

# User Guide

## Elcometer Media Valves - ASME

General Valve (GV)

Mini General Valve (MGV)

Automatic General Valve (AGV)



### **⚠ WARNING**

Before carrying out any replacement or maintenance of any part of the Abrasive Blast Machine (ABM) or any item within the Abrasive Blast System, please read and understand the User Guide for the Abrasive Blast Machine.

Failure to follow operating instructions could result in death, serious injury or damage to equipment.

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For the avoidance of doubt, please refer to the original English language version of this user guide. The most recent version is available to download via the blasting section of the Elcometer website, [www.elcometer.com/blasting](http://www.elcometer.com/blasting).

Please ensure that all product packaging is disposed of in an environmentally sensitive manner. Consult your local Environmental Authority for further guidance.

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## 1 PRODUCT OVERVIEW

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**Before carrying out any replacement or maintenance of any part of the Abrasive Blast Machine (ABM) or any item within the Abrasive Blast System, please read and understand the User Guide for the Abrasive Blast Machine.**



**Depressurise the ABM, bleed all the air supply lines to the ABM and disconnect the ABM from the compressor. Failure to do so could cause serious injury or death.**

The Elcometer General Valve (GV), Mini General Valve (MGV) and Automatic General Valve (AGV) can be incorporated within a dry Abrasive Blast System (ABM) to control the flow of dry abrasive media through the valve.

For the GV and MGV media valves, the media flow is manually controlled through the turning of the orange knob anti-clockwise or clockwise which opens and closes the valve respectively.

In addition to controlling the amount of media flowing through the valve, the AGV media valve automatically closes the media valve, and hence the flow of abrasive media through the media valve, as soon as the deadman's handle is released.

In this way the AGV prevents media flowing through the valve under gravity and settling at the base of the mixer valve – thereby avoiding any subsequent slug of abrasive flowing down the blast hose to the blast nozzle as soon as the deadman's handle is closed again.

The indicator scale below the orange knob indicates the valve opening position (Fully Open: 100%, Fully Closed: “0%”).

The Elcometer GV, MGV & AGV valve opening position – and hence the media flow rate - can be adjusted either before the ABM is pressurised or whilst the ABM is in use.

*Note: If the valve opening is to be adjusted whilst the ABM is in use, for added safety of all personnel within the blast area, it is recommended that this is undertaken by the Pot Tender and not the abrasive blaster themselves.*

## 1 PRODUCT OVERVIEW (continued)

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The Elcometer GV, MGV and AGV must be used with the elcoTOUGH™ Valve Liner which is designed to protect the valve from wear. The valve remains at the selected position during operation and can only be closed manually.

Through use, the elcoTOUGH™ valve liner will wear. To maintain the same media flow rate through the valve, the valve opening position may have to be altered as the valve liner wears.

The scale can also be used to indicate when the valve liner has been worn too thin and therefore should be replaced to prevent damage to the valve itself. To determine the degree of abrasive wear on the elcoTOUGH™ valve liner, rotate the orange knob until the valve is fully closed and then read the scale indicator. If the reading is in the red, replace the valve liner immediately.

## 2 REPLACING THE elcoTOUGH™ VALVE LINER

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***Please refer to the Elcometer GV, MGV and AGV drawings in Section 6, 7 and 8.***

The elcoTOUGH™ liner can be replaced without the need to remove the media valve completely from the ABM. Unless the Elcometer Shut Off Valve (part number SOV-N) is fitted, either empty the ABM of all media or, if the ABM is less than half full, carefully tip the ABM on its back, making sure that no abrasive media flows through the exhaust port.

- 1 Depressurise the abrasive blast machine, bleed all the air supply lines to the ABM and disconnect the ABM from the compressor.
- 2 If the Elcometer Shut Off Valve (SOV) is fitted, close the SOV. The SOV is closed when the black handle is at 90° to the SOV body.
- 3 Loosen, but do not remove the top 4 and bottom 4 flange hex bolts.
- 4 Loosen, remove and carefully store the 2 valve bolts and washers.
- 5 Fully loosen, remove and carefully store the top 2 and bottom 2 flange bolts from the same side and carefully remove one half of the media valve body. Set down on a clean surface.

## **2 REPLACING THE elcoTOUGH™ VALVE LINER (continued)**

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- 6 Remove the old elcoTOUGH™ valve liner and fit the new elcoTOUGH™ valve liner taking care to ensure that the top and bottom of the valve liner fits in between the flange and the top of the media valve at the top, and in between the media valve and the mixer T at the bottom.
- 7 Replace the media valve half, making sure that the valve liner is correctly positioned.
- 8 Re-fit and fully tighten the valve bolts then refit the 4 flange bolts.
- 9 Fully tighten all 8 flange bolts.
- 10 If the Elcometer Shut Off Valve (SOV) is fitted, open the SOV. The SOV is open when the black handle is in line with the SOV body.
- 11 If the ABM has been laid on its back, re-position the ABM in the correct upright position.
- 12 Refill the ABM with dry abrasive media.
- 13 Re-connect the compressed air supply and ensure that all connections are tight throughout the blast system and that all safety pins and whip cords are attached correctly.

