

# ENCHLOR E2500 METERING PUMPS SELECTION GUIDE

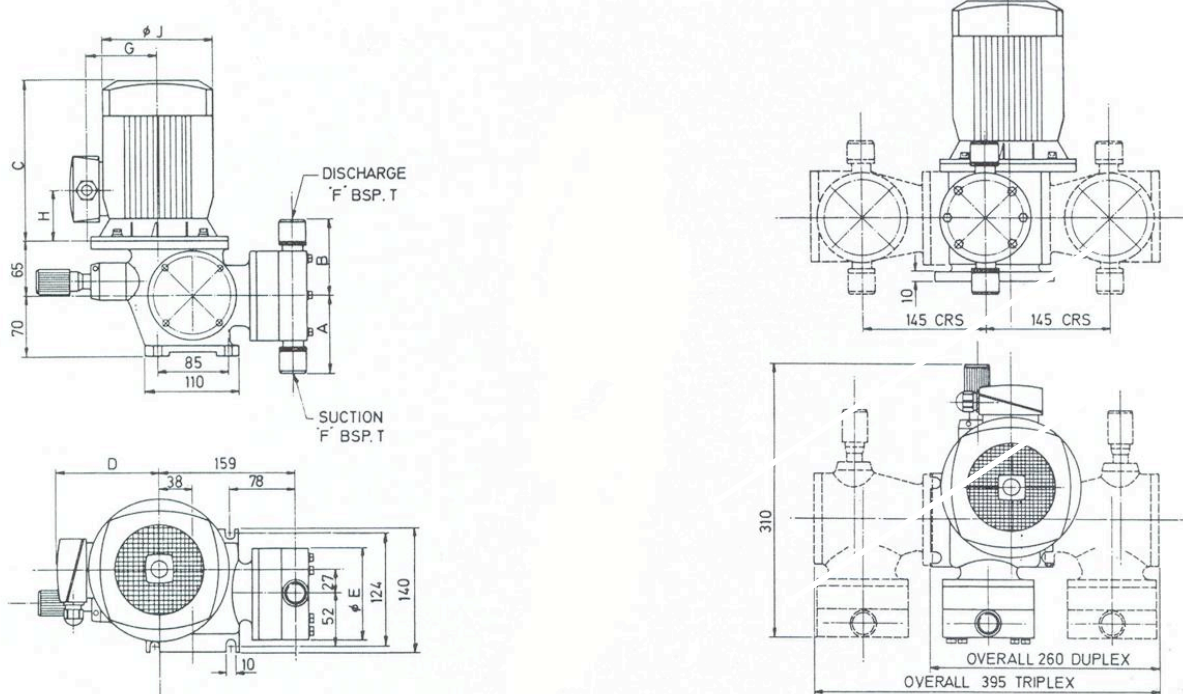
## CAPACITY/PRESSURE RATINGS –PER HEAD GPD (Litres per Hour)

LIQUID END CODE	PUMP SPEED (strokes / minute)				PRESSURE RATING kPa	
	55	86	110	134	316SS / PVC	
-001	10(1.6)	15(2.4)	19(3)	24(4)	2000	1400
-002	48(7.7)	76(12)	97(15)	118(18.7)	2000	1400
-005	91(14.4)	144(22)	182(29)	228(36)	2000	1400
-015	281(44.4)	441(69)	563(89)	684(108)	1250	
-025	502(79.2)	786(124)	1001(158)	1224(193)	850	
-050	989(156)	1547(244)	1978(312)	2409(380)	700	

### LABORATORY ACCURACY INDUSTRIAL DURABILITY

The 2500 offers accurate, competitively priced chemical metering for all applications.

- ◆ Multiplexed designs with choice of liquid end sizes and material of construction.
- ◆ Available with or without motor.
- ◆ Motor mount flange to suit standard 56c frame or D71 metric motors.
- ◆ Variable or fixed motor speeds.
- ◆ Manual / Auto capacity control-stroke length and speed.
- ◆ Precision micrometer for manual capacity adjustment.
- ◆ No maintenance, oil filled mechanism.
- ◆ Self-cleaning valve operation.
- ◆ Screw in valves.
- ◆ Precise and positive volumetric displacement.
- ◆ Heavy duty mechanical actuation with **5 year warranty on the diaphragm.**



#### LIQUID END DIMENSIONS

CODE	A	B	φE	'F'	BSPT F
001-005	81	81	90	10	(3/8")
-015	87	87	105	15	(1/2")
-025	87	87	114	15	(1/2")
-050	119	119	149	15	(1/2")

#### DIMENSIONS

PHASE	C	D	G	H	φJ
1φ	285	114	87	158	145
3φ	183	102	80	60	140
<b>MAX WEIGHT KG. (with motor avg.)</b>					
	Simplex 24 kg	Duplex 32 kg	Triplex 40 kg		

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# METERING PUMPS 2500 SERIES

## 1. **SAFETY**

### 1.1 **General**

Please read and familiarise yourself with all sections of this and other equipment manuals before proceeding with installation.

- Observe all standard precautions which apply to moving machinery.
- Observe all standard precautions which apply to electrical equipment, drives and controls.
- Pay particular attention to special safety 'cautions' and 'notes' in this manual.

### 1.2 **Mechanical Precautions**

- Prior to undertaking any mechanical maintenance repair, installation, etc. **SWITCH OFF**, and disconnect power before proceeding.
- Personnel must wear the appropriate protective safety attire and remove loose clothing, jewellery etc.

### 1.3 **Electrical Precautions**

- Before undertaking work on the electrical controls or drives, disconnect power and place a notice to advise others of the type of work in process.
- Ensure all necessary grounds are in place and solid.
- Do not disconnect or disable ground connections

<b>CAUTION</b> Follow all electrical regulations where required by electrical engineering trades.
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## 2. **INTRODUCTION**

Enchlor metering pumps are designed and manufactured for long, low maintenance service life and when properly applied, will give many years of consistent accurate metering and trouble free operation.

The following instructions should be read and followed to correctly install and operate the pump and ensure optimum pump life and performance.

Sectional arrangement drawings and Part Lists are enclosed at the end of this manual.

## 3. **INSTALLATION**

3.1 It is desirable to locate the pump as close as possible to the supply source (eg tank) in order to minimise friction losses in the suction line.

3.2 The pump should be located with sufficient free space provided around the pump to allow access for:

- Adjustment of the manual capacity adjustment device;
- To facilitate ease of routine and breakdown maintenance.

3.3 The mounting surface should be even and level. The pump base (mounting plate) is provided with four (4) holes for mounting bolts.

## 4. **PIPING**

### 4.1 **General**

4.1.1 The pump suction valve is located at the bottom of the pump head and the discharge valve on top. The pump cannot operate without these valves and for correct operation, valves must be vertical.

4.1.2 Discharge pressure should be more than 20 kPa greater than suction pressure to prevent over feeding or syphoning and to maintain metering accuracy.

**NOTE: When the difference is less than 20 kPa, a back pressure valve and pulsation dampener should be installed in the discharge line. The pulsation dampener should be located between pump and valve, as close to the pump as possible.**

4.1.3 A characteristic of reciprocating pump performance is pulsating flow. Piping should be sized for flow rates at least 3.5 times greater than maximum capacity of pumps.

**NOTE: Small diameter piping will produce unpredictable flow rates and system pressures.**



- 4.1.4 Piping should be as short and straight as possible and arranged to avoid loops or pockets where gas may accumulate.
- 4.1.5 All piping should be separately supported close to the pump to avoid imposing pipe loads on the pump. When handling high or low temperature liquids, measures should be taken to prevent distortion of piping imposing loads on the pump.
- 4.1.6 All pipe work should be flushed clean of any solids that may be present in the pipe work (i.e. weld slag, dirt following construction or repair) before final connection to the pump and start-up.
- 4.1.7 Make provision in discharge piping where necessary to facilitate initial priming of pumps against reduced pressure.
- 4.1.8 Capacity adjustment range for accuracy of metering, avoid over sizing of metering pumps. Flow rates of less than 10% of pump maximum capacity may produce unacceptable accuracy.
- 4.1.9 Where lengthy suction and discharge pipelines are involved or there is limitation on size, install pulsation dampeners close to the pump to:
  - Avoid cavitation – maintain metering accuracy.
  - Reduce amplitude of pulsations
- 4.1.10 Ensure that the drain line from any pressure relief valve in the system is:
  - Suitably sized to ensure correct operation of the relief valve.
  - Returns to the suction tank.
  - Is fitted with a sight glass for visual indication.

## 4.2 **Suction**

- 4.2.1 Piping must be air tight.
- 4.2.2 For ease of maintenance an isolating valve should be located near the pump inlet.
- 4.2.3 Solids should be prevented from entering low volume pumps or pumps used for high accuracy metering. A strainer of 150-200 mesh is recommended and should be adequately sized to prevent restriction of flow.
- 4.2.4 Suction pipe entrance should be at least 75 mm above the bottom of solution tank to allow settlement of larger solids in the tank.
- 4.2.5 Make provision in suction piping where necessary to facilitate automatic venting of any gases likely to accumulate.

### 4.3 **Discharge**

- 4.3.1 Should it be necessary to install an isolating valve in the discharge line, a relief valve must be installed between the pump and isolating valve.
- 4.3.2 The 2500 Metering Pump, being a positive displacement pump, will be damaged if operated against a closed valve.

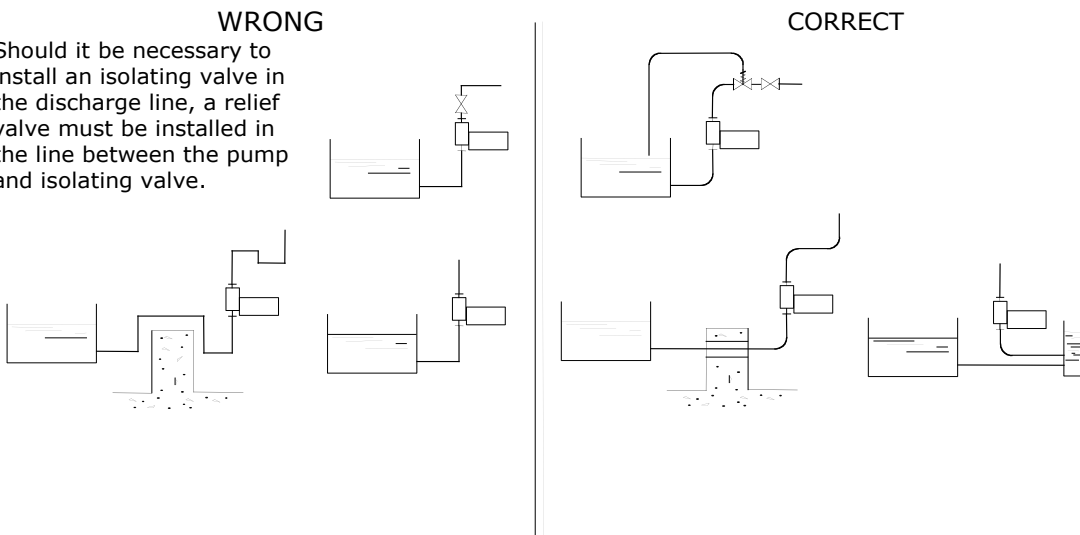
<b><u>NOTE:</u></b>	The relief valve should be set to operate at the maximum rated pump discharge pressure or maximum system operating pressure, whichever is lower.
<b><u>CAUTION:</u></b>	<b>When pumping hazardous liquids the relief valve discharge should be piped back to the supply source.</b>
<b><u>NOTE:</u></b>	Where relief valve is likely to operate frequently, to ensure correct operation and maximise valve life, a pulsation dampener should be installed between valve and pump

- 4.3.3 A pressure gauge with gauge protector should be installed to check if the pump is not operating at too great a discharge pressure. The gauge should be provided with a petcock valve for isolation from the system when not required.
- 4.3.4 When pumping into a high pressure system, a non return valve should be installed as a safety precaution at the injection point.
- 4.3.5 Make provision in pipe work to facilitate priming against reduced pressure.

