Gallagher PULSE
Parts Manual

Part No. 2A02355
Revision 10

QS

LS

CX

GALLAGHER

The Wiring Regulations

All wiring and installation work shall comply with AS/NZS 3000.

Each dispenser should be protected by a suitable circuit breaker and Residual Current Device (RCD) that is capable of being locked off

When designing the site, cable selections should comply with AS/NZS 3008.1 for Australia and AS/NZS 3008.2 for New Zealand.

When terminating external cables in the dispenser crimp joints should be used and should comply with AS/NZS 3000.

If the dispenser is to be installed at a Marina then all wiring shall be performed in compliance with AS/NZS 3004.

How to Contact Gallagher

Gallagher Fuel Systems Ltd

2 Station Road

PO Box 308

Marton 4741

New Zealand

Phone: +64 6 327 0060

Fax: +64 6 327 6724

Emails: fuelsystems.support@gallagher.com

fuelsystems.som@gallagher.com

Web: http://fuelsystems.gallagher.com

ⓘ When contacting Gallagher Fuel Systems Ltd always quote the serial number on the product's nameplate which can be found affixed to the column beneath the User Interface.

Document History

Revision	Date	Comments		Author(s)
10.	20 Dec 2019	**Pg 54 5.5**	Item 3 changed from "Nut" to "Screw M8 x 20 Set Eng S/S T304"	S Dulieu
		Pg's 58 & 59	Solenoid Valve Assembly Item 5. Screw M8 x 25 (x 2) changed to become part of Item 4 (now Qty x 3) Item 2. Retainer repositioned on correct side of the flange between screws and flange	
		Page 92	Jumper added to Stack Controller Module	

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INTRODUCTION

This manual contains parts information for the Gallagher PULSE range of dispensers/ pumps. Use this manual as a guide to help identify part names, part numbers and quantities required for a specific assembly for the purposes of identification/re-ordering.

Any servicing or repairs should be carried out only by suitably qualified technicians approved by Gallagher Fuel Systems Ltd.

HOW TO USE THIS MANUAL

The Gallagher PULSE range has a modular design. The range consists of many different models that vary considerably with the size, shape, features and functions. The structure of this document is such that it describes the parts and assemblies by module rather than by model.

The format of this manual includes a brief description and/or illustration of specific parts or assemblies accompanied by a table containing the part numbers and part descriptions. Where appropriate, match the call-out numbers to the table numbers listed for each illustration.

When requesting parts from Gallagher, the following information will help determine the correct part required:

(a) part number or detailed description (including panel colour if relevant).

(b) service company.

(c) dispenser model number.

(d) dispenser serial number.

(e) oil company.

(f) site name.

In some instances where a specific colour is required for the part please specify on enquiry.

ORDERING ACCESSORIES (SCREWS, NUTS & WASHERS)

Whereas the description of these accessories has been included in this manual, the omission of part numbers indicates that it may be more practical to source such accessories locally.

However, the table in Section 11 does contain part numbers so that these accessories may be ordered from Gallagher should the need arise.

PLEASE NOTE

While Gallagher Fuel Systems Ltd has attempted in every way to confirm that all information in this manual is correct, improvements are being constantly made to the PULSE range that may not be reflected in this manual.

GENERAL SAFETY WARNINGS AND PRECAUTIONS

Flammable   Risk of explosion   Electric Shock Hazard   Toxic Hazard

HAZARD WARNINGS

☠ No naked flames.

☠ Isolate LPG and fuel supplies and empty pipes before working on them.

☠ Isolate electrical supply before opening dispenser cabinet for maintenance.
Physically lock, restrict access to, or tag the circuit breakers you turn off when
working on a dispenser.

☠ The dispenser must be supported at all times by all anchor bolts as shown in
the aapropriate footprint diagram (see "Gallagher PULSE Series - Footprint
Manual." Part No. 2A02068). External support must be used until these are
secured. In service, all anchor bolts must be fitted.