## **3 REMOVING THE MEDIA VALVE FROM THE ABM**

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***Please refer to the Elcometer GV, MGV and AGV drawings in Section 6, 7 and 8.***

- 1 Depressurise the abrasive blast machine, bleed all the air supply lines to the ABM and disconnect the ABM from the compressor.
- 2 If the Elcometer Shut Off Valve (SOV) is fitted, close the SOV. The SOV is closed when the black handle is at 90° to the SOV body. If the SOV is not fitted, either empty the ABM of all media or, if the ABM is less than half full, carefully tip the ABM on its back, making sure that no abrasive media flows through the exhaust port.
- 3 If removing the AGV, disconnect the air supply (red hose) from the media valve by unscrewing the coupling from the media valve.
- 4 Loosen and remove the bottom 4 flange bolts and gently rest the mixer T on the ground.
- 5 Holding the media valve to avoid it dropping, loosen and remove the top 4 flange bolts and remove the media valve.

## **4 DISASSEMBLING & RE-ASSEMBLING GV & MGV VALVES**

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***Please refer to the Elcometer GV and MGV drawings in Section 6 and 7.***

To replace the elcoTOUGH™ valve liner, please refer to Section 2 on page en-3.

- 1 Once the media valve has been removed from the Abrasive Blast Machine (see Section 3 on page en-4), to remove the valve stem assembly, loosen and remove the 4 bolts, taking care not to lose the 4 spring washers and nuts.
- 2 Attach a spanner to the flats on the valve nut and, using a second spanner, unscrew the valve plunger and set aside or replace as required.
- 3 Holding onto the orange handwheel assembly, loosen the box screw.  
*Note: Once this box screw is removed, all other items can be pulled apart, allowing the nylon washer, rubber o-ring and handwheel assembly to be removed and / or replaced.*
- 4 When re-assembling the media valve, re-grease the o-ring with a good quality grease.

## **5 DISASSEMBLING & RE-ASSEMBLING AGV AUTOMATIC VALVE STEM ASSEMBLY**

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***Please refer to the Elcometer AGV drawings in Section 8.***

To replace the elcoTOUGH™ valve liner, please refer to Section 2 on page en-3.

- 1 Once the media valve has been removed from the Abrasive Blast Machine (see Section 3 on page en-4), to remove the automatic valve stem assembly, loosen and remove the 4 bolts, taking care not to lose the 4 spring washers.
- 2 Unscrew and remove the valve handwheel & shaft from the automatic valve assembly and set aside. Replace the rubber o-ring as required.

## **5 DISASSEMBLING & RE-ASSEMBLING AGV AUTOMATIC VALVE STEM ASSEMBLY (continued)**

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- 3 Place the remainder of the automatic valve stem assembly upside down in a vice, and firmly clamp the assembly using the machined flats located on the sides of the actuator spring housing.
- 4 Using a Rubber Filter Strap Wrench (part number MT30276), loosen off, but do not remove, the actuator cylinder.
- 5 Remove the automatic valve stem assembly from the vice, and carefully remove the actuator cylinder from the actuator spring housing.
- 6 Remove and / or replace as required the spring and stop ring.
- 7 To replace all other items within the assembly, including the piston o-ring, the piston seal, actuator piston and valve plunger attach one spanner to the piston nut and a second spanner to the valve plunger, and undo both items at the same time. Replace items as required.
- 8 When re-assembling the media valve, re-grease all the rubber o-rings and seals with a good quality grease.



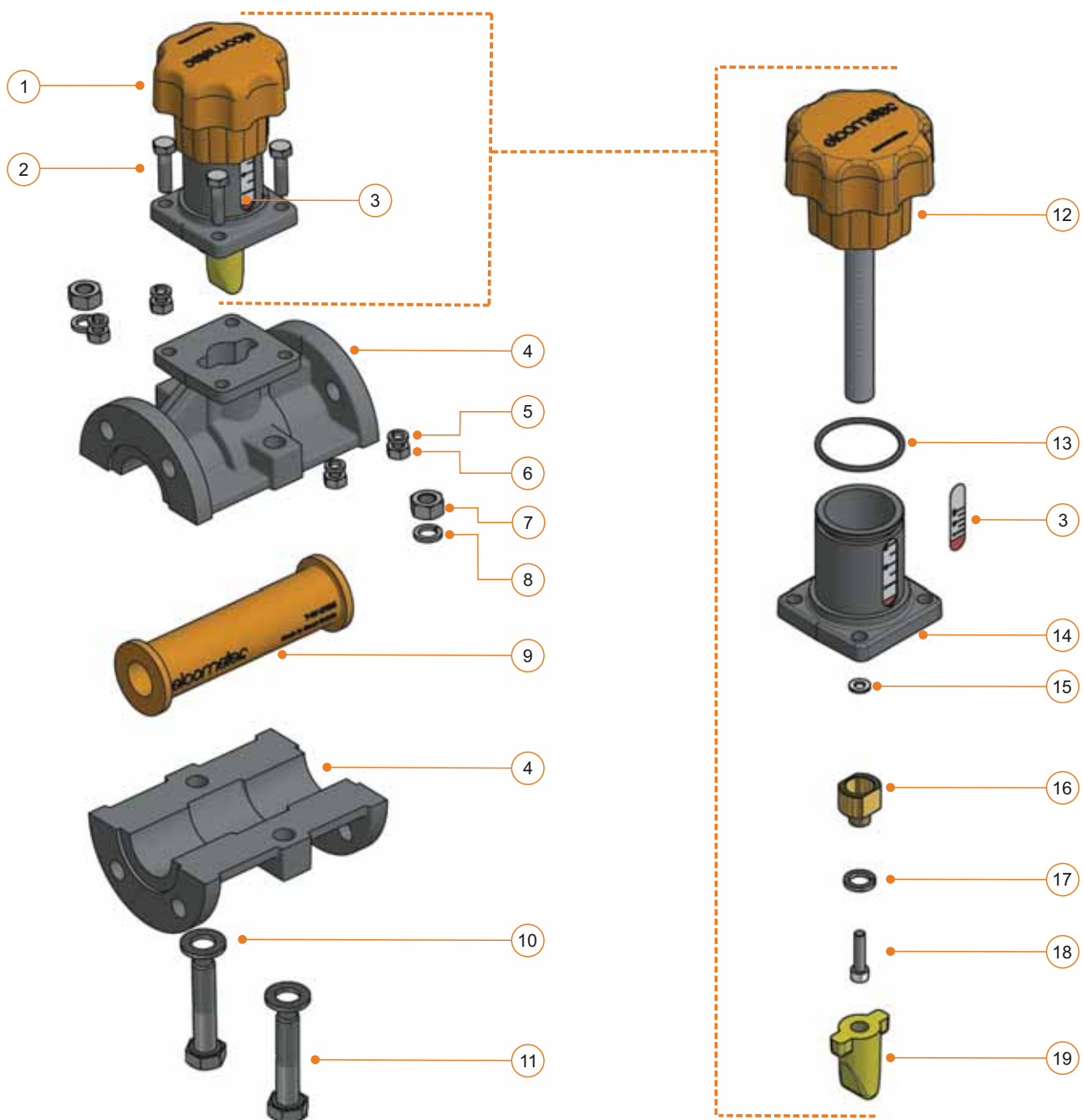
## 6 ELCOMETER GV: DRAWINGS & PARTS LIST