4.4 **Piping Arrangement**

**WRONG**

Should it be necessary to install an isolating valve in the discharge line, a relief valve must be installed in the line between the pump and isolating valve.

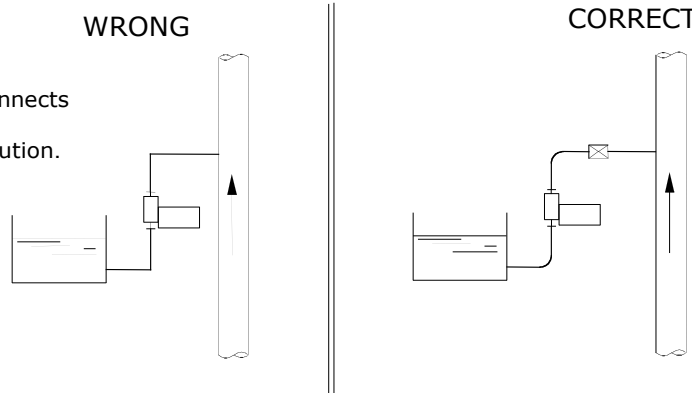


Metering pumps are positive displacement pumps and produce pulsating flow. Consequently there is considerable line pressure loss and suction piping should be sized to ensure adequate NPSHA. If piping extends for a considerable distance a suitable break tank or pulsation dampener should be installed near the pump.

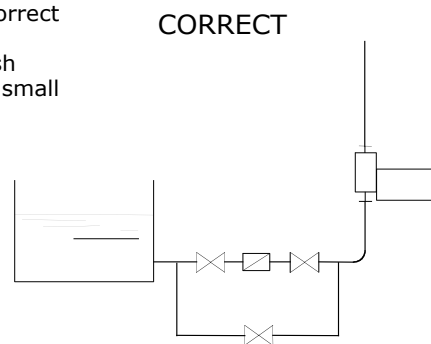
Avoid pockets or loops in piping where gas may accumulate.

**WRONG**

Where the pump discharge line connects with a high pressure line, install a non return valve as a safety precaution.



The presence of solids in the pumped liquid can cause incorrect pump valve operation and affect metering accuracy. If solids are present install a strainer with 150 to 200 mesh and large mesh surface in order to keep pressure drop as small as possible and ensure that strainer does not become quickly clogged.



## **5. OPERATION**

### **5.1 Before Starting**

- 5.1.1 Ensure the pump will be operated within its specification.
- 5.1.2 Check gearbox oil level. Prior to leaving factory, each pump is filled to the correct level with the recommended grade of oil (see maintenance section).
- 5.1.3 Check direction of rotation. Correct direction is anti-clockwise when viewing pump from top of motor.
- 5.1.4 Ensure system control of isolating valves in discharge line are open.

### **5.2 After Starting**

- 5.2.1 Pump will normally prime automatically. However, it may be necessary to run the pump at maximum capacity to clear air. If this is unsuccessful install a return line from discharge pipe to supply tank with valve to facilitate priming at reduced pressure and/or air release.

**CAUTION: If pumped liquid is hazardous do not disconnect discharge pipe work.**

- 5.2.2 Check that pump is operating correctly against discharge pressure.
- 5.2.3 Ensure that any problems are noted and appropriate corrective or preventative action is taken.

## **6. CAPACITY ADJUSTMENT**

6.1 Standard manual capacity adjustment is by means of a micrometer. For multiplex pumps, each pump head is individually controlled by a micrometer located behind the respective pump head.

6.2 Adjustment should be made whilst the pump is running. To adjust whilst stopped will cause damage to the pump mechanism.

### **6.3 Capacity Control – Zero Adjustment**

Individual capacity control is provided for each pump head by means of a micrometer located directly behind the respective pump head.

Should it become necessary to reset the mechanism, the procedure is as per the following steps:

- 6.3.1 Rotate micrometer barrel clockwise towards zero setting until it stops.
- 6.3.2 Adjust the thumbscrew located on the side of the micrometer assembly until it locks the micrometer in place.
- 6.3.3 Hold the knurled micrometer barrel steady with multigrips and undo the grub screws located at the end of the micrometer barrel.
- 6.3.4 Releasing the multigrips, wind the micrometer barrel until the graduations on both the micrometer barrel and anvil are set at zero.
- 6.3.5 Hold the micrometer barrel with the multigrips at the zero setting and retighten the grub screw located at the end of the barrel.
- 6.3.6 Loosen the thumbscrew located on the side of the micrometer assembly.
- 6.3.7 Reset the micrometer adjustment to the desired capacity required and lock the thumbscrew in place.

## 7. **MAINTENANCE**

### 7.1 **Pre Maintenance Cleaning**

- Flush the pump liquid head internals to remove all chemical residue.
- Clean the pumps exterior to ensure chemical free surface.
- Check that appropriate chemical handling and cleaning standards have been met.

**CAUTION: Enchlor IS UNABLE TO ACCEPT ANY METERING PUMP RETURNED FOR MAINTENANCE THAT HAS NOT BEEN SUITABLY CLEANED.**

It is an Enchlor Quality Assurance policy that all equipment returned for repair or service be supplied with a completed copy of the 'Equipment Decontamination Advice' form, as shown on page 37 of this manual.

### 7.2 **Lubrication**

- 7.2.1 Change oil after 750 hours of operation and at 4,500 hours intervals thereafter.

The following are recommended grades:

SHELL	:	OMALA 320
BP	:	GR-XP-320 ISO
MOBIL	:	MOBIL GEAR 632
CASTROL	:	ALPHA SP 320

- 7.2.2 Fill oil until oil starts to overflow from the filler port.  
Oil volume : 450 ml

### 7.3 **Suction & Discharge Valves**

- 7.3.1 During routine maintenance, valves should be dismantled and checked. Replace worn ball checks and valve seats. When pumping clean liquids of moderate viscosity, valves will give many years of trouble free service. However, valve life can be reduced in applications where discharge pressure is high, liquid viscosity low or solids are present.

**NOTE: Should it be necessary to service the valves, cleanliness is essential and care should be taken to avoid damaging components. Refer to valve drawing at end of manual prior to dismantling.**

- 7.3.2 When reassembling, ensure that all O-Rings, ball checks and ball stops are in the correct position. Failure to fit ball stops can result in closed head situation and severe pump damage.

## 7.4 Diaphragm

- 7.4.1 When fitting a new diaphragm, the diaphragm bolt should be tightened firmly with the correct spanner available from Enchlor.
- 7.4.2 Before tightening the diaphragm bolt, capacity adjustment should be set at 0% eg stroke length should be in the extreme forward position.
- 7.4.3 Place diaphragm in position ensuring holes line up and screw in two (2) solution head bolts (opposing each other) through diaphragm bolt holes into solution head adaptor. This is to ensure that the diaphragm does not rotate when tightening the diaphragm bolt.
- 7.4.4 Having tightened diaphragm bolt, remove solution head bolts and fit solution head.

**NOTE: Excessive tightening of solution head bolts should be avoided as this will result in early diaphragm failure.**

- 7.4.5 After the new diaphragm has been fitted, calibration should be checked and monitored until diaphragm has stabilised.

All major mechanical repairs should be undertaken by Enchlor's specialist servicing workshop in Silverdale,PA. In most cases a pump can be repaired and despatched in one day.

## 8. TROUBLESHOOTING

<b>Trouble</b>	<b>Cause</b>	<b>Corrections</b>
(A) Pump does not start.	Blown electrical. Fuse.	Check cause and change to suitable capacity fuse
	Electrical overload relay trips.	Change relay capacity to correct value.
	Electrical wiring breakdown or defective contact.	Change or reconnect.
	Low voltage. Difference in supply voltage and rated voltage of motor.	Find cause and correct.
	Defective motor.	Check and replace.
	Excessive pressure in discharge line.	Reduce pressure.
	Valve in discharge line closed.	Open valve
	Pump discharge valve incorrectly reassembled during maintenance. Ball stop cushion missing	Reassemble correctly.
	Air in liquid end.	Relieve pressure in discharge line.
(B) No Flow	Valve in discharge line closed.	Open valve.
	Pump discharge valve incorrectly reassembled during maintenance. Ball stop cushion missing.	Reassemble correctly.
	Overload relay	Reset the switch after checking the cause and correcting.
(C) Pump does not work after operating normally	Overload relay	Reset the switch after checking the cause and correcting.
	Discharge pipe clogged.	Clear the pipe.
	Valve in discharge line closed.	Open valve.
	Pump discharge valve incorrectly reassembled during maintenance. Ball stop cushion missing.	Reassemble correctly