☠ All personnel working with dispensers must be made aware of how, in
an emergency, to turn OFF power to the dispenser and any remote fuel
storage system. They must also be briefed on fire fighting and other relevant
inflammable liquid safety procedures.

☠ There are exposed belt-drives between mechanical pumps and their motors in
fuel pump equipped dispensers. Ensure that power to the motors is isolated
and that the motors have stopped running before opening external panels.

☠ Ensure fuel pipes, flanges etc. are clear of debris before reassembling.

☠ Have all leaks or defects repaired immediately.

☠ Fuels present a toxic hazard and suitable precautions should be taken at all
times to prevent ingestion, inhalation and contact with skin and eyes.

☠ Only lift units using the correct lifting points as indicated in the PULSE
Installation Manual. Never lift by the nozzle boot, sheet metal, etc. Incorrect
lifting also risks damage to equipment which will not be covered under
warranty.

Any repairs must not compromise the safety approval of the dispenser.

The system must not be modified without consulting Gallagher.

Only use genuine spare parts. PULSE dispensers are supplied by Gallagher as a fully approved system. Genuine parts as specified in the original design are integral to the correct function and safety of the system. Gallagher cannot be held responsible for any consequences of using non-genuine parts and will not support under warranty any PULSE where substitution has occurred. Any replacement parts should be like for like. In addition the repairer may be legally liable for the consequences of any unauthorised modifications.

Never operate a non-intrinsically safe circuit without enclosure covers fitted.

Do not short out isolation or intrinsic safety barriers.

DAMAGE WARNINGS

Electronic equipment in a dispenser is susceptible to damage by electro-static discharge (ESD). Suitable preventative measures should be taken at all times when working on the electronic system.

Do not clean using hoses or other pressurised systems. Pressurised water ingress damage invalidates the warranty.

The operating environment should avoid extremes of temperature, humidity, etc. including: direct and constant sunlight and heat; atmospheric precipitation (rain, snow, sleet or hail); ice; salt spray; condensing high humidity and dust.

Do not clean using abrasive materials such as steel wool or abrasive polishes unless specifically recommended.

Ensure air is bled from product lines of remote dispensers and mechanical pumps before dispensing product.

Flush all fuel supply lines and ensure flanges, etc. are clear of debris before connection.

Pressure must not be applied to the upper frame or panels by strops or other pieces of lifting equipment.

PULSE SERIES PARTS - QUICK REFERENCE

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Column Assemblies
L Series/C Series/Holster
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SECTION 3
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HOSE ATTACHMENT KITS

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Meters/Accessories

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SECTION 9
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PULSE CONTROL ASSEMBLY