Part Number	Description
GV-N	Elcometer General Valve (GV) - NPT Thread

### Technical Specification

Operating Temperature	32°F to 140°F (0°C to 60°C)
Maximum Working Pressure	217psi (15bar)
Compatible with Models	1440, 1460, 20100, 24200, 24285 20100H, 24200H, 24285H





## 6 ELCOMETER GV: DRAWINGS & PARTS LIST (continued)

### ELCOMETER GV SPARE PARTS

Item	Part Number	Description
1	MT28557	Elcometer GV Stem Full Assembly
4	MT29993	Elcometer GV Housing Body
9	GV-LINER1	elcoTOUGH™ Rubber Valve Liner for 1" General Valve
	GV-LINER5	elcoTOUGH™ Rubber Valve Liner for 1" General Valve (x5)
	GV-LINER20	elcoTOUGH™ Rubber Valve Liner for 1" General Valve (x20)
12	MT30166	Elcometer GV Handwheel and Shaft
14	MT30076	Elcometer GV Shaft Housing
16	MT30077	Valve Nut
19	MT30001	Elcometer GV Plunger

### ELCOMETER GV SERVICE KITS

Item	Part Number	Description
-	<b>MT30049</b>	<b>Elcometer GV Service Kit 1 (contains the items listed below)</b>
2	-	M8 x 30 Zinc Plated Hex Head Bolt (x4)
5	-	M8 Steel Spring Washer (x4)
6	-	M8 Zinc Plated Steel Nut (x4)
-	<b>MT30045</b>	<b>Elcometer GV Service Kit 2 (contains the items listed below)</b>
7	-	M12 Zinc Plated Steel Nut (x2)
8	-	M12 Steel Spring Washer (x2)
10	-	M12 Zinc Plated Steel Washer (x2)
11	-	M12 x 70 Zinc Plated Hex Bolt (x2)
	<b>MT30050</b>	<b>Elcometer GV Service Kit 3 (contains the items listed below)</b>
3	-	Elcometer GV Indicator Label
13	-	O-Ring 3mm Cord x 44.5 ID
15	-	M6 Flat Nylon Washer
17	-	M12 Steel Spring Washer
18	-	M6 x 25 Stainless Steel Hex Socket Cap Screw