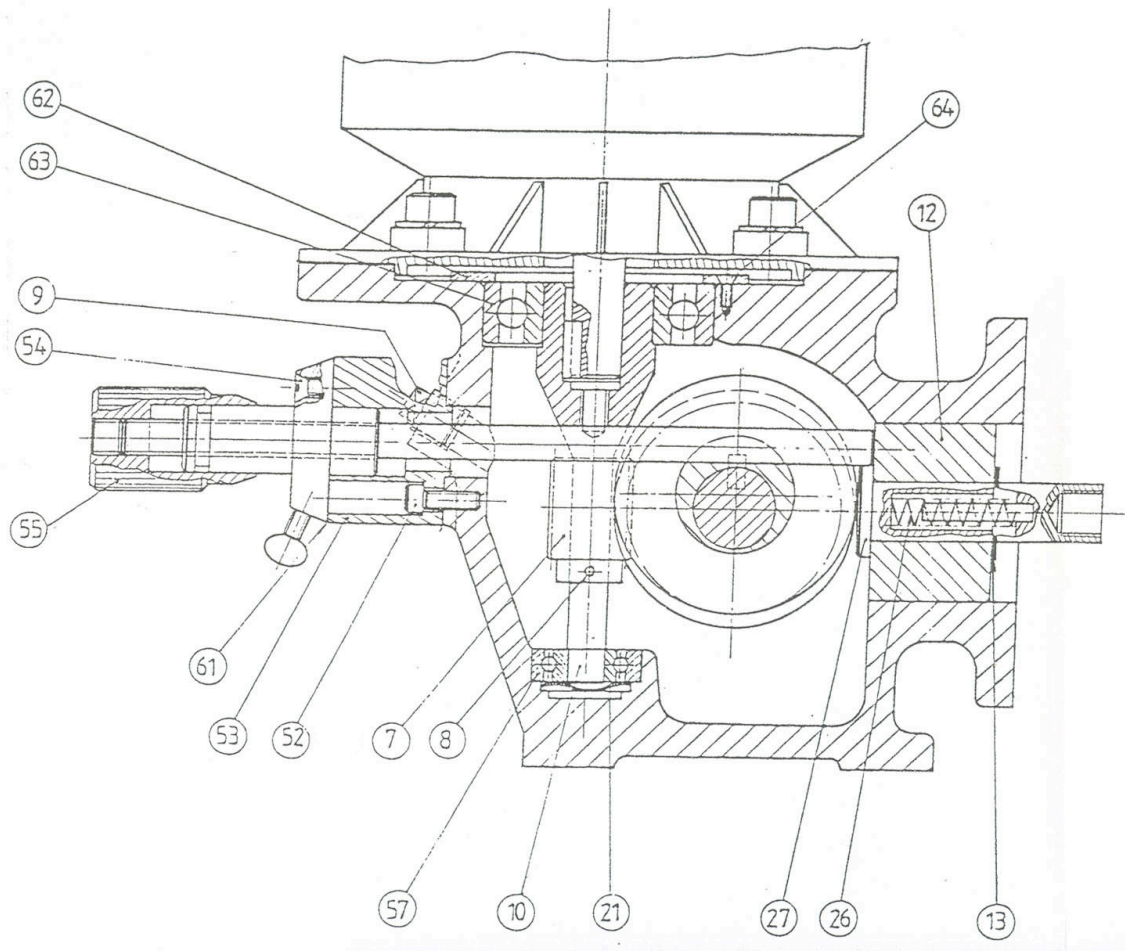


<b>Trouble</b>	<b>Cause</b>	<b>Corrections</b>
(D) Reduced pump flow rate or unstable rate.	Valve clogged.	Clean.
	Worn valve seat.	Replace seat or valve.
	Flow meter incorrect.	Inspect meter, repair or change.
	Leakage from relief valve.	Inspect, repair or change.
	Air leaking into suction piping	Check for leak source and repair.
	Air lock in suction line.	Review suction pipework layout to eradicate air pockets.
	Change in pump rpm	Correct electric power sources, speed control etc.
(E) Reduced pump flow rate. Unstable flow rate. Flow rate does not increase as stroke length is increased. Cavitation noise may be apparent.	Insufficient NPSH available:  (a) Suction pipe diameter too small.  (b) Suction lift too great.	Enlarge suction pipe, or install accumulator in the line close to pump or raise level of tank.  Raise liquid level.
	Viscosity of liquid too high.	1. Heat or lower viscosity by other means. 2. Increase suction pipe diameter. 3. Increase suction pressure.
	Vapour pressure high.	1. Lower liquid temperature at inlet port. 2. Raise liquid level.
	Suction piping and/or valve clogged	Clean
	Suction strainer clogged or too small	Clean or replace with larger unit.

<b>Trouble</b>	<b>Cause</b>	<b>Correction</b>
(F) Excessive pump flow rate. Flow continues after pump has stopped.	Pressure difference across pump less than 20 KPa	Increase pressure difference (ie install back pressure valve).
	Discharge line too long or diameter too small	Reduce length and/or increase diameter. Install accumulator in discharge line.
(G) Liquid leakage from pump adaptor drain	Ruptured diaphragm.	Check/replace diaphragm.
(H) Knocking sound in gearbox	Excessive discharge pressure	Check discharge pressure.
(I) Liquid end noise	Rhythmic noise of pump valves	Normal
	Clogged discharge or suction valve	Clean
(J) Overheating of motor	Improper voltage	Adjust voltage to motor specification.
	Overload	(Refer to Section K).
	Inadequate ventilation	Change motor or relocate
(K) Overload	Improper Oil	Change
	Discharge pressure too high	Lower to permissible pressure
	Erratic noise of pump valves	1. Clean valves. 2. Increase pressure difference (ie install back pressure valve).

## 9. 2500 SERIES METERING PUMP

### 9.1 Drive End (Simplex) – Side Elevation



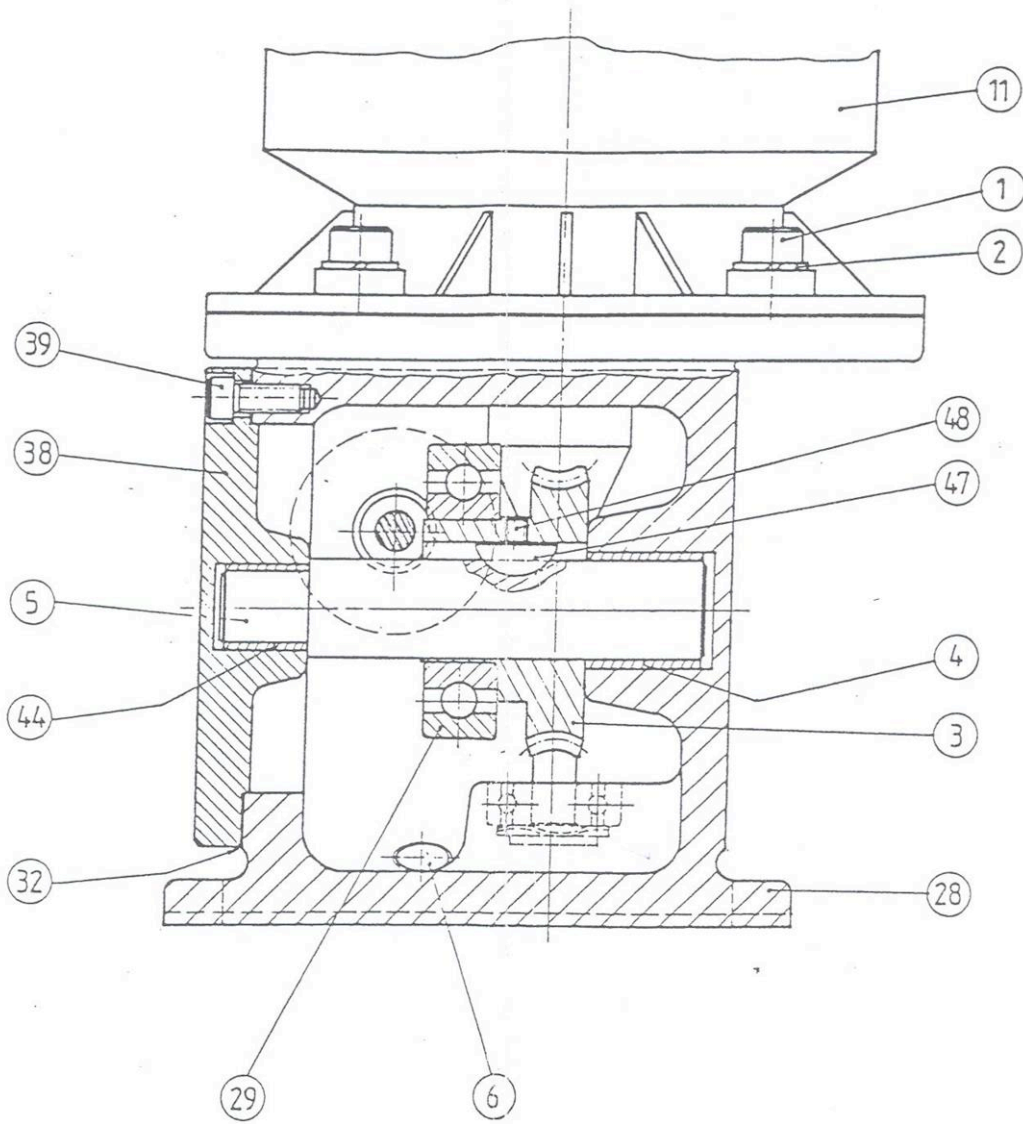
## 9.2 Drive End (Simplex) – Side Elevation - Parts List

ITEM	PART NO	DESCRIPTION	QTY	NOTES
7	E-42	WORM	1	◇
8	10/01/11	PIN (DRIVE MOTOR)	2	
9	08/12/02	OIL FILL PLUG	1	
10	10354	WORM EXTENSION SHAFT	1	□
12	10302	PRIMARY PISTON	1	
13	11/01/21	CIRCLIP (STRIKER SHAFT)	1	
21	09/03/06	WAVE WASHER	1	
26	10311	SPRING RETURN	2	
27	10358	STRIKER SHAFT	1	
52	08/01/64	CAP SCREW (MICROMETER)	1	
53	10368	SPACER (MICROMETER)	1	
54	08/03/06	COUNTERSUNK SCREW	1	
55	KDM	MICROMETER ASSEMBLY	1	⊗
57	06/01/42	BEARING (WORM EXTENSION SHAFT - BOTTOM)	1	
61	8023	GASKET - OUTER (MICROMETER)	1	
62	10361	RETAINING PLATE	1	
63	06/01/43	BEARING (WORM EXTENSION SHAFT - TOP)	1	
64	08/03/20	COUNTERSUNK SCREW	3	

### **Notes:**

- ⊗ State Head Size
- ◇ State Stroking Rate (SPM)
- State Drive Motor Frame Size

9.3 **Drive End (Simplex) – End Elevation**



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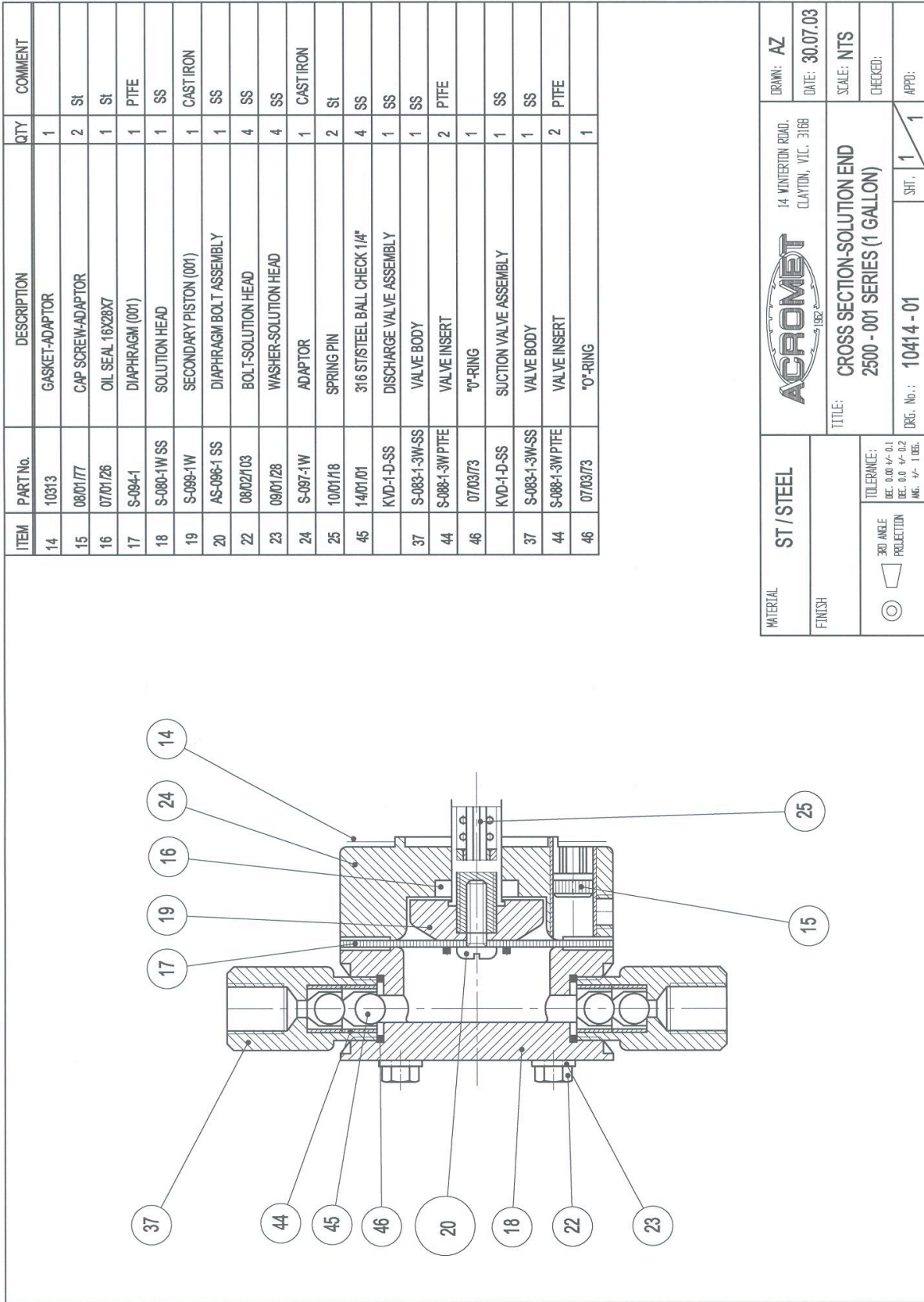
**9.4 Drive End (Simplex) – End Elevation - Parts List**