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SECTION 1
Page 10

LOWER CABINETS

Panels and Fixings/
Framework

LOWER CABINETS

1   LOWER CABINETS

1.1 Hydraulic Cabinet Panels and Fixings

1.1.1 LX/CX Hydraulic Cabinet Panels and Fixings
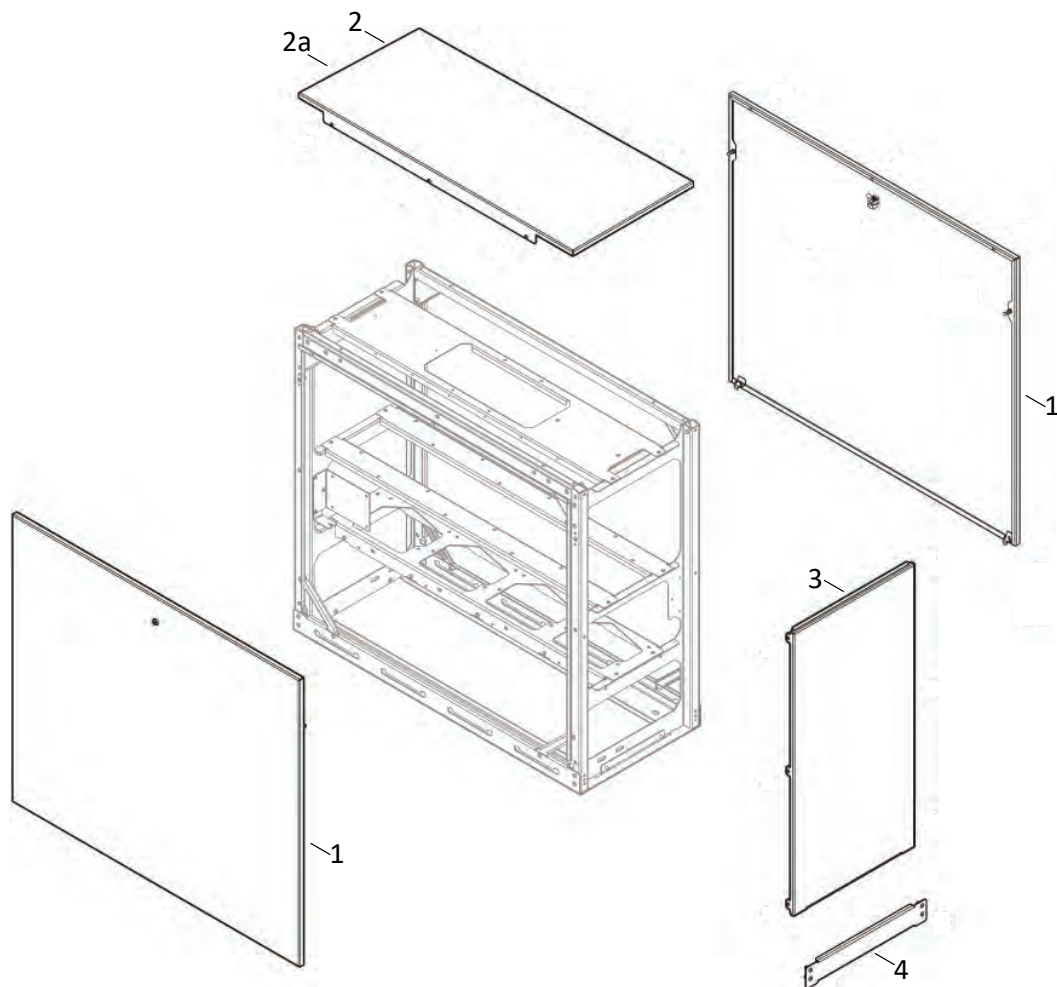
Figure 1.   LX/CX Hydraulic Cabinet Panels and Fixings

Index	Part No.	Part Description
1	P95584*	Side Panel Asm CX/LX
2	P95560*	Top Panel LX
2a	P95122*	Top Panel CX
3	P95561*	Rear Panel
4	P95565BK	Base End Panel
5	P04618P	PULSE Key Lock Asm Panel (not shown)

* Stipulate panel colour/decals when ordering.