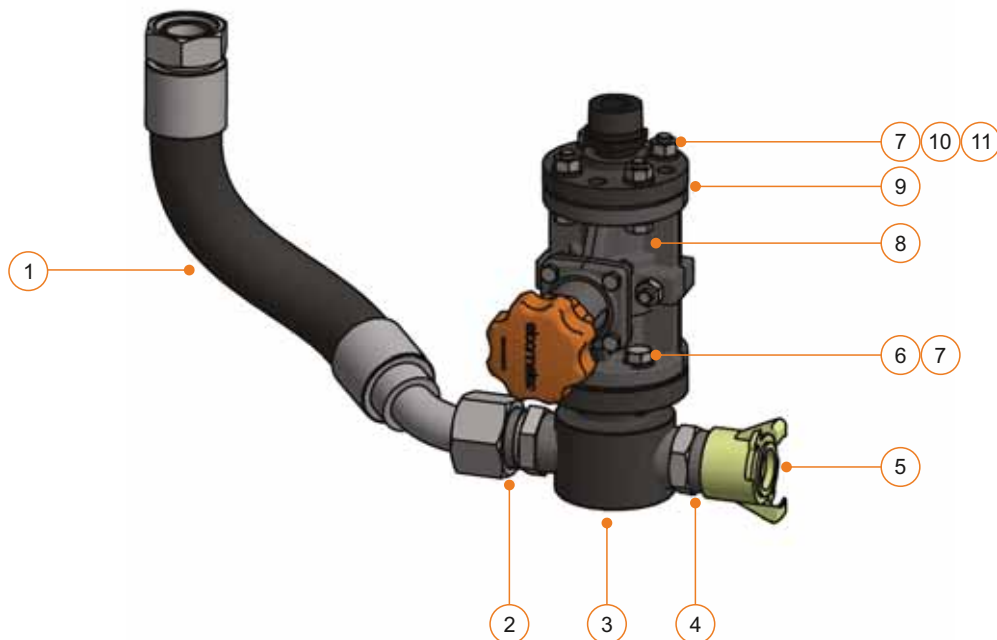
## 6 ELCOMETER GV: DRAWINGS & PARTS LIST (continued)

Part Number	Description
-	Elcometer General Valve (GV) Pusher Line Full Assembly for
MT30066-1N	Elcometer 1440 Abrasive Blast Machines
MT30066-2N	Elcometer 1460 Abrasive Blast Machines
MT30066-3N	Elcometer 20100 Abrasive Blast Machines
MT30066-4N	Elcometer 24200 Abrasive Blast Machines
MT30066-5N	Elcometer 24285 Abrasive Blast Machines

All supplied complete with Pusher Line, Mixer T, Elcometer General Valve (GV), Pot Flange, Pot Coupling and Airline Assembly

### Technical Specification

Operating Temperature	32°F to 140°F (0°C to 60°C)
Maximum Working Pressure	217psi (15bar)



## 6 ELCOMETER GV: DRAWINGS & PARTS LIST (continued)

### ELCOMETER GV PUSHER LINE SPARE PARTS

Item	Part Number	Description
1	-	Elcometer GV 1½" Pusher Line Assembly (15bar / 217psi) complete with Swaged Hose for
	MT28609-1N	Elcometer 1440 Abrasive Blast Machines
	MT28609-3N	Elcometer 1460 Abrasive Blast Machines
	MT28609-5N	Elcometer 20100 Abrasive Blast Machines
	MT28609-6N	Elcometer 24200 & 24285 Abrasive Blast Machines
2	MT29710N	1½" NPT Male x 7/8" Male Adaptor
3	MT28553N	1½" Mixer T
4	MT29014N	1½" Forged Hex Nipple 3000lb
5	MT30002N	1½" Pot Claw Coupling
8	GV-N	Elcometer General Valve (GV) -NPT Thread
9	MT28552N	1½" to 1" Reducing Nipple Flange Assembly

### ELCOMETER GV PUSHER LINE SERVICE KITS

Item	Part Number	Description
-	<b>MT30048</b>	<b>Elcometer GV Service Kit 5 (contains the items listed below)</b>
6	-	M12 x 40 Zinc Plated Hex Bolt (x4)
7	-	M12 Zinc Plated Steel Washer (x12)
10	-	M12 x 50 Zinc Plated Hex Bolt (x4)
11	-	M12 Zinc Plated Steel Nut (x4)

