YARWAY MODELS 16/36/56 SAMPLING VALVES

INSTALLATION AND MAINTENANCE INSTRUCTIONS

Before installation these instructions must be fully read and understood

UNPACKING

The Models 16/36/56 are packed with the greatest of care in wooden boxes or cartons for protection during handling or transit to site. If it is found, however, that damage has occurred during shipment, then this should be reported immediately to your forwarder or Yarway representative.
Particular care should be taken with valves equipped with limit switches, air cylinder, glass bottle, etc.
If the unit needs to be stored, please refer to the storage procedure as described at the end.

INSTALLATION

The Models 16/36/56 are supplied with either threaded or flanged connections. A suitable sealing compound as PTFE tape or equivalent should be used for sealing. Do not apply any force to the air cylinder when screwing-in the valve assembly.

DISMANTLING INSTRUCTIONS (SEE FIG. 3 UP TO INCLUDING FIG. 6)

Overhauling the sampling valve is best carried out after removing it from the vessel, drip ring or pipeline to the workshop.

Model 56
Grind-off the weld between the stem bushing (12) and the valve bonnet (11). Untighten and remove the 4 cap screws. Remove the bonnet assembly, unscrew the stem bushing for the stem (10) and remove stem/coupling/plunger assembly. Disassemble the plunger (5) by removing the 2 half couplings (9) that hold it to the stem. Remove other valve internals, care should be taken not to lose the securing ball (3). In special alloy valves, a key may be fitted in place of the securing ball.

Model 16/36
Grind-off the weld between the stem bushing and the valve bonnet. Unscrew the stem bushing counter clockwise. Remove the stem bushing together with the stem, the coupling (9) and the plunger (5). Remove other valve internals, care should be taken not to lose the securing ball. In special alloy valves, a key may be fitted in place of the securing ball.

CLEANING

Clean all internals thoroughly using a suitable solvent. When necessary, use a find grade grinding cloth to repolish surfaces. The plunger should be free of longitudinal scratches or score marks. Plunger can not be remachined but may be ground with a fine grade of grinding cloth. Special care should be taken to clean the internal bore of the body where the upper/lower seal rings (2) (6) are located, as sealing integrity is very much dependent on the cleanness and smoothness of these surfaces.

REASSEMBLY

Reassembly of the valve is the reverse of the procedure given above. Do not use old seal rings (2) (6) and stem bushing (12). Sealing integrity may be impaired and bushing can get brittle after repair welding. Filletweld the bushing to the body, using GTAW rod AWS A5.14/A5.14M or ErNi1 (ISO 18274- S Ni 2061 (NiTi3)) type electrode (TIG), see figure 1.
Note: Yarway can supply a special tool to facilitate the reassembly of the valve. The WPS for the fillet weld is available on request.

ACTUATION (SEE FIG. 2 AND FIG. 5)

The Models 16/36/56 can be supplied with air cylinder actuators. These are specially adapted "Festo" or "Norgren" type cylinders (other manufacturer type upon request) which are not commercially available through the normal distribution network.
The cylinder is a non-repairable item. Cylinders are made to individual order and this should be considered when deciding upon which spare parts should be retained at site. When ordering replacement cylinders, the valve plunger extension should be specified. Always use a clean dry instrument air supply with this equipment. The air supply pressure should have a minimum of 3.5 bar.

TEMPERATURE LIMITATIONS

Sampling valves are supplied with various seal materials. Carefully check the original seal type before ordering spare parts.
Maximum temperature seals are indicated in the product documentation.

MAINTENANCE

The Models 16/36/56 require little maintenance. Regular greasing of the stem, however, is recommended using a high quality molybdenum grease.

INSPECTION

Sampling valve body, plunger, glands and seal rings should be smooth and free from scratches, indentations or any other physical damage, or damaged internal components will impair sealing capability and should be replaced if this is evident. Always renew sealing rings, as a matter of course, if the valve is dismantled for any reason.