ITEM	PART NO	DESCRIPTION	QTY	NOTES
1	08/01/74	SCREW (MOTOR)	4	
2	09/02/24	SPRING WASHER (MOTOR)	4	⊗
3	10355	WORM WHEEL	1	◇
4	06/04/07	BUSH (MAIN SHAFT)	1	
5	10325-1	MAIN SHAFT	1	⊗
6	08/12/02	DRAIN PLUG	1	
11	AS SPEC	DRIVE MOTOR	1	
28	10351	PUMP BODY	1	
29	06/01/44	BEARING ECCENTRIC	1	
32	10306	Gasket (END COVER)	1	
38	10362	END COVER	1	
39	08/01/77	SCREW (END COVER)	4	
44	06/04/11	BUSH (END COVER)	1	
47	12/01/09	WOODRUFF KEY	1	
48	08/13/31	GRUB SCREW	1	

**Notes:**

- ⊗ State Head Size
- ◇ State Stroking Rate (SPM)
- State Drive Motor Frame Size

9.5 **Liquid Head Section Drawings**

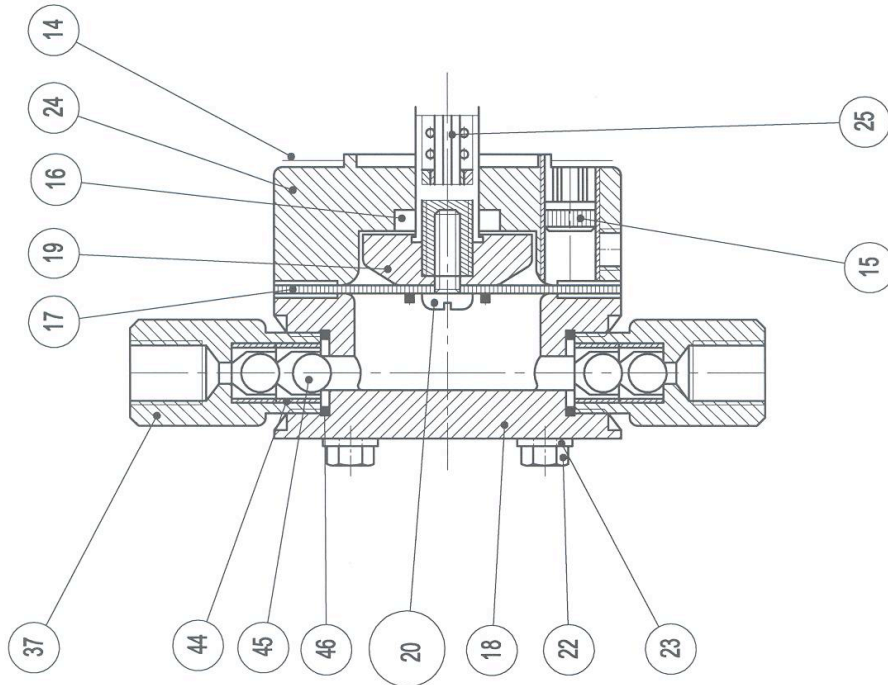


ITEM	PART No.	DESCRIPTION	QTY	COMMENT
14	10313	GASKET-ADAPTOR	1	
15	080177	CAP SCREW-ADAPTOR	2	St
16	070126	OIL SEAL 16X28X7	1	St
17	S-094-1	DIAPHRAGM (001)	1	PTFE
18	S-080-1W-SS	SOLUTION HEAD	1	SS
19	S-099-1W	SECONDARY PISTON (001)	1	CAST IRON
20	AS-086-1 SS	DIAPHRAGM BOLT ASSEMBLY	1	SS
22	08027103	BOLT-SOLUTION HEAD	4	SS
23	090128	WASHER-SOLUTION HEAD	4	SS
24	S-097-1W	ADAPTOR	1	CAST IRON
25	100178	SPRING PIN	2	St
45	140101	316 ST/STEEL BALL CHECK 1/4"	4	SS
37	KVD-1-D-SS	DISCHARGE VALVE ASSEMBLY	1	SS
37	S-083-1-3W-SS	VALVE BODY	1	SS
44	S-088-1-3W-PTFE	VALVE INSERT	2	PTFE
46	070373	O-RING	1	
37	KVD-1-D-SS	SUCTION VALVE ASSEMBLY	1	SS
37	S-083-1-3W-SS	VALVE BODY	1	SS
44	S-088-1-3W-PTFE	VALVE INSERT	2	PTFE
46	070373	O-RING	1	

<b>ST/STEEL</b> MATERIAL FINISH	TOLERANCE: DEC. 0.00 1/4-0.1 DEC. 0.0 1/4-0.2 INC. 1/4-1 DEC.	30° ANGLE PROJECTION	TITLE: <b>CROSS SECTION-SOLUTION END</b> <b>2500 - 001 SERIES (1 GALLON)</b>	DRAWN: <b>AZ</b>
				DATE: <b>30.07.03</b>
DRG. No.: <b>10414-01</b>			SCALE: <b>NTS</b>	CHECKED:
SHIT. <b>1</b>			APPD:	ATN DTC CCO G14



ITEM	PART No.	DESCRIPTION	QTY	COMMENT
14	10313	GASKET-ADAPTOR	1	
15	080177	CAP SCREW-ADAPTOR	2	St
16	070126	OIL SEAL 1/6X28X7	1	St
17	S-094-1	DIAPHRAGM (001)	1	PTFE
18	S-080-1W PVC	SOLUTION HEAD	1	PVC
19	S-099-1W	SECONDARY PISTON (001)	1	CAST IRON
20	AS-086-1 PVC	DIAPHRAGM BOLT ASSEMBLY	1	PVC
22	08/02/103	BOLT-SOLUTION HEAD	4	SS
23	09/01/28	WASHER-SOLUTION HEAD	4	SS
24	S-097-1W	ADAPTOR	1	CAST IRON
25	10/01/18	SPRING PIN	2	St
45	14/01/01	316 ST/STEEL BALL CHECK 1/4"	4	PLEASE SPECIFY
	14/01/02	HAST. C BALL CHECK 1/4"	4	PLEASE SPECIFY
	14/01/03	PYREX BALL CHECK 1/4"	4	PLEASE SPECIFY
	14/01/04	CERAMIC BALL CHECK 1/4"	4	PLEASE SPECIFY
	KVD-1-D-PVC	DISCHARGE VALVE ASSEMBLY	1	PVC
37	S-083-1-3W PVC	VALVE BODY	1	PVC
44	S-088-1-3W PVC	VALVE INSERT	2	PVC
46	07/03/73	*O*-RING	1	
	KVS-1-D PVC	SUCTION VALVE ASSEMBLY	1	PVC
37	S-083-1-3W PVC	VALVE BODY	1	PVC
44	S-088-1-3W PVC	VALVE INSERT	2	PVC
46	07/03/73	*O*-RING	1	



<b>PVC</b> MATERIAL FINISH	14 WINTERTON ROAD, CLAYTON, VIC. 3168	DRAWN: <b>AZ</b> DATE: <b>30/07/03</b>
		SCALE: <b>NTS</b> CHECKED:
TOLERANCE: DEC. 0.00 +/- 0.1 DEC. 0.0 +/- 0.2 ANG. +/- 1 DEG.		TITLE: <b>CROSS SECTION-SOLUTION END                  2500 - 001 SERIES (1 GALLON)</b>
30° ANGLE PROJECTION	DRG. No.: <b>10414-02</b>	SHIT. <b>1</b> APPD:

ACN 005 550 514



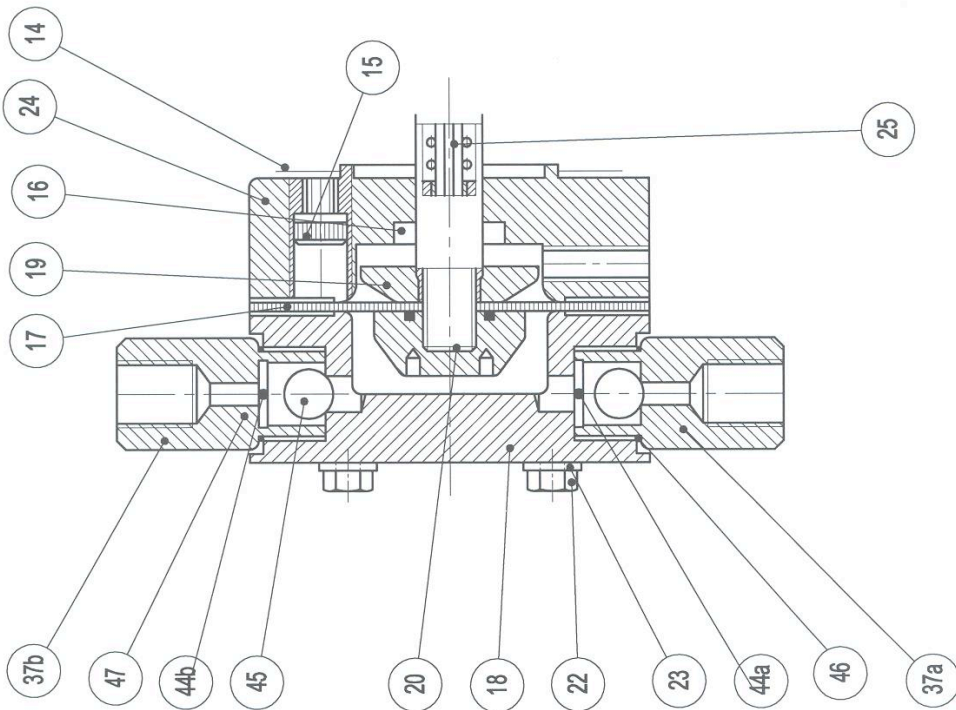
ITEM	PART No.	DESCRIPTION	QTY	COMMENT
14	10313	GASKET-ADAPTOR	1	
15	0801777	CAP SCREW-ADAPTOR	2	St
16	070126	OIL SEAL 16X28X7	1	St
17	S-094-2-3	D/APHRAGM (005)	1	PTFE
18	S-080-2W SS	SOLUTION HEAD	1	SS
19	S-099-2W	SECONDARY PISTON (002)	1	CAST IRON
20	AS-096-2 SS	D/APHRAGM BOLT ASSEMBLY	1	SS
22	08/02103	BOLT-SOLUTION HEAD	4	SS
23	09/0128	WASHER-SOLUTION HEAD	4	SS
24	S-097-2W	ADAPTOR	1	CAST IRON
25	10/0118	SPRING PIN	2	St
45	14/0101	316 ST / STEEL BALL CHECK 1/4"	2	SS
	KVD-2-3-S-SS	DISCHARGE VALVE ASSEMBLY	1	SS
37b	S-083-1-3W SS	VALVE BODY	1	SS
44	S-088-1-3W PTFE	VALVE INSERT	1	PTFE
46	07/0303	O-RING	1	
47	S-089-2-3W PTFG	SPACER-VALVE INSERT	1	PTFG
	KVS-2-3-S-SS	SUCTION VALVE ASSEMBLY	1	SS
37a	S-083-1-3W SS	VALVE BODY	1	SS
44	S-088-1-3W PTFE	VALVE INSERT	1	PTFE
46	07/0303	O-RING	1	
47	S-089-2-3W PTFG	SPACER-VALVE INSERT	1	PTFG