1.1.2 LS/CS Hydraulic Cabinet Panels and Fixings
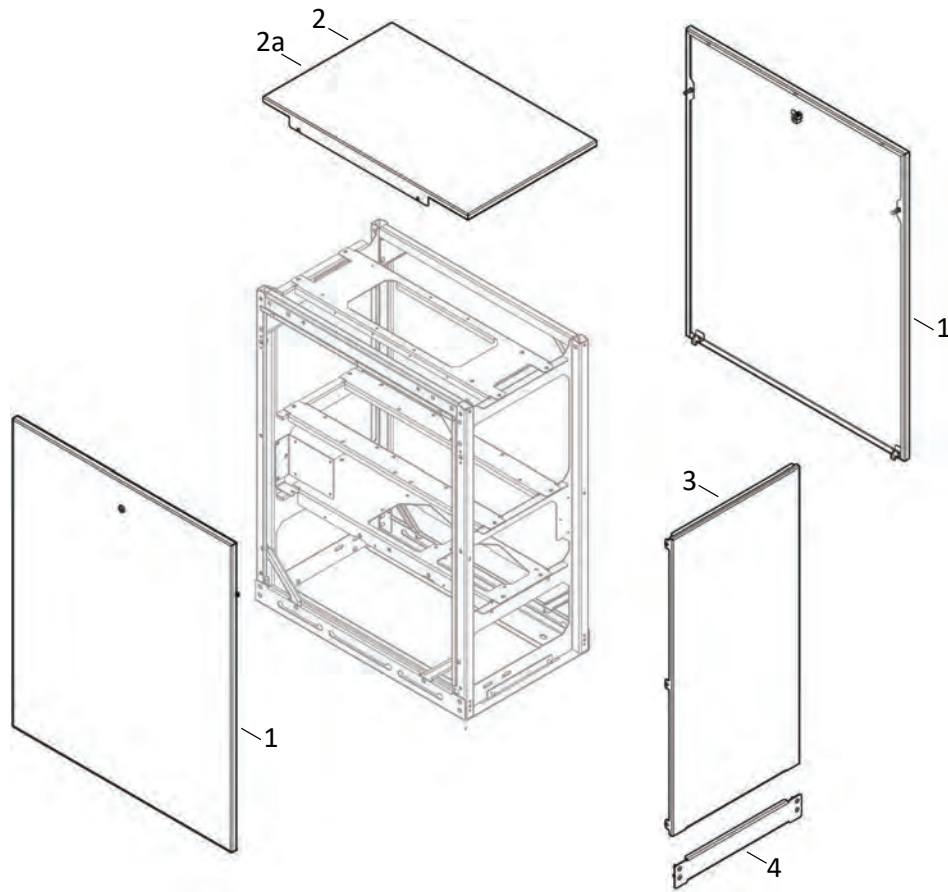
Figure 2.   LS/CS Hydraulic Cabinet Panels and Fixings

Index	Part No.	Part Description
1	P95633*	Side Panel Asm CS/LS
2	P95575*	Top Panel LS
2a	4G95136	Top Panel CS
3	P95561*	Rear Panel
4	P95565BK	Base End Panel