Valve testing

The hydrostatic and leakage testing at the factory is performed based on the following parameters using water (for threaded end valves with PTFE(/filled) seals):
- Hydrostatic shell test (valve open) at 94 bar for 1 minute.
- Seal leakage test (valve closed) at 64 bar for 1 minute.

Acceptance criteria: no visible leakage.

NOTES

- The maximum operating temperature is limited by the seal ring material. Check the identification plate for details.
- If there is evidence of leakage, and the gland springs are adjusted correctly, then do not tighten further but dismantle the valve for inspection.
- Valves with graphite seals are tested at a lower pressure. Check the identification plate for details.

FIGURE 1

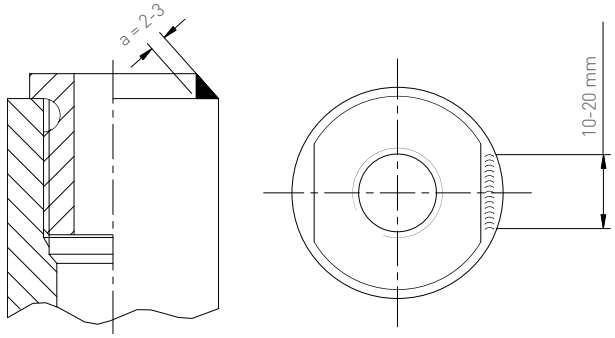

FIGURE 2 - PNEUMATIC SYSTEMS (EXAMPLES)