MATERIAL	SS
FINISH	
300 ANGLE PROJECTION	
TOLERANCE:	DEC. 0.001/0.1 DEC. 0.01/0.2 ANG. 1/4 1 DEG.
14 WINTERTON ROAD, CLAYTON, VIC. 3168	
DRAWN: AZ DATE: 30.07.03	
TITLE: CROSS SECTION-SOLUTION END 2500 - 002 SERIES (2 GALLON)	
SCALE: NTS CHECKED:	
DRG. No.:	10414-03
SHT.	1
APPD.	1

ACN 005 550 514

ITEM	PART No.	DESCRIPTION	QTY	COMMENT
14	10313	GASKET-ADAPTOR	1	
15	08/0177	CAP SCREW-ADAPTOR	2	SI
16	07/0126	OIL SEAL 16X28X7	1	SI
17	S-094-2-3	DIAPHRAGM (002)	1	PTFE
18	S-080-2-PVC	SOLUTION HEAD	1	PVC
19	S-099-2W	SECONDARY PISTON (002)	1	CAST IRON
20	AS-096-2 PVC	DIAPHRAGM BOLT ASSEMBLY	1	PVC
22	08/02103	BOLT-SOLUTION HEAD	4	SS
23	09/0128	WASHER-SOLUTION HEAD	4	SS
24	S-097-2W	ADAPTOR	1	CAST IRON
25	10/0118	SPRING PIN	2	SI
45	14/0101	316 ST/STEEL BALL CHECK 1/4"	2	PLEASE SPECIFY
	14/0102	HAST. C BALL CHECK 1/4"	2	PLEASE SPECIFY
	14/0103	PYREX BALL CHECK 1/4"	2	PLEASE SPECIFY
	14/0104	CERAMIC BALL CHECK 1/4"	2	PLEASE SPECIFY
	KVD-2-3-S-PVC	DISCHARGE VALVE ASSEMBLY	1	PVC
37B	S-084-2-3W	VALVE BODY	1	PVC
44B	E-16 PVC	STOP BALL CHECK (DISCHARGE)	1	PVC
46	07/0303	"O"-RING	1	
	KVS-2-3-S-PVC	SUCTION VALVE ASSEMBLY	1	PVC
37A	S-083-2-3W	VALVE BODY	1	PVC
44A	E-16 PVC	STOP BALL CHECK (SUCTION)	1	PVC
46	07/0303	"O"-RING	1	



MATERIAL <b>PVC</b>	FINISH	 30° ANGLE PROJECTION	TOLERANCE:	DRG. No.: 10414-04 SH. 1	DRAWN: AZ DATE: 30.07.03
			DEC. 0.0 1/4-0.1 DEC. 0.0 1/4-0.2 DEC. 1/8-1 DEC.		

ACN 005 550 514

ITEM	PART No.	DESCRIPTION	QTY	COMMENT
14	10313	GASKET-ADAPTOR	1	
15	080177	CAP SCREW-ADAPTOR	2	St
16	070126	OIL SEAL 16X28X7	1	St
17	S-094-2-3	DIAPHRAGM (005)	1	PTFE
18	S-080-3W SS	SOLUTION HEAD	1	SS
19	S-099-3W	SECONDARY PISTON (005)	1	CAST IRON
20	AS-096-3 SS	DIAPHRAGM BOLT ASSEMBLY	1	SS
22	0802103	BOLT-SOLUTION HEAD	4	SS
23	090128	WASHER-SOLUTION HEAD	4	SS
24	S-097-3W	ADAPTOR	1	CAST IRON
25	1001118	SPRING PIN	2	St
45	140101	316SS BALL CHECK 1/4"	2	SS
	KVD-2-3-S-SS	DISCHARGE VALVE ASSEMBLY	1	SS
37	S-083-1-3W SS	VALVE BODY	1	SS
44	S-086-1-3W PTFE	VALVE INSERT	1	PTFE
46	070303	O-RING	1	
47	S-089-2-3W PTFE	SPACER-VALVE INSERT	1	PTFE
	KVS-2-3-S-SS	SUCTION VALVE ASSEMBLY	1	SS
37	S-083-1-3W SS	VALVE BODY	1	SS
44	S-086-1-3W PTFE	VALVE INSERT	1	PTFE
46	070303	O-RING	1	
47	S-089-2-3W PTFE	SPACER-VALVE INSERT	1	PTFE

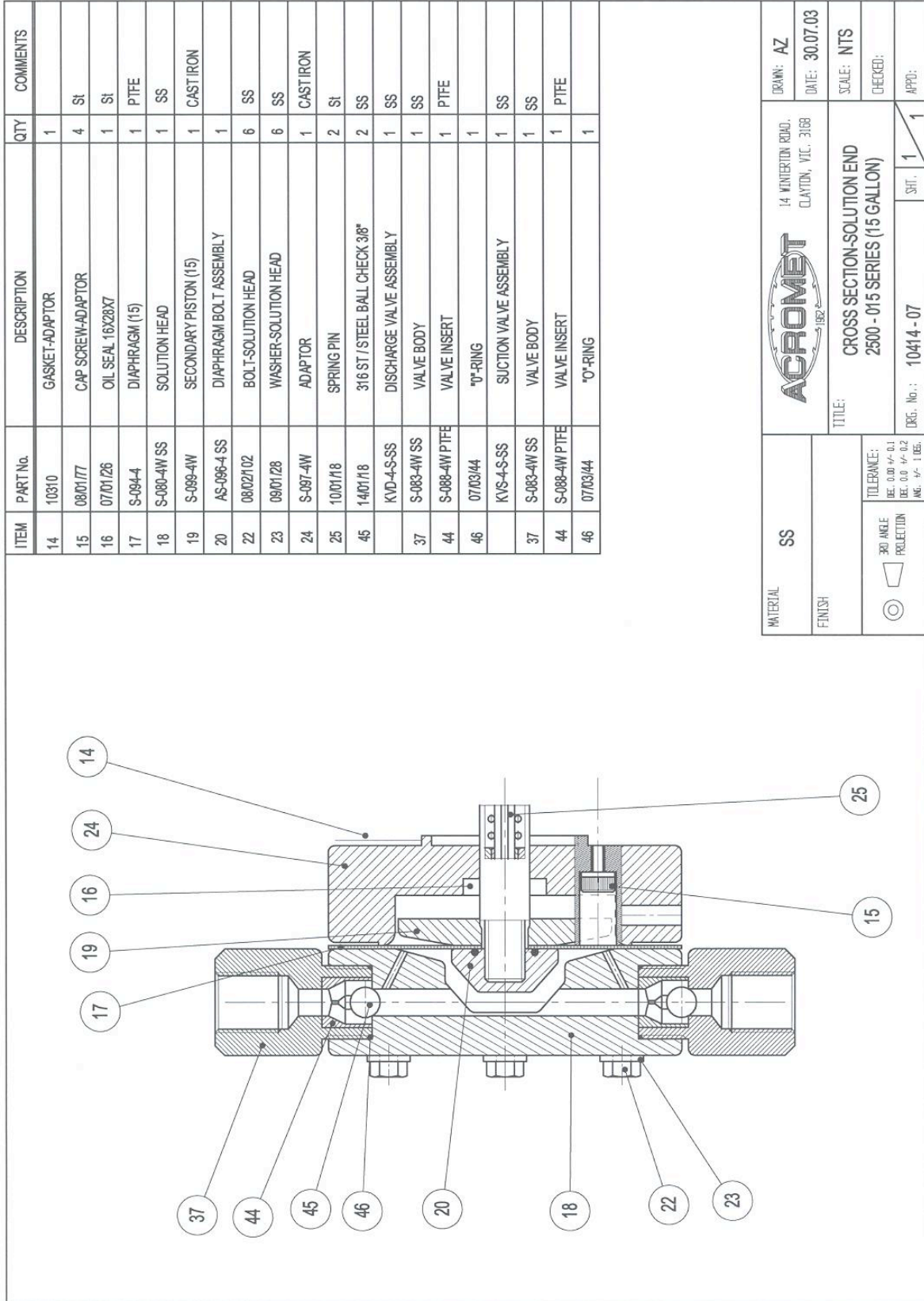
MATERIAL	SS	ACROMET	14 WINTERTON ROAD, CLAYTON, VIC. 3168	DRAWN: AZ
FINISH		TITLE:	CROSS SECTION-SOLUTION END 2500 - 005 SERIES (5 GALLON)	DATE: 30/07/03
30° ANGLE PROJECTION		TOLERANCE:		SCALE: NTS
		DEC. 0.00 +/- 0.1 DEC. 0.0 +/- 0.2 ME. +/- 1.00		CHECKED:
		DEC. No.: 10414-05	SHT. 1	APPD:



ITEM	PART No.	DESCRIPTION	QTY	COMMENT
14	10313	GASKET-ADAPTOR	1	
15	0810177	CAP SCREW-ADAPTOR	2	St
16	0710126	OIL SEAL 16X28X7	1	St
17	S-094-23	DIAPHRAGM (005)	1	PTFE
18	S-080-3PVC	SOLUTION HEAD	1	PVC
19	S-099-3W	SECONDARY PISTON (005)	1	CAST IRON
20	AS-096-3 PVC	DIAPHRAGM BOLT ASSEMBLY	1	PVC
22	08102103	BOLT-SOLUTION HEAD	4	SS
23	0910128	WASHER-SOLUTION HEAD	4	SS
24	S-097-3W	ADAPTOR	1	CAST IRON
25	1010118	SPRING PIN	2	St
45	1410101	316 ST/STEEL BALL CHECK 1/4"	2	PLEASE SPECIFY
	1410102	HAST. C BALL CHECK 1/4"	2	PLEASE SPECIFY
	1410103	PYREX BALL CHECK 1/4"	2	PLEASE SPECIFY
	1410104	CERAMIC BALL CHECK 1/4"	2	PLEASE SPECIFY
	KVD-23-S-PVC	DISCHARGE VALVE ASSEMBLY	1	PVC
37B	S-084-23W PVC	VALVE BODY	1	PVC
44B	E-16 PVC	STOP BALL CHECK (DISCHARGE)	1	PVC
46	0710303	*O*-RING	1	
	KVS-23-S-PVC	SUCTION VALVE ASSEMBLY	1	PVC
37A	S-083-23W PVC	VALVE BODY	1	PVC
44A	E-16 PVC	STOP BALL CHECK (SUCTION)	1	PVC
46	0710303	*O*-RING	1	