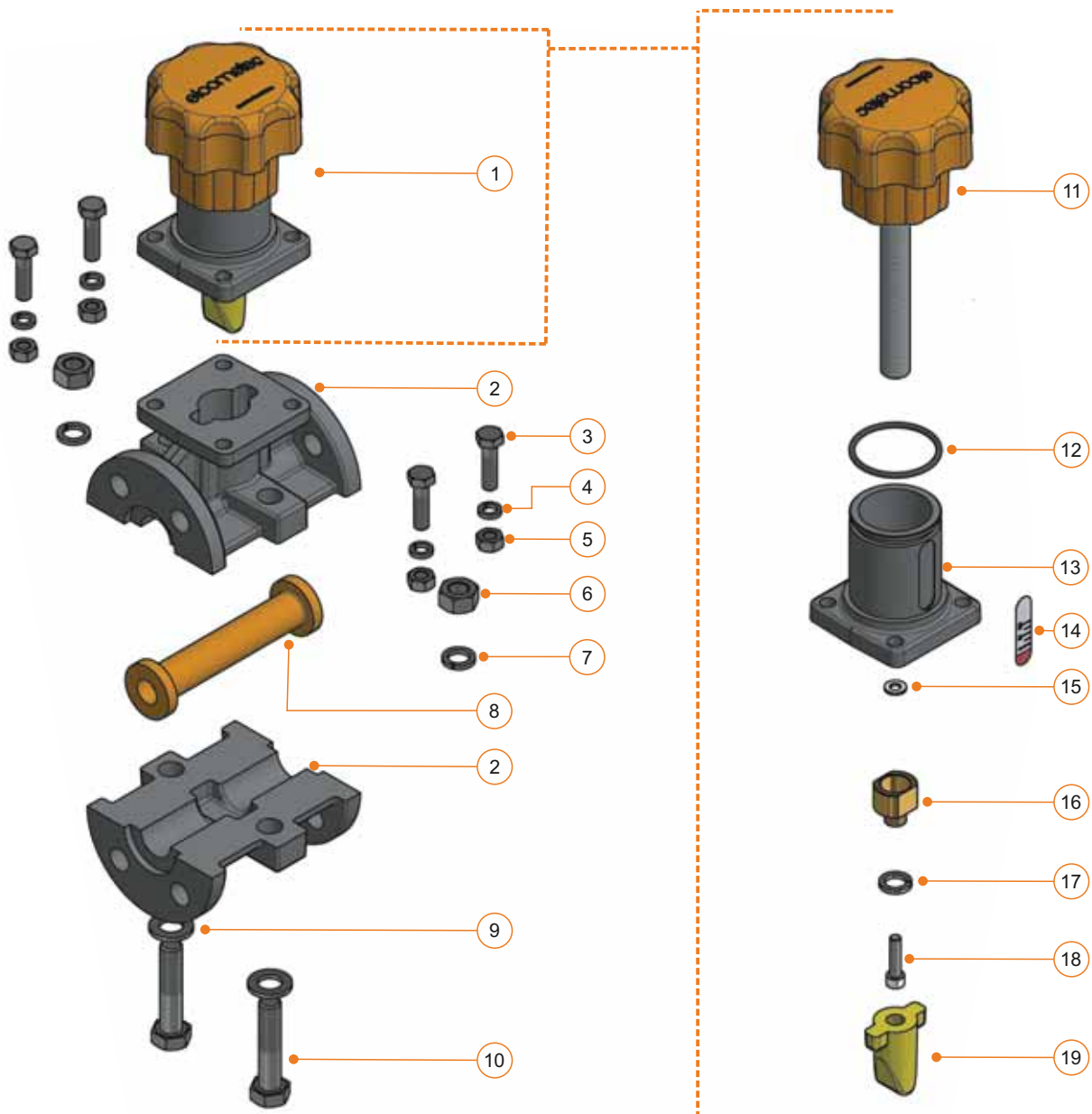
## 7 ELCOMETER MGV: DRAWINGS & PARTS LIST

Part Number	Description
MGV-N	Elcometer Mini General Valve (MGV) - NPT Thread



### Technical Specification

Operating Temperature	32°F to 140°F (0°C to 60°C)
Maximum Working Pressure	217psi (15bar)
Compatible with Models	1020



## 7 ELCOMETER MGV: DRAWINGS & PARTS LIST (continued)

### ELCOMETER MGV SPARE PARTS

Item	Part Number	Description
1	MT28541	Elcometer MGV Stem Full Assembly
2	MT30003	Elcometer MGV Housing Body
8	MGV-LINER1	elcoTOUGH™ Rubber Valve Liner for ½" Mini General Valve
	MGV-LINER5	elcoTOUGH™ Rubber Valve Liner for ½" Mini General Valve (x5)
	MGV-LINER20	elcoTOUGH™ Rubber Valve Liner for ½" Mini General Valve (x20)
11	MT30167	Elcometer MGV Handwheel and Shaft
13	MT30076	Elcometer MGV Shaft Housing
16	MT30077	Valve Nut
19	MT30005	Elcometer MGV Plunger

### ELCOMETER MGV SERVICE KITS

Item	Part Number	Description
-	<b>MT30049</b>	<b>Elcometer MGV Service Kit 1 (contains the items listed below)</b>
3	-	M8 x 30 Zinc Plated Hex Head Bolt (x4)
4	-	M8 Steel Spring Washer (x4)
5	-	M8 Zinc Plated Steel Nut (x4)
-	<b>MT30046</b>	<b>Elcometer MGV Service Kit 2 (contains the items listed below)</b>
6	-	M12 Zinc Plated Steel Nut (x2)
7	-	M12 Steel Spring Washer (x2)
9	-	M12 Zinc Plated Steel Washer (x2)
10	-	M12 x 50 Zinc Plated Hex Bolt (x2)
	<b>MT30051</b>	<b>Elcometer MGV Service Kit 3 (contains the items listed below)</b>
12	-	O-Ring 3mm Cord x 44.5 ID
14	-	Elcometer MGV Indicator Label
15	-	M6 Flat Nylon Washer
17	-	M12 Steel Spring Washer
18	-	M6 x 25 Stainless Steel Hex Socket Cap Screw