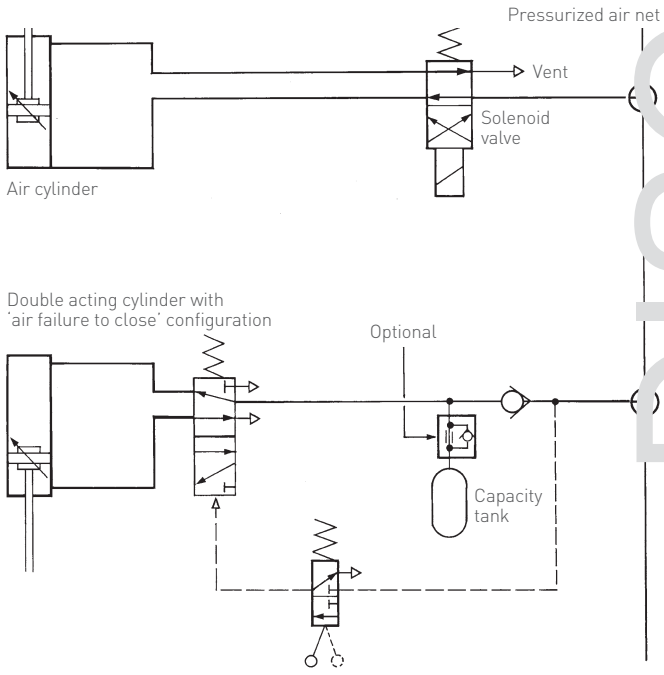

FIGURE 3 - YARWAY MODEL 56

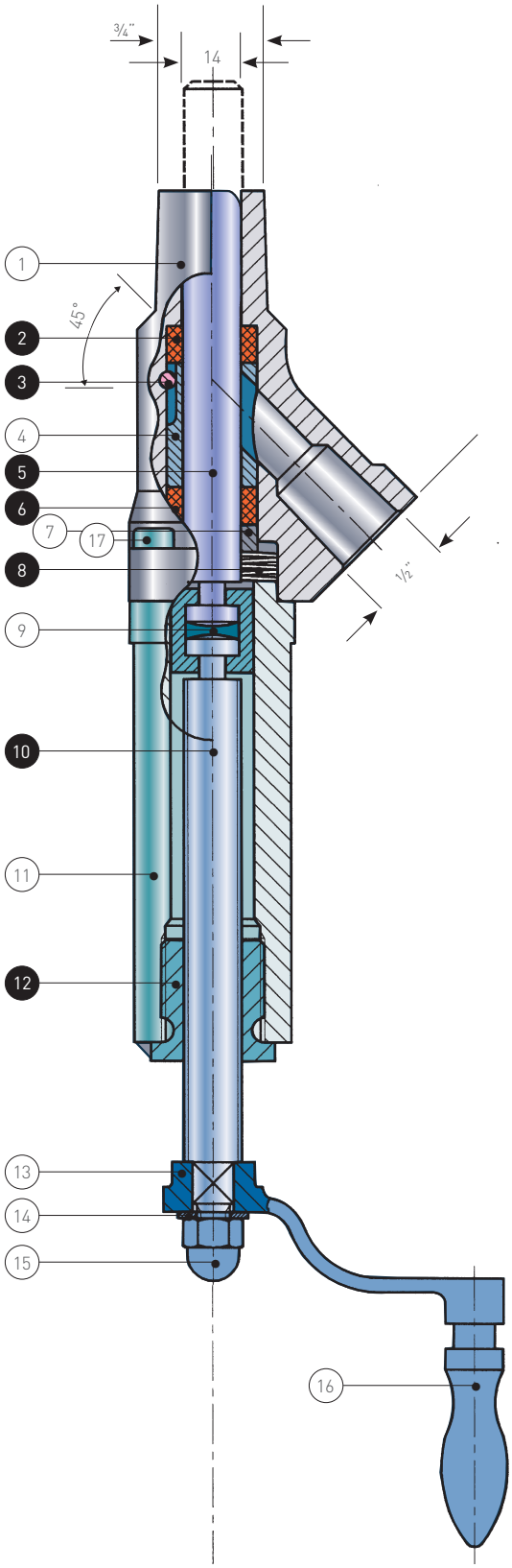

TABLE 1 - STANDARD MATERIALS

Item	Name	Material	Equivalent
1	Body	(316Nb)	1.4581
2*•	Lower seal	PTFE	PTFE
3•	Securing ball	St. Steel	St. Steel
4	Lower gland	A182 F316L	1.4404
5•	Plunger	A276 316	1.4401
6*•	Upper seal	PTFE	PTFE
7	Upper gland	A276 316	1.4401
8•	Belleville washers	50 CrV 4	50 CrV 4
9	Coupling	AISI 420	1.4021
10•	Stem	AISI 420	1.4021
11	Bonnet	A351 CF8	1.4308
12•	Stem bushing	GGG60 zinc plated	GGG60 zinc plated
13	Crank	St. Steel	St. Steel
14	Washer	St. Steel	St. Steel
15	Cap nut	St. Steel	St. Steel
16	Handle	St. Steel	St. Steel
17	Bolt	St. Steel	St. Steel

NOTES

* Other materials upon request

• Recommended spares

Weight: 1.8 kg

For other penetration lengths and/or materials, please consult Yarway or your local Emerson representative