5	P04618P	PULSE Key Lock Asm Panel (not shown)

* Stipulate panel colour/decals when ordering.

LOWER CABINETS

1.1.3 CS Q Hydraulic Cabinet Panels and Fixings

NB: A different top panel is used where CS Q is a single column assembly.
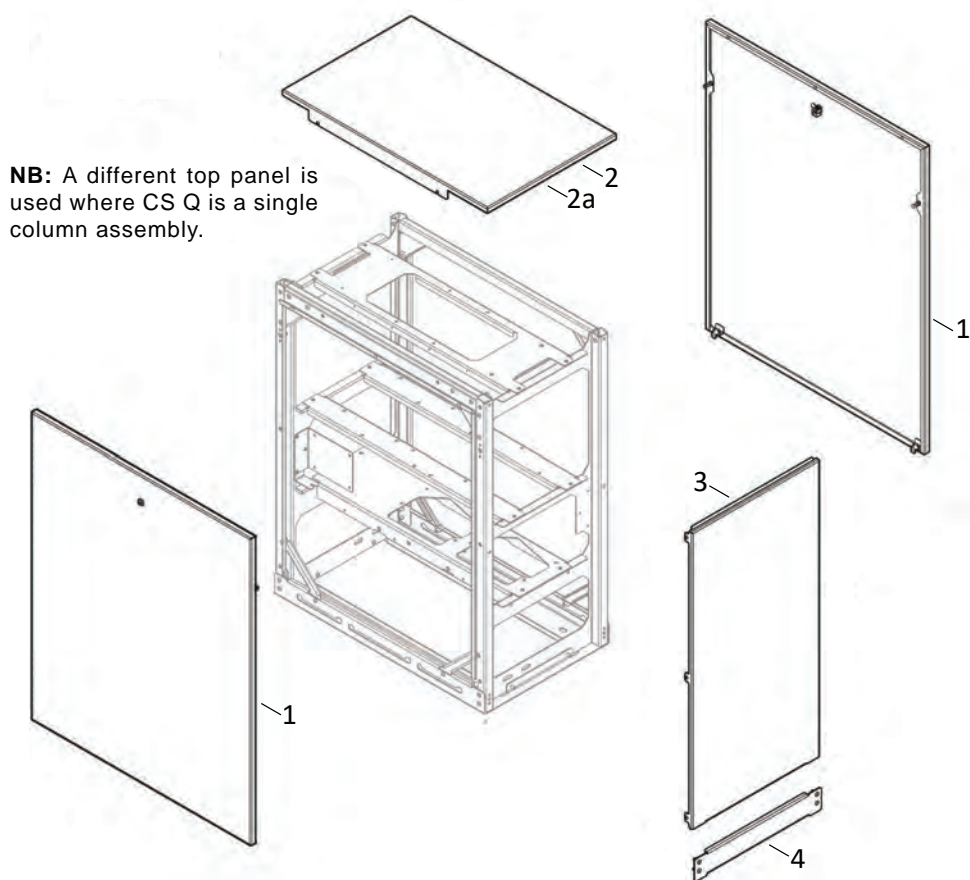
Figure 3.   CSQ Hydraulic Cabinet Panels and Fixings