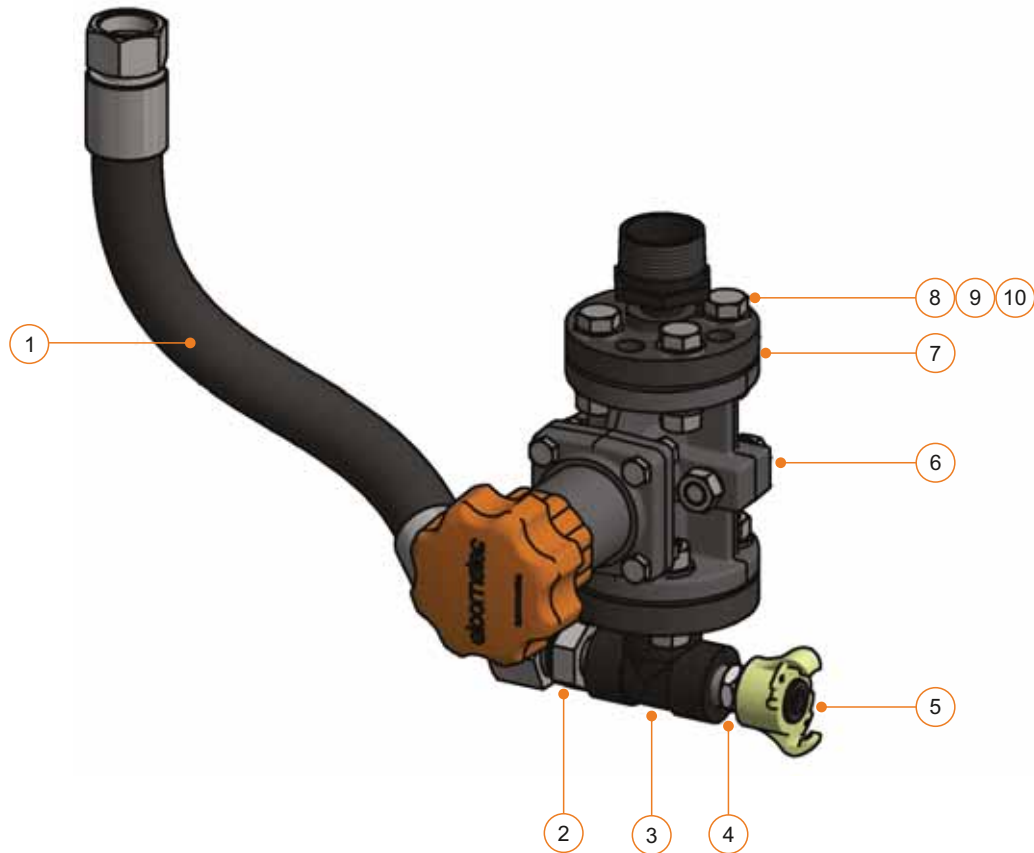
## 7 ELCOMETER MGV: DRAWINGS & PARTS LIST (continued)

Part Number	Description
MT30067N	Elcometer Mini General Valve (MGV) Pusher Line Full Assembly for Elcometer 1020 Abrasive Blast Machines

Supplied complete with Pusher Line, Mixer T, Elcometer Mini General Valve (MGV), Pot Flange, Pot Coupling and Airline Assembly

### Technical Specification

Operating Temperature	32°F to 140°F (0°C to 60°C)
Maximum Working Pressure	217psi (15bar)



## 7 ELCOMETER MGVS: DRAWINGS & PARTS LIST (continued)

### ELCOMETER MGVS PUSHER LINE SPARE PARTS

Item	Part Number	Description
1	MT28608-1N	Elcometer MGVS ¾" Pusher Line Assembly (15bar / 217psi) complete with Swaged Hose for Elcometer 1020 Abrasive Blast Machines
2	MT28540N	¾" JIC x ½" NPT Adaptor
3	MT29246N	½" Flanged Equal T Assembly
4	MT29224N	½" Forged Hex Nipple 3000lb
5	MT30090N	½" Pot Claw Coupling
6	MGV-N	Elcometer Mini General Valve (MGV) - NPT Thread
7	MT28536N	1¼" to ½" Reducing Nipple Flange Assembly

### ELCOMETER MGVS PUSHER LINE SERVICE KITS

Item	Part Number	Description
-	<b>MT30052</b>	<b>Elcometer MGVS Service Kit 4 (contains the items listed below)</b>
8	-	M12 Zinc Plated Steel Washer (x16)
9	-	M12 x 45 Zinc Plated Hex Bolt (x8)
10	-	M12 Zinc Plated Steel Nut (x8)