FIGURE 4 - YARWAY MODEL 36

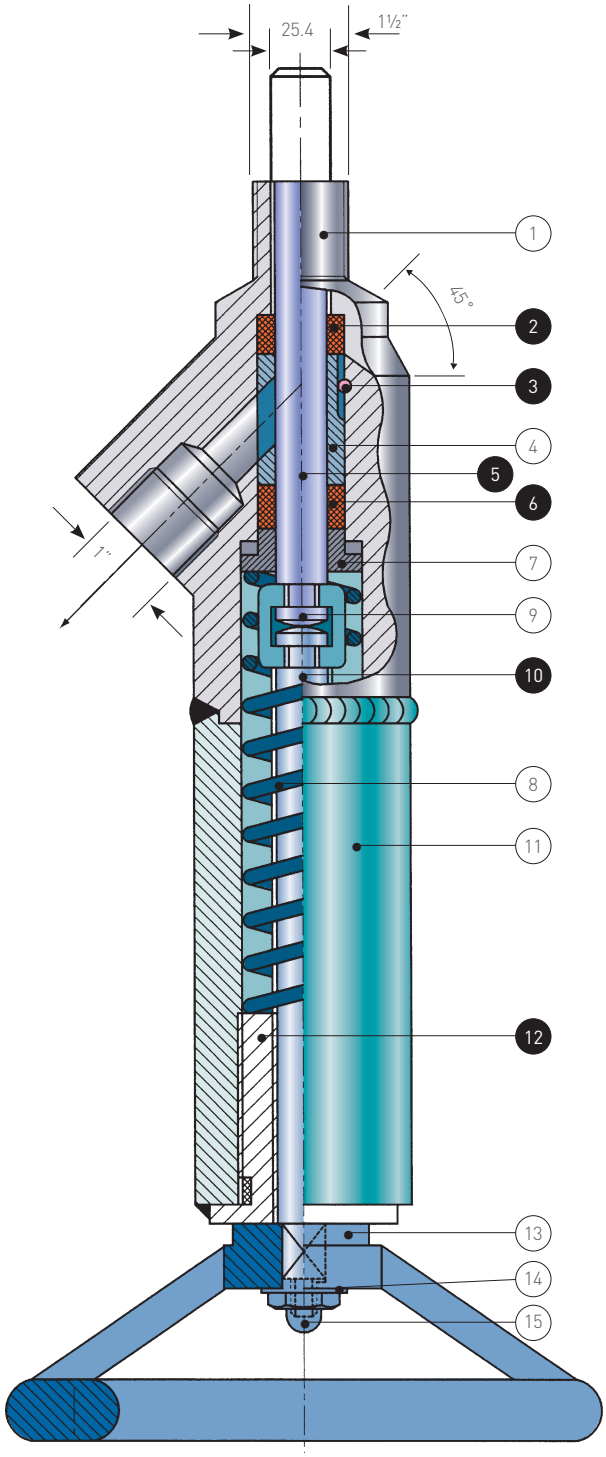

TABLE 2 - STANDARD MATERIALS

Item	Name	Material	Equivalent
1	Body	A351 CF8M	1.4408
2*•	Lower seal	PTFE	PTFE
3•	Securing ball	St. Steel	St. Steel
4	Lower gland	A182 F316L	1.4404
5•	Plunger	A182 F316L	1.4404
6*•	Upper seal	PTFE	PTFE
7	Upper gland	A182 F316L	1.4404
8	Helical spring	-	1.1200
9**	Coupling	AISI 630	1.4542
10•	Stem	AISI 420	1.4021
11	Bonnet	TP312 316L	1.4404
12•	Stem bushing	GGG60 zinc plated	GGG60 zinc plated
13	Handwheel	Aluminium	Aluminium
14	Washer	St. Steel	St. Steel
15	Cap nut	St. Steel	St. Steel

NOTES

* Other materials upon request

** For Copper-free environments, material 1.4005

• Recommended spares

Weight: 6.5 kg

For other penetration lengths and/or materials, please consult Yarway or your local Emerson representative