Index	Part No.	Part Description
1	P95633*	Side Panel Asm CS/LS
2	P95876*	Top Panel Asm QS (2 Column)
2a	P95877*	Top Panel Asm QS (Single Column)
3	P95561*	Rear Panel
4	P95565BK	Base End Panel
5	P04618P	PULSE Key Lock Asm Panel (not shown)

* Stipulate panel colour/decals when ordering.

1.2 Framework

The PULSE Series has frame assemblies which vary according to the size of the cabinet. The LX and CX share the same cabinet frame as does the LS and CS.

NOTE: Frames are only available fully assembled.

Contact SOM with serial number to ensure correct frame is ordered.

2 COLUMNS

This section describes the upper parts of the entire PULSE Series. Because of the unique shape of each model, the following models are described separately:

- L Series

- C Series

- CS Q Series

2.1 L Series Column

The L Series has the traditional type column as illustrated below. The number of holster uprights will vary depending on the number of products being dispensed.

The L Series hose hang options are Retractor and Hanging Hose kits (fixed).

LOWER CABINETS
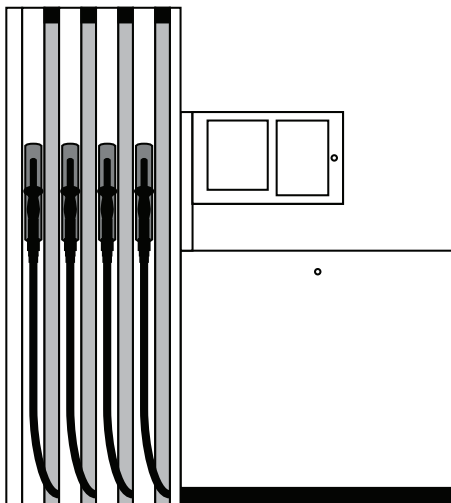
2.1.1 Series 1 Column Assemblies
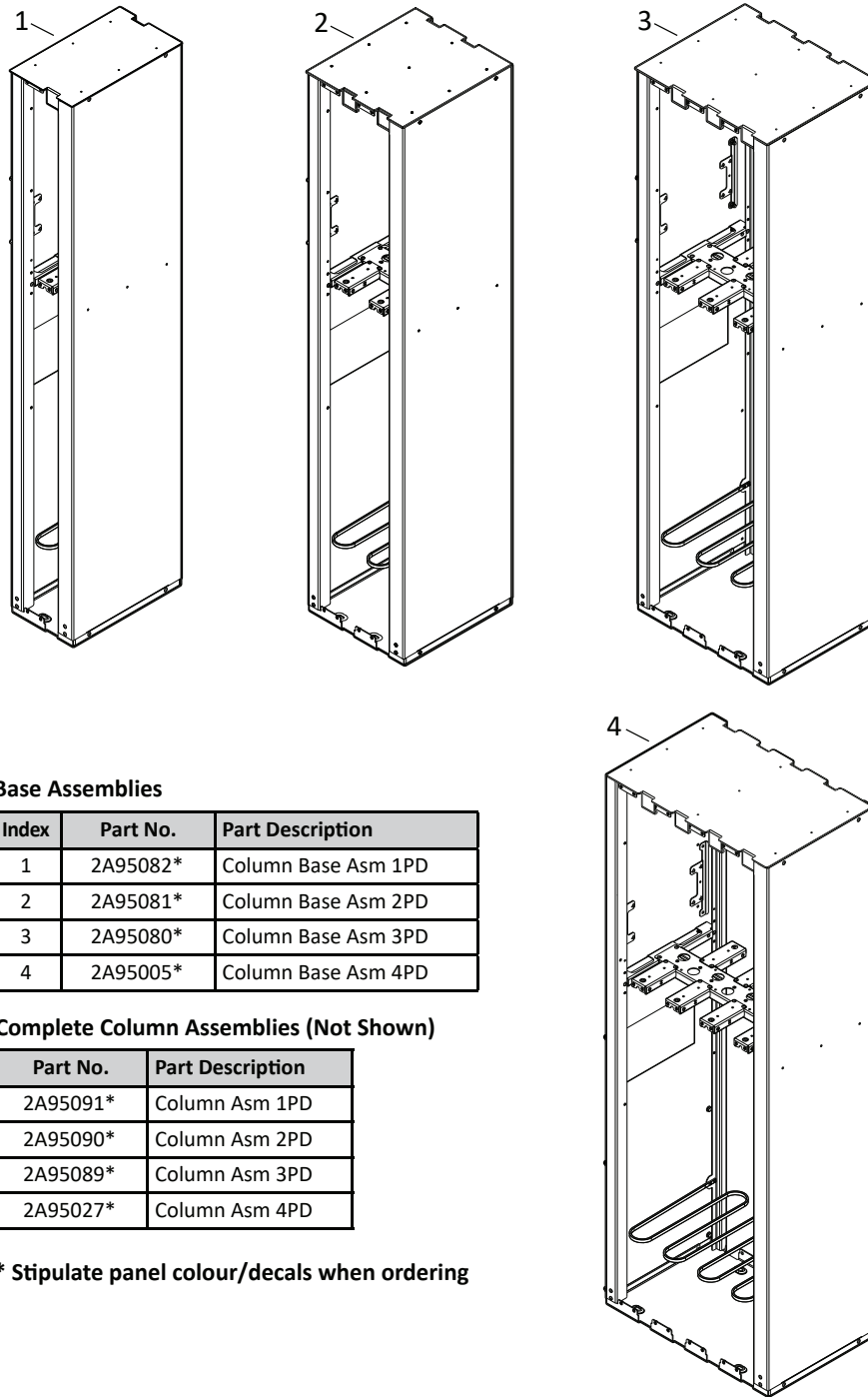
Base Assemblies

Index	Part No.	Part Description
1	2A95082*	Column Base Asm 1PD
2	2A95081*	Column Base Asm 2PD
3	2A95080*	Column Base Asm 3PD
4	2A95005*	Column Base Asm 4PD

Complete Column Assemblies (Not Shown)

Part No.	Part Description
2A95091*	Column Asm 1PD
2A95090*	Column Asm 2PD
2A95089*	Column Asm 3PD
2A95027*	Column Asm 4PD