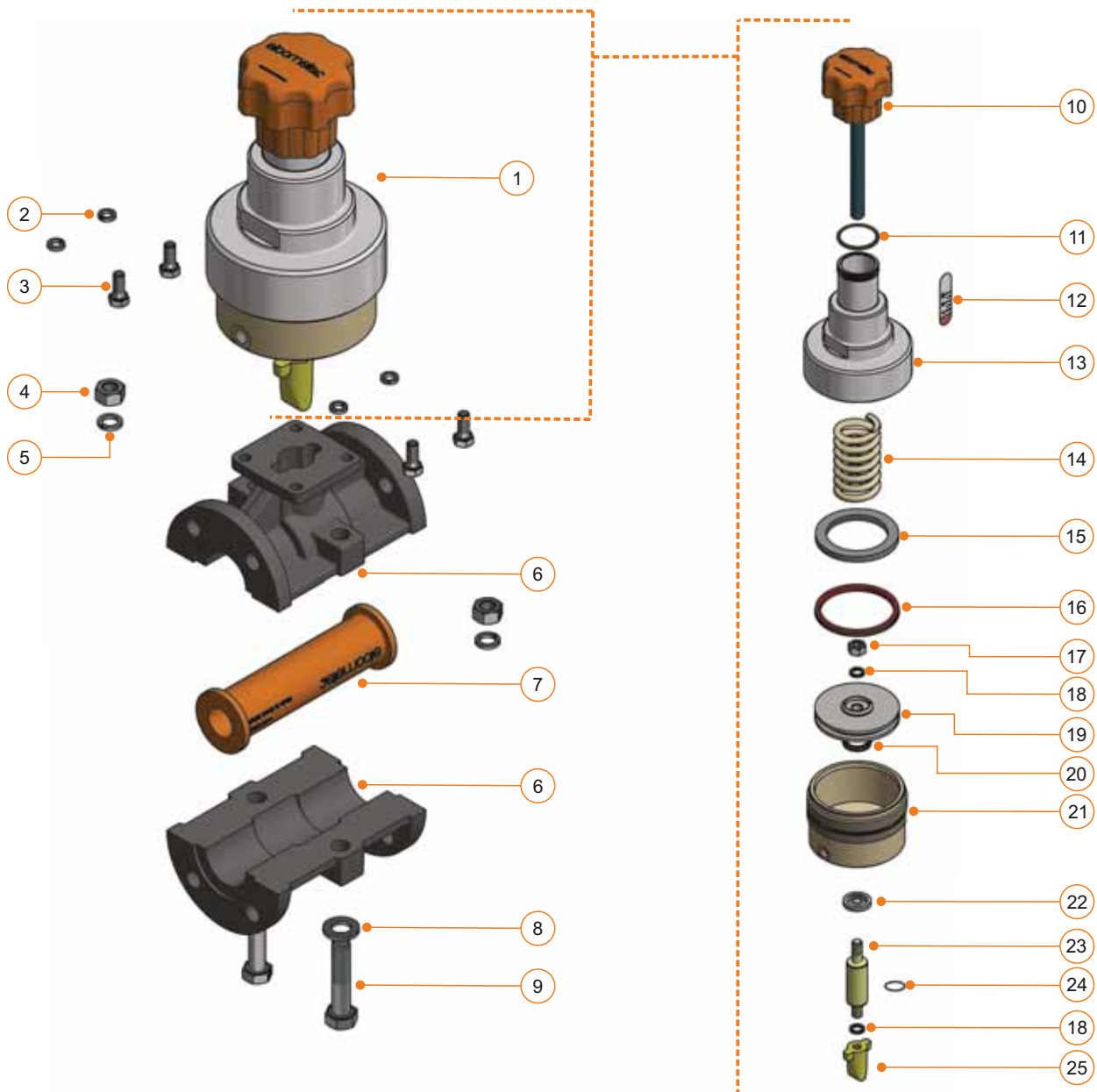
## 8 ELCOMETER AGV: DRAWINGS & PARTS LIST

Part Number	Description
AGV-N	Elcometer Automatic General Valve (AGV) - NPT Thread



### Technical Specification

Operating Temperature	32°F to 140°F (0°C to 60°C)
Maximum Working Pressure	217psi (15bar)
Compatible with Models	1440, 1460, 20100, 24200, 24285 20100H, 24200H, 24285H



## 8 ELCOMETER AGV: DRAWINGS & PARTS LIST (continued)

### ELCOMETER AGV SPARE PARTS

Item	Part Number	Description
1	GVAGV-KITN	Elcometer AGV Stem Full Assembly <i>(Can also be used to convert an Elcometer GV to an AGV)</i>
6	MT29993	Elcometer AGV Housing Body
7	GV-LINER1	elcoTOUGH™ Rubber Valve Liner for 1" Automatic General Valve
	GV-LINER5	elcoTOUGH™ Rubber Valve Liner for 1" Automatic General Valve (x5)
	GV-LINER20	elcoTOUGH™ Rubber Valve Liner for 1" Automatic General Valve (x20)
10	MT29994	Elcometer AGV Handwheel and Shaft
13	MT29995	Elcometer AGV Actuator Spring Housing
14	MT29996	Elcometer AGV Actuator Spring
19	MT29997	Elcometer AGV Actuator Piston
21	MT29998	Elcometer AGV Actuator Cylinder
23	MT29999	Elcometer AGV Plunger Shaft
25	MT30001	Elcometer AGV Plunger

### ELCOMETER AGV SERVICE KITS

Item	Part Number	Description
-	<b>MT30044</b>	<b>Elcometer AGV Service Kit 1 (contains the items listed below)</b>
2	-	M8 Steel Spring Washer (x4)
3	-	M8 x 20 Zinc Plated Hex Head Bolt (x4)
-	<b>MT30045</b>	<b>Elcometer AGV Service Kit 2 (contains the items listed below)</b>
4	-	M12 Zinc Plated Steel Nut (x2)
5	-	M12 Steel Spring Washer (x2)
8	-	M12 Zinc Plated Steel Washer (x2)
9	-	M12 x 70 Zinc Plated Hex Bolt (x2)
	<b>MT30047</b>	<b>Elcometer AGV Service Kit 3 (contains the items listed below)</b>
17	-	M12 Zinc Plated Steel Nut
18	-	M12 Steel Spring Washer (x2)
	<b>MT29598</b>	<b>Elcometer AGV Service Kit 4 (contains the items listed below)</b>
11	-	O-Ring 3mm Cord x 44.5 ID
12	-	Elcometer AGV Indicator Label
15	-	Actuator Stop Ring
16	-	Piston Seal; OD: 101.6mm, ID: 88.9mm
20	-	Piston Seal; OD: 35mm, ID: 25mm
22	-	Rod Wiper Seal; 25mm Shaft
24	-	O-Ring 2.4mm Cord x 11.6 ID