FIGURE 5 - YARWAY MODEL 56 WITH TYPICAL AIR CYLINDER

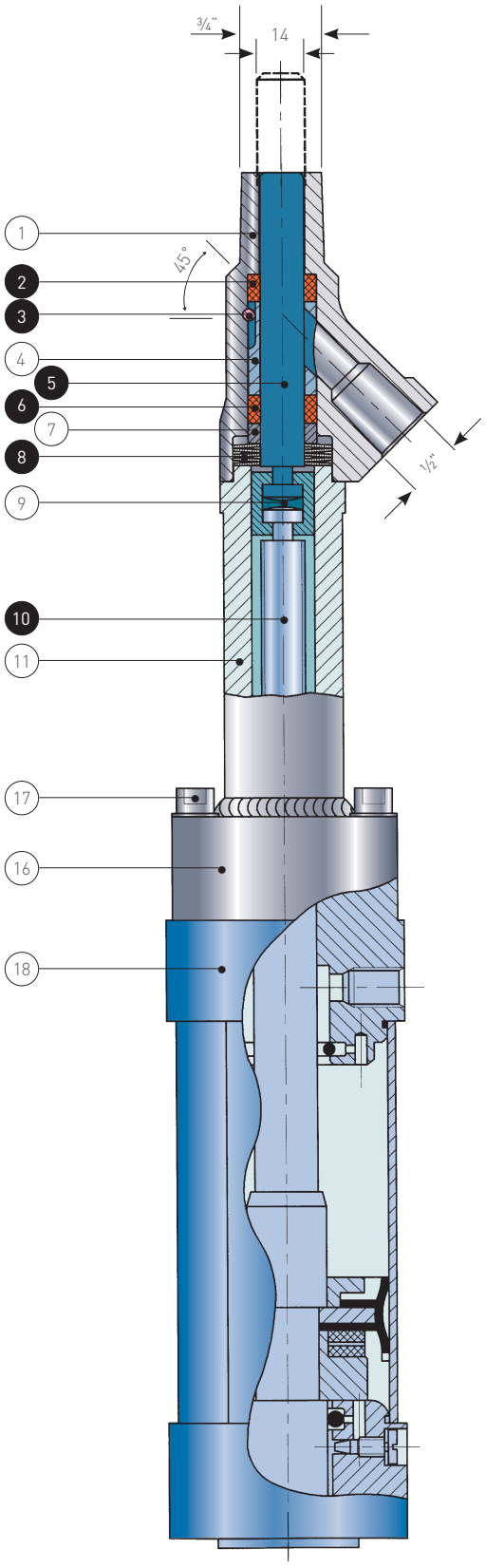

TABLE 3 - STANDARD MATERIALS

Item	Name	Material	Equivalent
1	Body	(316Nb)	1.4581
2*•	Lower seal	PTFE	PTFE
3•	Securing ball	St. Steel	St. Steel
4	Lower gland	A182 F316L	1.4404
5•	Plunger	A182 F316L	1.4404
6*•	Upper seal	PTFE	PTFE
7	Upper gland	A182 F316L	1.4404
8•	Belleville washers	50 CrV 4	50 CrV4
9	Coupling	AISI 410	1.4008
10•	Stem	AISI 420	1.4021
11	Bonnet	A351 CF8	1.4308
16	Adaptor	A182 F316L	1.4404
17**	Bolt	St. Steel	St. Steel
18	Air cylinder	Aluminium/SS	Aluminium/SS

NOTES

* Other materials upon request

** Max. air supply: 10 bar
Pneumatic connection: G⅜"
Spring return, upon request

• Recommended spares

Weight: 5.3 kg

For other penetration lengths and/or materials, please consult Yarway or your local Emerson representative

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FIGURE 6 - YARWAY MODEL 56 WITH BOTTLE HOLDER

