DIN 2542 BS 4504	53
D16	PN16	DIN 2543 BS 4504	
D25	PN25	DIN 2544 BS 4504	
D40	PN40	DIN 2545 BS 4504	
D10	PN10	DIN 2542 BS 4504	54
D16	PN16	DIN 2543 BS 4504	
D25	PN25	DIN 2544 BS 4504	
D40	PN40	DIN 2545 BS 4504	
110	PN10	BS 4504	55
116	PN16	BS 4504	
125	PN25	BS 4504	
140	PN40	BS 4504	
150	Class 150	BS 1560/ANSI B16.5	

DIGITS 15, 16, 17, & 18, 19, 20	RATING	FLANGE STANDARD	SERIES
15D	Table A-D	BS 10	55
15E	Table E	BS 10	
15F	Table F	BS 10	
15H	Table H	BS 10	
325	PN25	BS 4504	56
340	PN40	BS 4504	
30F	Table F	BS 10	
30H	Table H	BS 10	
300	Class 300	BS 1560/ANSI B16.5	
150	Class 150	BS 1560/ANSI B16.5	53
110	PN10	BS 4504	
116	PN16	BS 4504	
15D	Table D	BS 10	
15E	Table E	BS 10	
15F	Table F	BS 10	
300	Class 300	BS 1560/ANSI B16.5	54
325	PN25	BS 4504	
340	PN40	BS 4504	
30H	Table H	BS 10	
D10	PN10	DIN 2542 BS 4504	55
D16	PN16	DIN 2543 BS 4504	
D25	PN25	DIN 2544 BS 4504	
D40	PN40	DIN 2545 BS 4504	

A		B			C			D				E		F						G				H
SIZE		STANDARD VARIANT			SERIES		–	BODY	END	BALL	STEM	SEAT	SEAL	END 1			END 2			SPECIAL				REVISION
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

FIELD B Standard variant

DIGITS 3, 4, 5	VARIANT DESCRIPTION
A	Antistatic
B	Full bore (18/19 series)
C	Cryogenic (50 series)
E	High integrity
F	Fire design
J	Steam jacket
K	BS 5351 certified
LT	Low temperature
R	Non-fire design

FIELD C Series

DIGITS 6	7	DESCRIPTION
1	8	18 Series
1	9	19 Series
5	1	51 Series
5	2	52 Series
5	3	53 Series
5	4	54 Series
5	5	55 Series
5	6	56 Series
6	3	63 Series
9	6	96 Series
9	7	97 Series

FIELD D Major component materials

Each of the 4 major components has its material recorded by putting a number into the 'D' Field

DIGITS	
9	Body
10	End
11	Ball
12	Stem

DIGITS 9, 10, 11, 12	MATERIAL
1	Brass
2	Ductile iron (SG & nodular)
4	Carbon steel
6	Stainless steel
H	Nickel-aluminium bronze
M	Special material (see field 'G')
5	Carbon Steel low temp (LCB)
8	Carbon Steel low temp (LCC)

FIELD G Special feature

DIGITS 21, 22, 23, 24

The first digit will contain a C, N, P, Q or an M

C	Customised numbers
N/P/Q	Special Valve
M	When the letter M appears anywhere in Field D (Digits 9, 10, 11 & 12) the appropriate code for the material e.g. M121 (Nickel Aluminium Bronze) will appear in Field G. This is omitted if the valve is P or Q.

FIELD H Revision

DIGIT 25
This letter denotes the revision of the bill of material for the product.

Worcester Controls

Industrial Ball Valves and Actuators

Non-flanged valves

Identification chart

FIELD A Size

NOMINAL PIPE BORE SIZE inches	mm	DIGITS 1	2
¼"	8	0	2
⅜"	10	0	3
½"	15	0	5
¾"	20	0	7
1"	25	1	0
1¼"	32	1	2
1½"	40	1	5
2"	50	2	0
2½"	65	2	5
3"	80	3	0
4"	100	4	0
6"	150	6	0

FIELD E DIGIT 13 Seat material

DIGIT 13	MATERIAL	DIGIT 13	MATERIAL
A	Polyether Ether Ketone (Peek)	N	Alpha
B	Buna N	P	Polyfill/Fluorofill
C	Carbon filled PTFE	Q	Lubetal
D	Delrin high pressure	R	15% Glass filled PTFE
E	E.P.D.M.	S	Silicone
F	CPR type virgin PTFE	T	Virgin PTFE
G	Gamma	U	Ultra high molecular wt. polyethylene (UHMWPE)
H	VX1		
I	PTFE impregnated inconel	V	Viton
J	Nab one end, VX1 the other	W	Vespel
K	Kel F	X	Poly peek
L	CPR type 15% Glass filled PTFE	Y	Delrin
M	FEP	Z	PTFE impegnated monel

FIELD E DIGIT 14 Seal material

DIGIT 14	MATERIAL
A	Polyether Ether Ketone (Peek)
B	Buna N
C	Carbon filled PTFE
E	E.P.D.M.
F	F.E.P.
G	Graphite coated metal gasket
K	KEL F
M	PTFE coated metal gasket
N	Neoprene
R	15% Glass filled PTFE
S	Silicone
T	Virgin PTFE
U	Ultra high molecular wt. polyethylene (UHMWPE)
V	Viton
Z	Flexible graphite

FIELD F Types of end

There are 6 digits in this field - 3 for each end of the valve.
The different types are detailed below.