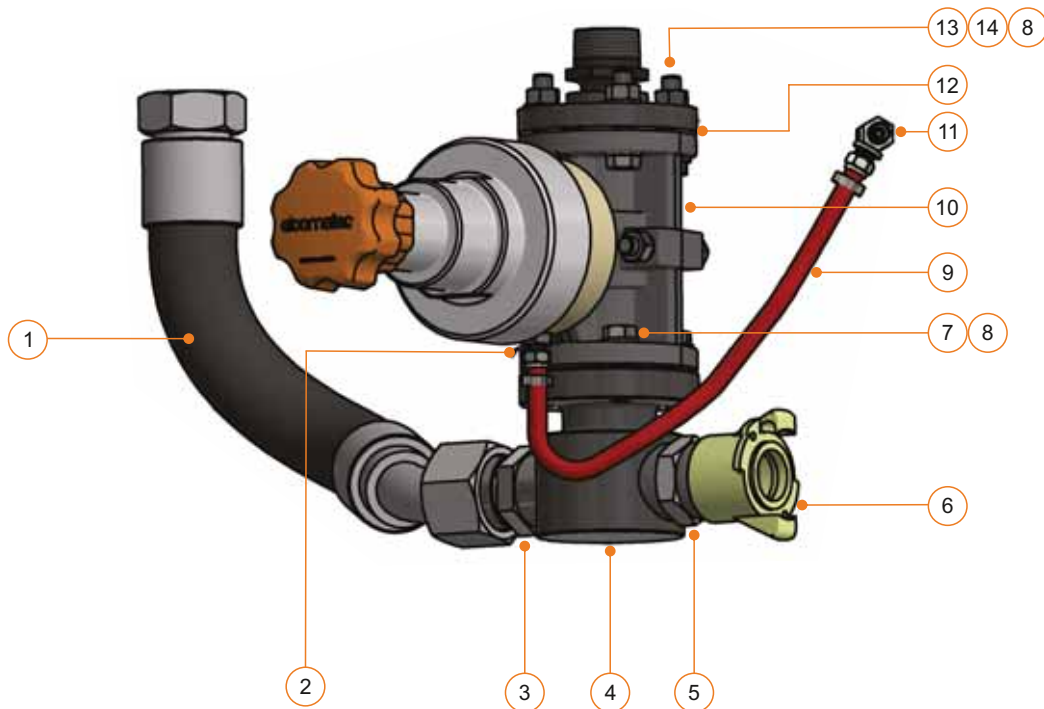
## 8 ELCOMETER AGV: DRAWINGS & PARTS LIST (continued)

Part Number	Description
-	Elcometer Automatic General Valve (AGV) Pusher Line Full Assembly for
MT30065-1N	Elcometer 1440 Abrasive Blast Machines
MT30065-2N	Elcometer 1460 Abrasive Blast Machines
MT30065-3N	Elcometer 20100 Abrasive Blast Machines
MT30065-4N	Elcometer 24200 Abrasive Blast Machines
MT30065-5N	Elcometer 24285 Abrasive Blast Machines

All supplied complete with Pusher Line, Mixer T, Elcometer Automatic General Valve (AGV), Pot Flange, Pot Coupling and Airline Assembly

### Technical Specification

Operating Temperature	32°F to 140°F (0°C to 60°C)
Maximum Working Pressure	217psi (15bar)



## 8 ELCOMETER AGV: DRAWINGS & PARTS LIST (continued)

### ELCOMETER AGV PUSHER LINE SPARE PARTS

Item	Part Number	Description
1	-	Elcometer AGV 1½" Pusher Line Assembly (15bar / 217psi) complete with Swaged Hose for
	MT28609-1N	Elcometer 1440 Abrasive Blast Machines
	MT28609-3N	Elcometer 1460 Abrasive Blast Machines
	MT28609-5N	Elcometer 20100 Abrasive Blast Machines
	MT28609-6N	Elcometer 24200 & 24285 Abrasive Blast Machines
2	MT30086N	¼" JIC Adaptor
3	MT29710N	1½" NPT Male x 7/8" JIC Male Adaptor
4	MT28553N	1½" Mixer T
5	MT29014N	1½" Forged Hex Nipple 3000lb
6	MT30002N	1½" Pot Claw Coupling
	MT29580-2N	Airline Assembly for Elcometer 1440 Abrasive Blast Machines
	MT29580-3N	Airline Assembly for Elcometer 1460 Abrasive Blast Machines
9	MT29580-4N	Airline Assembly for Elcometer 20100 Abrasive Blast Machines
	MT29580-5N	Airline Assembly for Elcometer 24200 Abrasive Blast Machines
	MT29580-6N	Airline Assembly for Elcometer 24285 Abrasive Blast Machines
10	AGV-N	Elcometer Automatic General Valve (AGV) - NPT Thread
11	MT30089N	¼" Male / Female T JIC Adaptor
12	MT28552N	1½" to 1" Reducing Nipple Flange Assembly

### ELCOMETER AGV PUSHER LINE SERVICE KITS

Item	Part Number	Description
-	<b>MT30048</b>	<b>Elcometer AGV Service Kit 5 (contains the items listed below)</b>
7	-	M12 x 40 Zinc Plated Hex Bolt (x4)
8	-	M12 Zinc Plated Steel Washer (x12)
13	-	M12 x 50 Zinc Plated Hex Bolt (x4)
14	-	M12 Zinc Plated Steel Nut (x4)