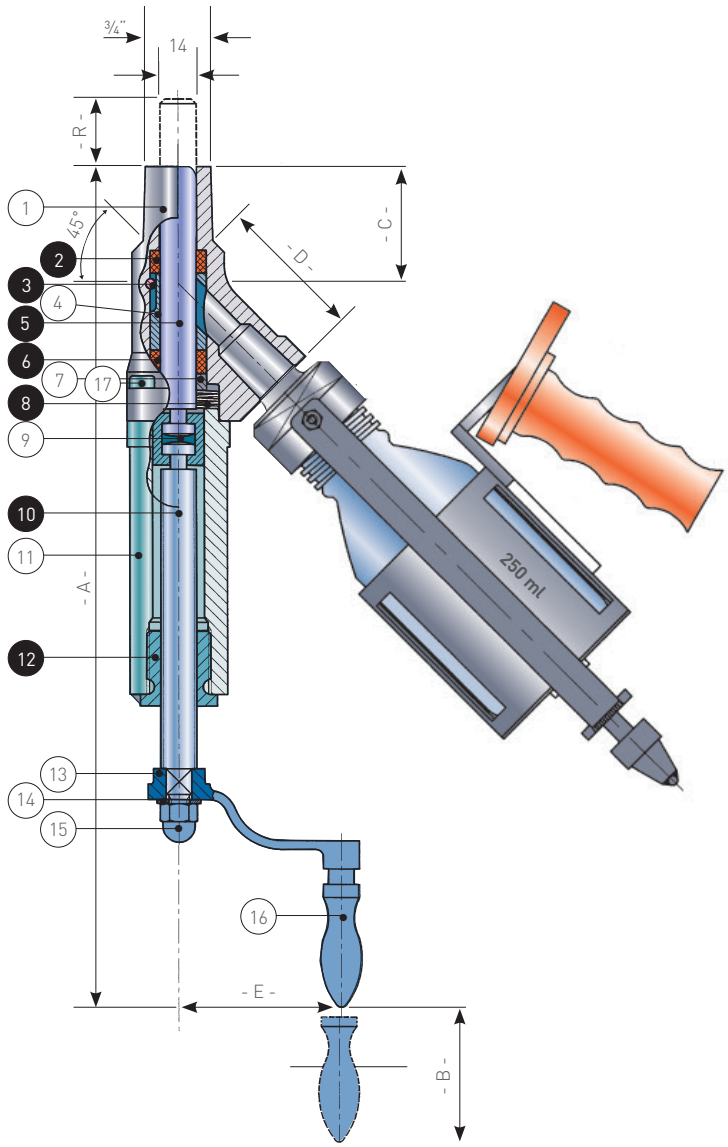

TABLE 5 - DIMENSIONS (mm)

R	A	B	C	D	E
0	271	60	45.5	55	60
50	321	110	45.5	55	60

TABLE 4 - STANDARD MATERIALS

Item	Name	Material	Equivalent
1	Body	(316Nb)	1.4581
2*•	Lower seal	PTFE	PTFE
3•	Securing ball	St. Steel	St. Steel
4	Lower gland	A182 F316L	1.4404
5•	Plunger	A182 F316L	1.4404
6*•	Upper seal	PTFE	PTFE
7	Upper gland	A182 F316L	1.4404
8•	Belleville washers	50 CrV 4	50 CrV4
9	Coupling	AISI 410	1.4006
10•	Stem	AISI 420	1.4021
11	Bonnet	A351 CF8	1.4008
12•	Stem bushing	GGG60 zinc plated	GGG60 zinc plated
13	Crank	St. Steel	St. Steel
14	Washer	St. Steel	St. Steel
15	Cap nut	St. Steel	St. Steel
16	Handle	St. Steel	St. Steel
17	Bolt	St. Steel	St. Steel

NOTES

* Other materials upon request
• Recommended spares
Weight: 3.2 kg
Dimensions may be subject to change without prior notification
Yarway will provide a certified dimensional drawing upon request
For other penetration lengths and/or materials, please consult Yarway or your local Emerson representative

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STORAGE PROCEDURE

Upon receipt, check the sampling valve and the packing case for any transit damage. Any damage to the sampling valve should be reported immediately to Yarway or their local agent.
Any damage to the packing container should be rectified to prevent the ingress of dust or water, prior to placing the equipment into storage. Check the information contained on the identification plate/tagplate and documentation and return the unit to the packing with protective covers in place.

For short term storage, up to 6 months duration, no additional preservation measures are necessary. Retain the unit in the original packing in a clean, dry indoor location. If outdoor storage is unavoidable, then the packing case should be enclosed in a waterproof covering.

For long term storage, use only a dry indoor location. Remove the stem packing and ensure that the sampling valves are dry and free from moisture.

Apply a Cosmoline type grease to machined faces, valve stem and stuffing box. Retain sampling valve in the original packing and inspect at 3 monthly intervals to ensure that no deterioration has occurred.

Before placing the sampling into service, replace stem packing and inspect other components, such as actuator seals, etc. to ensure correct functioning. Follow the procedure for installation as detailed in the Installation and Maintenance Instruction.

NOTE
Materials and data of units supplied, may deviate from this Instruction Manual. Please consult order documents in case of doubt.

The sampling valve is classified under European Directive 97/23/EC under Article 3, sub 3 (SEP) / Note: Gases and Fluids Group 1).

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