DIGITS 15, 16, 17 or 18, 19, 20	CONNECTION TYPE
S E A	Screwed API (continental)
S E N	Screwed - NPT
S E T	Screwed - BSPT
S E P	Screwed - BSPP
S W A	Socket weld schedule 40
S W C	Socket weld schedule 80
O D	Socket weld IMP. OD
S O M	Socket weld metric OD
B W 5	Butt weld schedule 5
B W E	Butt weld schedule 10
B W A	Butt weld schedule 40
B W C	Butt weld schedule 80
B W B	Butt weld "afnor"
X B C	Extended butt weld schedule 80
R D C	Reduced length extended butt weld schedule 80
X B 6	Extended butt weld schedule 160
R B 6	Reduced length extended butt weld schedule 160
X S W	Extended socket weld
R S W	Reduced length extended socket weld

If the valve is of the three-way type with 3 different ends, with no special features the connection type coding for the third end is listed 21, 22, 23. If there are special features then only the first two ends are recorded, the third being assumed the same.

A		B			C			D				E		F						G					H
SIZE		STANDARD VARIANT			SERIES		–	BODY	END	BALL	STEM	SEAT	SEAL	END 1			END 2			SPECIAL					REVISION
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	

FIELD B Standard variant

DIGITS 3, 4, 5	VARIANT DESCRIPTION
A	Antistatic
B	Full bore 13/14/18/19
F	Fire design
AW	Antistatic steam valve
5HP	High pressure (5000 PSIG)
M	Metric
C	Cryogenic
N	No extension gland
S	Side entry
D	Diverter
T	Mixer

FIELD C Series

DIGITS 6	7	DESCRIPTION
1	3	13 Series
1	4	14 Series
1	8	18 Series
1	9	19 Series
4	4	44 Series
4	5	45 Series
5	9	59 Series
8	1	81 Series

FIELD D Major component materials

Each of the 4 major components has its material recorded by putting a number into the 'D' Field

DIGITS	
9	Body
10	End
11	Ball
12	Stem

DIGITS 9, 10, 11, 12	MATERIAL
1	Brass
2	Ductile iron (SG & nodular)
3	Aluminium
4	Carbon steel
6	Stainless steel
H	Nickel-aluminium bronze
M	Special material (see field 'G')

FIELD G Special feature

DIGITS 21, 22, 23, 24 The first digit will contain a C, N, P, Q or an M	
C	Customised numbers
N/P/Q	Special Valve
M	When the letter M appears anywhere in Field D (Digits 9, 10, 11 & 12) the appropriate code for the material e.g. M121 (Nickel Aluminium Bronze) will appear in Field G. This is omitted if ithe valve is P or Q.

FIELD H Revision

DIGIT 25
This letter denotes the revision of the bill of material for the product.

Series 40R, 39R & 33 Actuator
Identification chart

FIELD A - Size

Digits 1 & 2

05 Norbro Actuator	30 Norbro Actuator
10 Norbro Actuator	33 Norbro Actuator
15 Norbro Actuator	35 Norbro Actuator
20 Norbro Actuator	40 Norbro Actuator
25 Norbro Actuator	42 Norbro Actuator

FIELD C Product series

Digits 7 & 8
40 - Product code 40R
39 - Product code 39R
33 - Product code 33

FIELD E Variations

Digit 14 Pinion drive
E - Standard female drive with Namur slot
M - Standard male drive with Namur slot
N - DIN 3337 female drive (45°) with Namur slot
X - Special feature

Digit 15 Standard options
O - If not used
H - Hydraulic

Digit 17 Revision

A		B			C		D				E			
SIZE		ROTATION	BODY	FUNCTION	PRODUCT SERIES		FINISH	TEMPERATURE	INLET ENDCAP	SWITCH ENDCAP	PINION DRIVE	STANDARD OPTIONS		REVISION
1	2	4	5	6	7	8	10	11	12	13	14	15	16	17

FIELD B Variations

Digit 4 Rotation
R - Standard 40R - 92°
39R - 94.4°
33R - 180°

Digit 5 Body
D - Standard (includes DIN/ISO location ring Namur top mounting pattern, metric tappings)
K - As 'D' without ISO/DIN location ring

Digit 6 Function
A - Double acting
B - Spring return 10 springs
C - Spring return 8 springs
D - Spring return 6 springs
E - Spring return 4 springs
F - Spring return 2 springs (05 only)

FIELD D Variations

Digit 10 Finish
1 - Standard gold body/black end caps-anodised
2 - Epoxy coated
3 - PVC coated
X - Special finish

Digit 11 Temperature

S - Standard	-20°C to +100°C
H - High temperature	-20°C to +150°C
L - Low temperature	-40°C to +85°C
X - Special 'O' rings	

Digit 12 Inlet endcap
D - Standard Namur tappings
G - Norbro tappings
K - Access
S - Special large port

Digit 13 Switch endcap
1 - Standard metric tapping for switch box
2 - Unified tapping for switch box
B - Blank
P - P & F endcap not included
O - 05 Actuators only
M - Metric limit stops