* Stipulate panel colour/decals when ordering

Figure 4.   Series 1 Column Assemblies

LOWER CABINETS

2.1.2 Series 1 Column Assembly Fixtures

Refer to "4.3 Holsters"
on page 49
for holster variants

NOT SHOWN
6 sets used to
bolt frame to the
Hydraulic Cabinet
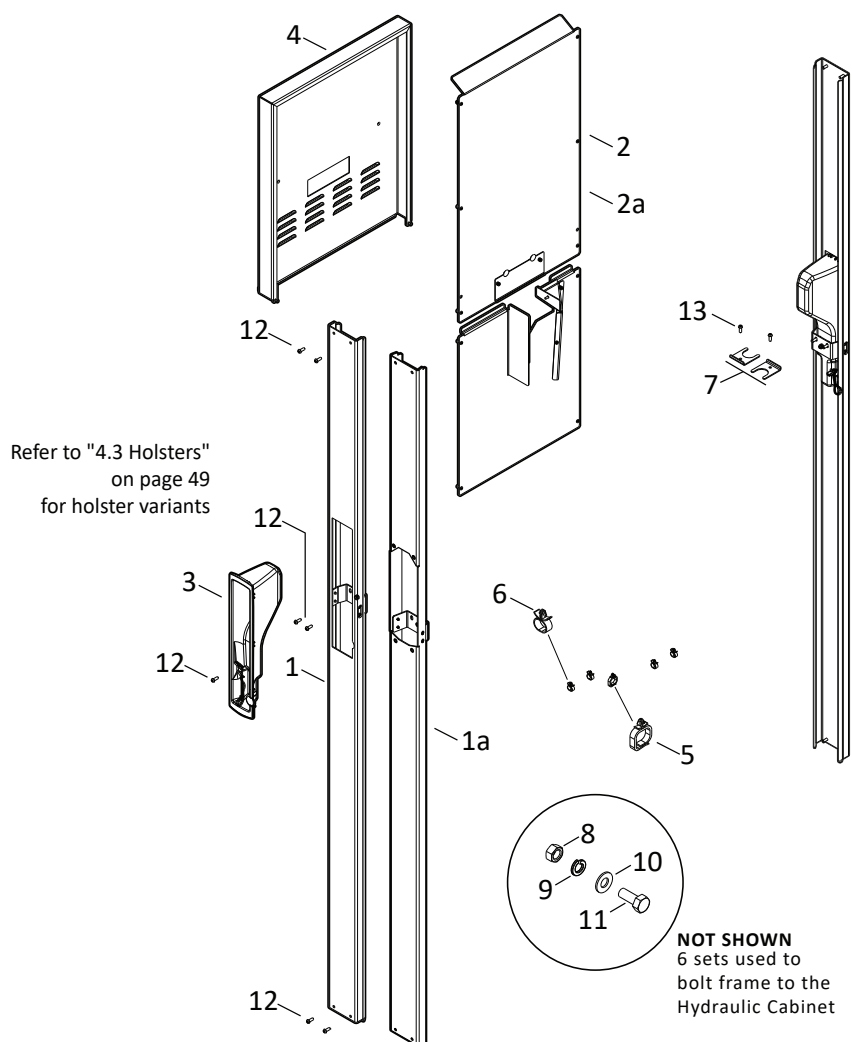
Index	Part No.	Part Description
1	P95016*	Holster Upright
1a	P100247*	LPG Holster Panel Asm
2	2A95014	Shield Kit Standard
2a	2A95014V	Shield Kit VR
3	2A100331	PULSE Nozzle Holster Asm
4	2A95474*	Head Mounting Kit
5	2M00709	Clip Plastic Hi Q 18-PBC21
6	2M00725	Clip Plastic Hi Q 18-PBC15
7	4G100465	Pipe Retainer II
8	5B03240	Nut M8 ZP
9	5C04210	Washer M8 Spring
10	5C04440	Washer M8 x 19 x 1.6 Flat Steel
11	5D00100	Screw M8 x 20 Set Eng ZP
12	5D01650	Screw M6 x 16 Button SKT HD S/S

* Stipulate panel colour/decals when ordering.