MATERIAL	PVC
FINISH	
30° ANGLE PROJECTION	
TOLERANCE:	DEC. 0.00 $\pm$ 0.1 DEC. 0.00 $\pm$ 0.2 ME. $\pm$ 1.05.
 14 WINTERTON ROAD, CLAYTON, VIC. 3168 TITLE: CROSS SECTION-SOLUTION END 2500 - 005 SERIES (5 GALLON) Dwg. No.: 10414-06 SHT. 1/1	
DRAWN: AZ	DATE: 30/07/03
SCALE: NTS	CHECKED:
APPRO:	



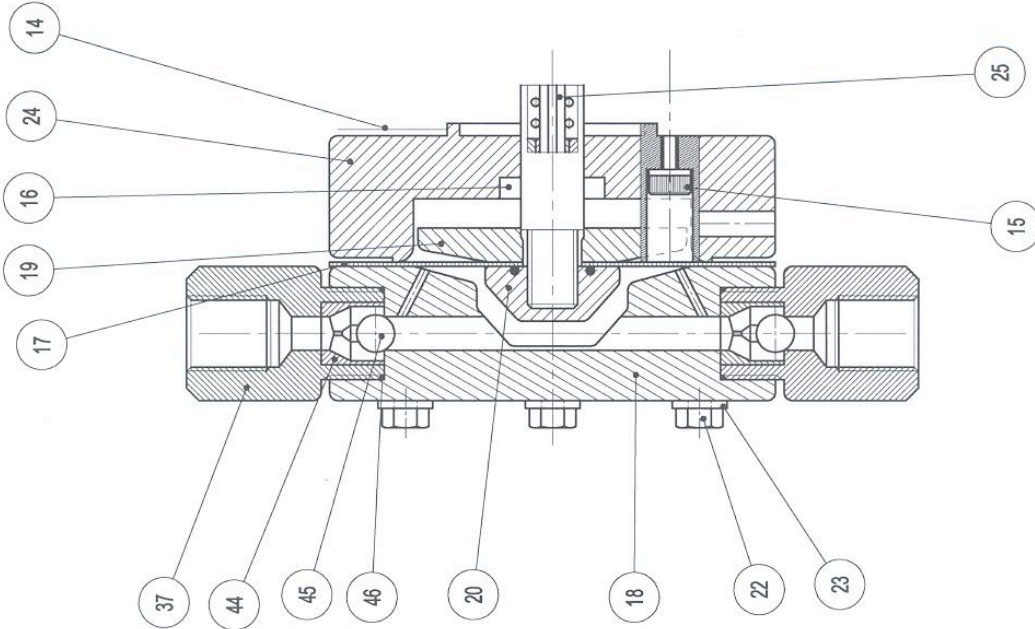
ITEM	PART No.	DESCRIPTION	QTY	COMMENTS
14	10310	GASKET-ADAPTOR	1	
15	0801/77	CAP SCREW-ADAPTOR	4	St
16	0701/26	OIL SEAL 16X28X7	1	St
17	S-084-4	DIAPHRAGM (15)	1	PTFE
18	S-080-4W SS	SOLUTION HEAD	1	SS
19	S-088-4W	SECONDARY PISTON (15)	1	CAST IRON
20	AS-086-4 SS	DIAPHRAGM BOLT ASSEMBLY	1	
22	0802/102	BOLT-SOLUTION HEAD	6	SS
23	0901/28	WASHER-SOLUTION HEAD	6	SS
24	S-087-4W	ADAPTOR	1	CAST IRON
25	1001/18	SPRING PIN	2	St
45	1401/18	316 ST / STEEL BALL CHECK 3/8"	2	SS
	KVD-4-S-SS	DISCHARGE VALVE ASSEMBLY	1	SS
37	S-083-4W SS	VALVE BODY	1	SS
44	S-088-4W PTFE	VALVE INSERT	1	PTFE
46	0703/44	"O"-RING	1	
	KVS-4-S-SS	SUCTION VALVE ASSEMBLY	1	SS
37	S-083-4W SS	VALVE BODY	1	SS
44	S-088-4W PTFE	VALVE INSERT	1	PTFE
46	0703/44	"O"-RING	1	

MATERIAL SS	FINISH	30° CHAMFER FILLET FILLET	TOLERANCE: DEC. 0.00 +/- 0.1 DEC. 0.0 +/- 0.2 ANG. +/- 1 DEG.	DRAWN: AZ
				DATE: 30.07.03
TITLE: CROSS SECTION-SOLUTION END 2500 - 015 SERIES (15 GALLON)		SCALE: NTS CHECKED:		APPD:
DEPT. No.: 10414-07		SFT. 1	SFT. 1	SFT. 1



14 WINTERTON ROAD,  
CLAYTON, VIC. 3168

ITEM	PART No.	DESCRIPTION	QTY	COMMENTS
14	10310	GASKET-ADAPTOR	1	
15	080177	CAP SCREW-ADAPTOR	4	St
16	070126	OIL SEAL 16X28X7	1	St
17	S-094-4	DIAPHRAGM (15)	1	PTFE
18	S-083-4W PVC	SOLUTION HEAD	1	PVC
19	S-089-4W	SECONDARY PISTON (15)	1	CAST IRON
20	AS-086-4 PVC	DIAPHRAGM BOLT ASSEMBLY	1	
22	0802102	BOLT-SOLUTION HEAD	6	SS
23	090128	WASHER-SOLUTION HEAD	6	SS
24	S-097-4W	ADAPTOR	1	CAST IRON
25	100118	SPRING PIN	2	St
45	140118	316 ST/STEEL BALL CHECK 3/8"	2	PLEASE SPECIFY
	140119	HAST. C BALL CHECK 3/8"	2	PLEASE SPECIFY
	140121	CERAMIC BALL CHECK 3/8"	2	PLEASE SPECIFY
	KVD-4-S-PVC	DISCHARGE VALVE ASSEMBLY	1	PVC
37	S-083-4W PVC	VALVE BODY	1	PVC
44	S-088-4W PVC	VALVE INSERT	1	PVC
46	070344	O-RING	1	
37	KVS-4-S-PVC	SUCTION VALVE ASSEMBLY	1	PVC
37	S-083-4W PVC	VALVE BODY	1	PVC
44	S-088-4W PVC	VALVE INSERT	1	PTFE
46	070344	O-RING	1	



<b>PVC</b> MATERIAL FINISH	 30° ANGLE PROJECTION	TOLERANCE: DEC. 0.0 +/- 0.1 DEC. 0.0 +/- 0.2 INC. +/- 1.00	 14 WINTERTON ROAD. CLAYTON, VIC. 3168	DRAWN: <b>AZ</b>
				DATE: <b>30/07/03</b>
TITLE: <b>CROSS SECTION-SOLUTION END                  2500 - 015 SERIES (15 GALLON)</b>			SCALE: <b>NTS</b>	CHECKED:
Dwg. No.: <b>10414-08</b>			SFT. <b>1</b>	APPD:



ITEM	PART No.	DESCRIPTION	QTY	COMMENTS
14	10313	GASKET-ADAPTOR	1	
15	080177	CAP SCREW-ADAPTOR	4	
16	070126	OIL SEAL 16X28X7	1	St
17	S-094-5	DIAPHRAGM (25)	1	PTFE
18	S-080-5W SS	SOLUTION HEAD	1	SS
19	S-098-5W	SECONDARY PISTON (25)	1	CAST IRON
20	AS-096-5 SS	DIAPHRAGM BOLT ASSEMBLY	1	SS
22	10313	BOLT-SOLUTION HEAD	6	SS
23	090128	WASHER-SOLUTION HEAD	6	SS
24	S-097-5W	ADAPTOR	1	CAST IRON
25	100118	SPRING PIN	2	St
45	140105	BALL CHECK 9/16"	2	SS
37	KVD-5-S-SS	DISCHARGE VALVE ASSEMBLY	1	SS
37	S-084-5-8W SS	VALVE BODY	1	SS
44	S-088-5-6W PTFE	VALVE INSERT	1	PTFE
46	070367	"O"-RING	1	
37	KVS-5-6-S-SS	SUCTION VALVE ASSEMBLY	1	SS
37	S-084-5-8W SS	VALVE BODY	1	SS
44	S-088-5-6W PTFE	VALVE INSERT	1	PTFE
46	070367	"O"-RING	1	

MATERIAL	SS	APROMET	14 WINTERTON ROAD, CLAYTON, VIC. 3168	DRAWN: AZ
FINISH				DATE: 04/08/03
TOLERANCE:	DEC. 0.00 +/- 0.1	TITLE:	CROSS SECTION-SOLUTION END	SCALE: NTS
30° ANGLE PROJECTION	DEC. 0.0 +/- 0.2		2500 - 025 SERIES (25 GALLON)	CHECKED:
	INC. +/- 1.00	DOC. No.:	10414-11	APPD:
		SHT.	1	1

ITEM	PART No.	DESCRIPTION	QTY	COMMENTS
14	10313	GASKET-ADAPTOR	1	
15	0801777	CAP SCREW-ADAPTOR	4	
16	070126	OIL SEAL 16X28X7	1	SI
17	S-094-5	DIAPHRAGM (25)	1	PTEE
18	S-080-5W PVC	SOLUTION HEAD	1	PVC
19	S-089-5W	SECONDARY PISTON (25)	1	CAST IRON
20	AS-098-5 PVC	DIAPHRAGM BOLT ASSEMBLY	1	PVC
22	10313	BOLT-SOLUTION HEAD	6	SS
23	090128	WASHER-SOLUTION HEAD	6	SS
24	S-097-5W	ADAPTOR	1	CAST IRON
25	100118	SPRING PIN	2	SI
45	140105	316 ST/STEEL BALL CHECK 9/16"	2	PLEASE SPECIFY
	140106	HAST. C BALL CHECK 9/16"	2	PLEASE SPECIFY
	140107	TEFLON BALL CHECK 9/16"	2	PLEASE SPECIFY
	140108	CERAMIC BALL CHECK 9/16"	2	PLEASE SPECIFY
	KVD-5-6-S-PVC	DISCHARGE VALVE ASSEMBLY	1	PVC
37	S-084-5-6W PVC	VALVE BODY	1	PVC
46	070367	"O"-RING	1	
	KVS-5-6-S-PVC	SUCTION VALVE ASSEMBLY	1	PVC
37	S-084-5-6W PVC	VALVE BODY	1	PVC
44	S-088-5-6W PVC	VALVE INSERT	1	PVC
46	070367	"O"-RING	1	

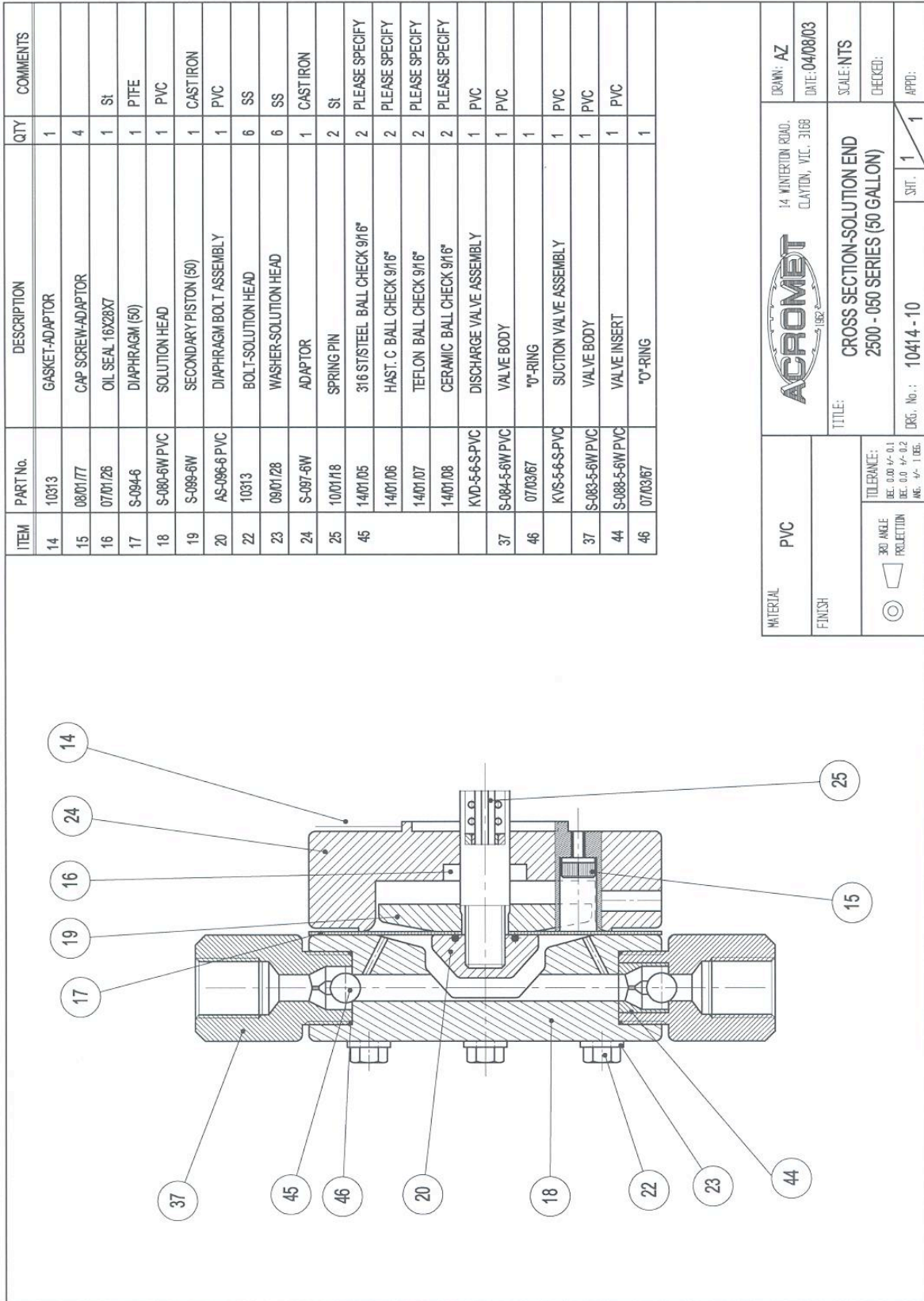
MATERIAL	PVC	ACROMET	14 WINTERTON ROAD. CLAYTON, VIC. 3169	DRAWN: AZ
FINISH				DATE: 30/07/03
TOLERANCE: DEC. 0.00 +/- 0.1 DEC. 0.0 +/- 0.2 ANG. +/- 1 DEG.				SCALE: NTS
30° ANGLE PROJECTION				CHECKED:
			FIG. No.: 10414-12	APPD:
			SHT. 1	1
TITLE: CROSS SECTION-SOLUTION END 2500 - 025 SERIES (25 GALLON)				



ITEM	PART No.	DESCRIPTION	QTY	COMMENTS
14	10313	GASKET-ADAPTOR	1	
15	080177	CAP SCREW-ADAPTOR	4	
16	070126	OIL SEAL 16X28X7	1	St
17	S-094-6	DIAPHRAGM (50)	1	PTFE
18	S-080-6W SS	SOLUTION HEAD	1	SS
19	S-089-6W	SECONDARY PISTON (50)	1	CAST IRON
20	AS-086-6 SS	DIAPHRAGM BOLT ASSEMBLY	1	SS
22	10313	BOLT-SOLUTION HEAD	6	SS
23	090128	WASHER-SOLUTION HEAD	6	SS
24	S-097-6W	ADAPTOR	1	CAST IRON
25	100118	SPRING PIN	2	St
45	140105	BALL CHECK 9/16"	2	SS
37	KVD-5-6-S-SS	DISCHARGE VALVE ASSEMBLY	1	SS
37	S-084-5-6W SS	VALVE BODY	1	SS
44	S-088-5-6W PTFE	VALVE INSERT	1	PTFE
46	070367	*O-RING	1	
37	KVS-5-6-S-SS	SUCTION VALVE ASSEMBLY	1	SS
37	S-084-5-6W SS	VALVE BODY	1	SS
44	S-088-5-6W PTFE	VALVE INSERT	1	PTFE
46	070367	*O-RING	1	

MATERIAL	SS	ACROMET	14 WINTERTON ROAD, CLAYTON, VIC. 3168	DRAWN: AZ
FINISH		TITLE:	CROSS SECTION-SOLUTION END 2500 - 050 SERIES (50 GALLON)	DATE: 05/08/03
3RD ANGLE PROJECTION		TOLERANCE:		SCALE: NTS
		DEC. 0.00 +/- 0.1		CHECKED:
		INC. 0.0 +/- 0.2		APPRO:
		ANG. +/- 1 DEG.	DES. No.: 10414-09	SFT. 1/1



ITEM	PART No.	DESCRIPTION	QTY	COMMENTS
14	10313	GASKET-ADAPTOR	1	
15	0810177	CAP SCREW-ADAPTOR	4	
16	0710128	OIL SEAL 16X28X7	1	St
17	S-094-6	DIAPHRAGM (50)	1	PTFE
18	S-080-6W-PVC	SOLUTION HEAD	1	PVC
19	S-089-6W	SECONDARY PISTON (50)	1	CAST IRON
20	AS-086-6-PVC	DIAPHRAGM BOLT ASSEMBLY	1	PVC
22	10313	BOLT-SOLUTION HEAD	6	SS
23	0910128	WASHER-SOLUTION HEAD	6	SS
24	S-087-6W	ADAPTOR	1	CAST IRON
25	1001118	SPRING PIN	2	St
45	1410105	316 ST/STEEL BALL CHECK 9/16"	2	PLEASE SPECIFY
	1410106	HAST. C. BALL CHECK 9/16"	2	PLEASE SPECIFY
	1410107	TEFLON BALL CHECK 9/16"	2	PLEASE SPECIFY
	1410108	CERAMIC BALL CHECK 9/16"	2	PLEASE SPECIFY
	KVD-5-6-S-PVC	DISCHARGE VALVE ASSEMBLY	1	PVC
37	S-084-5-6W-PVC	VALVE BODY	1	PVC
46	0710367	O-RING	1	
	KVS-5-6-S-PVC	SUCTION VALVE ASSEMBLY	1	PVC
37	S-083-5-6W-PVC	VALVE BODY	1	PVC
44	S-088-5-6W-PVC	VALVE INSERT	1	PVC
46	0710367	O-RING	1	

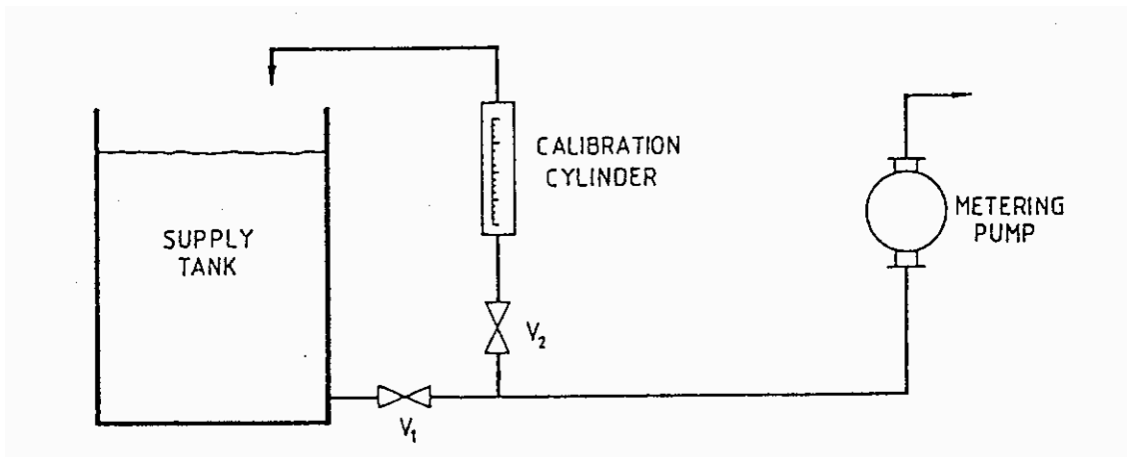
MATERIAL PVC		DRAWN: AZ
FINISH		DATE: 04/08/03
TOLERANCE: DEC. 0.00 +/- 0.1 DEC. 0.0 +/- 0.2 ME. +/- 1.05.		SCALE: NTS
30° ANGLE PROJECTION		CHECKED:
TITLE: CROSS SECTION-SOLUTION END 2500 - 050 SERIES (50 GALLON)		APPRO:
DRG. No.: 10414 - 10		SHT. 1 / 1

## 10. CALIBRATION OF A METERING PUMP

To perform a calibration test on the delivery rate you will require a stop watch and materials necessary to perform a series of simple calculations.

To utilise this system efficiently, the following procedure should be followed whilst the pump is operating.

1. Valve V1 must remain open except when the user is testing the deliver rate.
2. To test the delivery rate, open valve V2 and flood the calibration cylinder well above the top graduation mark.
3. Close valve V1.
4. At the moment when the fluid level reaches the top graduation mark, begin timing the test.
5. When the liquid reaches the desired lower graduation, stop your watch and note down the time and calibration discharge quantity. Open valve V1 quickly and close V2 to avoid air being drawn into the system via the calibration cylinder.
6. Should another calibration test be required, then proceed to Item 2.



**FIG. 1**

### EXAMPLE OF TYPICAL CALIBRATION TEST:

Test volume recorded	:	1190 millilitres
Test time taken	:	63 seconds
Flow Rate (L/H)	=	$\frac{\text{volume recorded (ml)} \times 3.6}{\text{time taken (sec)}}$
	=	$\frac{1190 \times 3.6}{63} = 68 \text{ litre/hour}$

**CALIBRATION CYLINDER – INSTALLATION GUIDE****LOCATION:**

Install the calibration cylinder as shown in Figure 1. The cylinders must be installed in the suction piping in a vertical position and as close as possible to the suction tank.

**Remember** the location should make allowance for sufficient free space around the calibration cylinder for easy reading of graduations.

**PIPING:**

It is essential that the size of the pipe to the calibration cylinder be the same size as the suction piping and cylinder inlet connection. Under-sized pipe work will cause suction losses and, hence, affect calibration accuracy.

We strongly recommend that the use of full-flow ball valves to give consistent system throughput and rapid open and shut operation – an important feature when checking calibrations.

Piping should be air-tight and suitably supported at regular intervals.

An overflow/venting line should be connected between the top of the calibration cylinder and the supply tank.

**CAUTION: NEVER USE THE CYLINDER ON THE DISCHARGE SIDE OF ANY PUMP.**

---

## **11. BACK PRESSURE & PULSATION DAMPENER VALVE INSTRUCTIONS**

### **INSTALLATION:**

See diagram overleaf of recommended installation layout for pressure relief and back pressure applications.

We recommend installation of a pulsation dampener between valve and pump for both applications to provide smoother, more accurate valve operation and maximise valve life.

Coat pipe fittings with suitable thread sealant such as PTFE tape before connecting to prevent leakage.

**CAUTION: Do not over-tighten screwed connection. Should leakage occur during operation, unfasten connection and recoat threads with sealant.**

### **ADJUSTMENT:**

Valve operating pressure is controlled by the spring (8) and can be increased or decreased by varying the spring preload.

At date of purchase, Enchlor will adjust the valve to meet customer's requirements.

To alter or set operating pressure at site, it is necessary for a pressure gauge with snubber to be installed in the line between the valve and the pump and with pump operating:-

For Back Pressure: Unfasten locknut (5). Unscrew adjustment screw (4) to decrease pressure or screw in to increase pressure. When required pressure is achieved, retighten locknut.

For Pressure Relief: Unfasten locknut. Unscrew adjustment screw to decrease pressure or screw in to increase pressure. When full flow through valve at required relief pressure is achieved, retighten locknut.

### **MAINTENANCE:**

The valve and its components should be inspected annually or when incorrect operation is suspected.

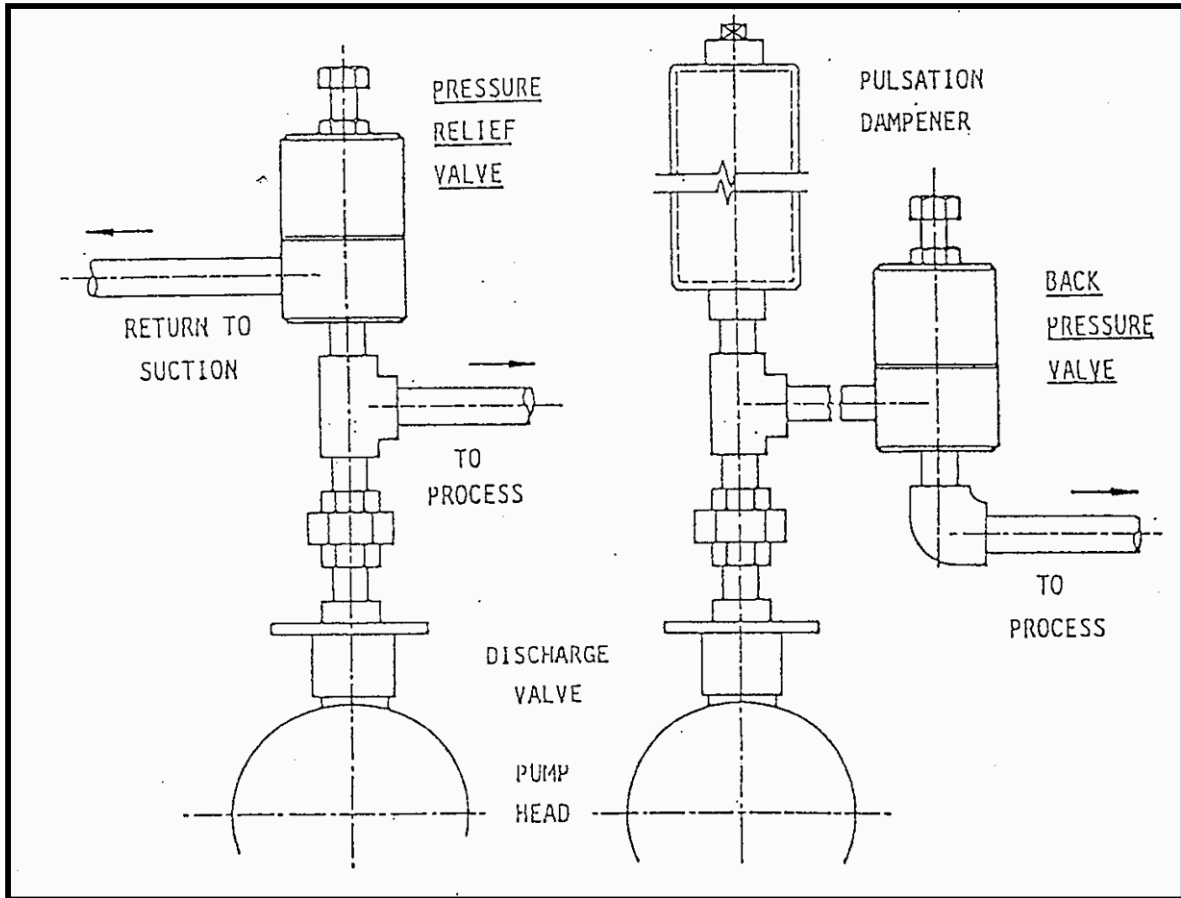
Disassembly is relatively simple. Unfasten locknut and unscrew adjustment screw to remove spring preload. Unfasten the three main bolts (3). These bolts hold the upper and lower halves together. Separate body halves and remove internals.

Carefully inspect and clean all components. Worn or damaged parts should be replaced. Smear the outer surface of the plunger and the bore of the upper body with grease to prevent plunger sticking in bore during operation.

Assembly procedure is reverse of disassembly.

After reinstalling, adjust valve operating pressure as previously described.

### INSTALLATION LAYOUT



**GENERAL ASSEMBLY 502 SERIES  
BACK PRESSURE VALVE**

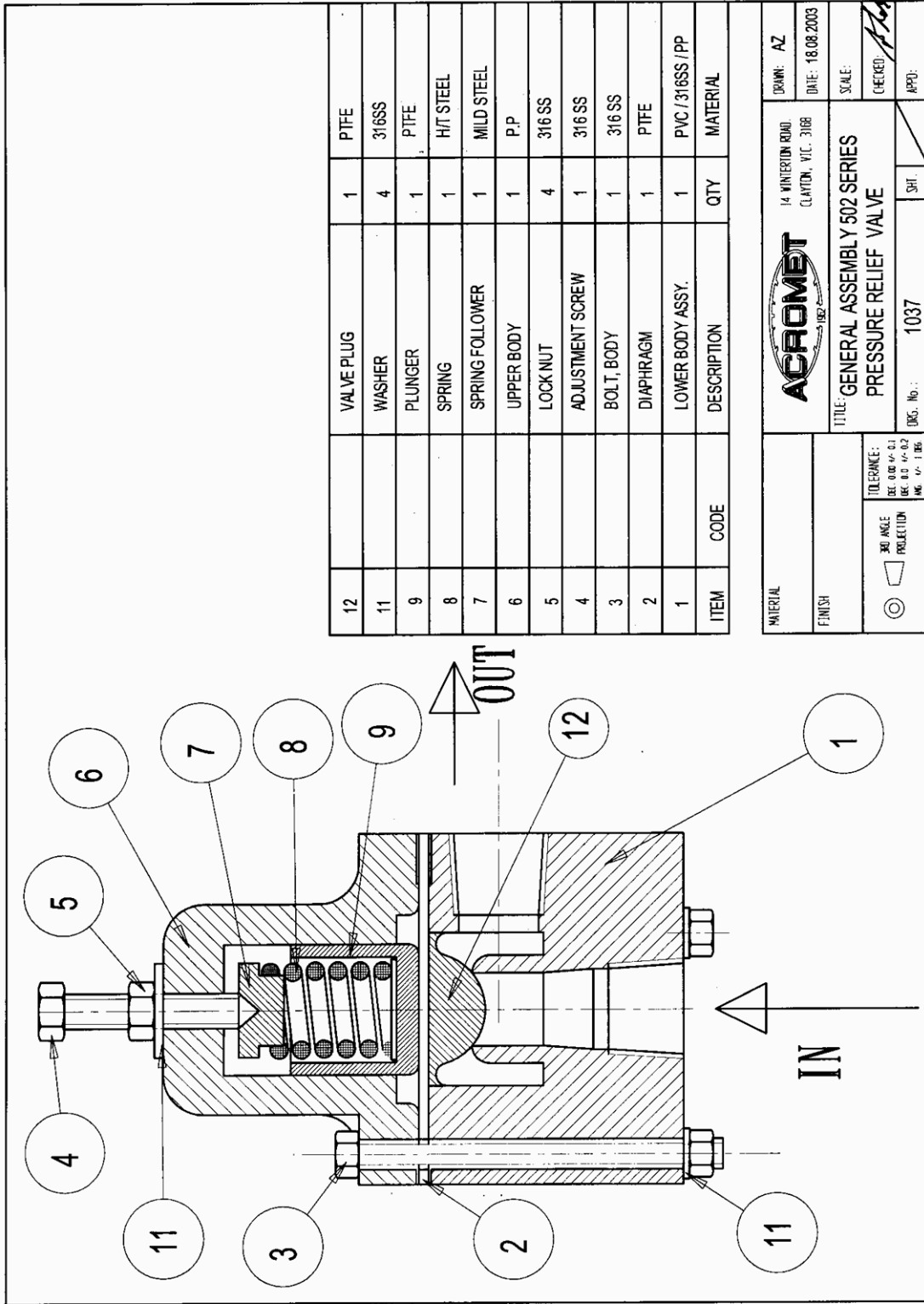
11	WASHER	4	316SS
9	PLUNGER	1	P.T.F.E
8	SPRING	1	H/T STEEL
7	SPRING FOLLOWER	1	MILD STEEL
6	UPPER BODY	1	P.P.
5	LOCK NUT	4	316 SS
4	ADJUSTMENT SCREW	1	316 SS
3	BOLT, BODY	1	316 SS
2	DIAPHRAGM	1	P.T.F.E
1	LOWER BODY ASSY.	1	PVC/316SS/PP
ITEM	CODE	QTY	MATERIAL

		14 WINTERTON ROAD, CLAYTON, VIC. 3168		DRAWN: AZ DATE: 18.08.2003
TITLE: GENERAL ASSEMBLY 502 SERIES BACK PRESSURE VALVE		SCALE:	CHECKED:	APPD:
TOLERANCE: DEC. 0.01 $\pm$ 0.1 DEC. 0.0 $\pm$ 0.2 INC. $\pm$ 0.05	30° ANGLE PROJECTION	Dwg. No.: 1036	SHT.	ACN 005 550 514



**GENERAL ASSEMBLY 502 SERIES**

**PRESSURE RELIEF VALVE**



ITEM	CODE	DESCRIPTION	QTY	MATERIAL
12		VALVE PLUG	1	PTFE
11		WASHER	4	316SS
9		PLUNGER	1	PTFE
8		SPRING	1	H/T STEEL
7		SPRING FOLLOWER	1	MILD STEEL
6		UPPER BODY	1	P.P.
5		LOCK NUT	4	316 SS
4		ADJUSTMENT SCREW	1	316 SS
3		BOLT, BODY	1	316 SS
2		DIAPHRAGM	1	PTFE
1		LOWER BODY ASSY.	1	PVC / 316SS / PP
		DESCRIPTION	QTY	MATERIAL

MATERIAL	14 WINTERBORN ROAD CLAYTON, VIC. 3168	DRAWN: AZ
FINISH	<b>ACROMET</b>	DATE: 18.08.2003
TOLERANCE: DEC 0.05 / 0.1 DEC 0.0 / 0.02 MIL 0.1 / 0.150	TITLE: GENERAL ASSEMBLY 502 SERIES PRESSURE RELIEF VALVE	SCALE:
30° ANGLE PROJECTION	DWG. No.: 1037	CHECKED: <i>[Signature]</i>
		APPD:

ACN 005 550 514