Figure 5.   Series 1 Column Assembly Fixtures

LOWER CABINETS

2.1.3 Series 2 Column Assemblies

Base Assemblies

Index	Part No.	Part Description
1	2A100485*	Column Base Asm 1PD
2	2A100484*	Column Base Asm 2PD
3	2A100483*	Column Base Asm 3PD
4	2A100482*	Column Base Asm 4PD
5	2A101152*	Column Base Asm 5PD

Complete Column Assemblies (Not Shown)

Part No.	Part Description
2A100503*	Column Asm 1PD
2A100502*	Column Asm 2PD
2A100501*	Column Asm 3PD
2A100500*	Column Asm 4PD
2A101117*	Column Asm 5PD

* Stipulate panel colour/decals when ordering

Figure 6.   Series 2 Column and Base Assemblies

LOWER CABINETS

2.1.4   Series 2 Column Assembly Fixtures
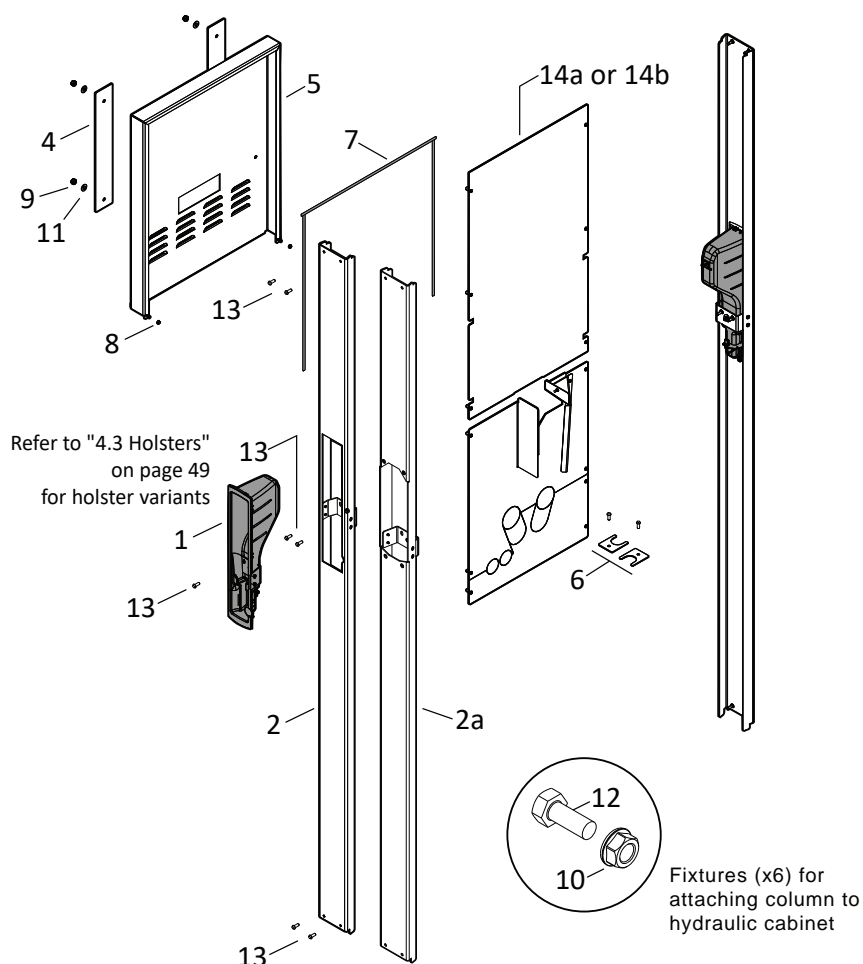
Refer to "4.3 Holsters" on page 49 for holster variants

Fixtures (x6) for attaching column to hydraulic cabinet

Index	Part No.	Part Description
1	2A100331	PULSE Nozzle Holster Asm
2	P100443*	Holster Upright SII
2a	2A100504*	LPG Holster Panel SII Asm
3	2A101236	PULSE L Series Lower Cover 5PD
4	4G100459	Head Support Plate II
5	4G100464	Head Support Cover II
6	4G100465	Pipe Retainer II
7	4P27780	Tape Inseal 3259 1.5 x 6mm

Index	Part No.	Part Description
8	5B00023	Nut M4 Flange Serrated ZP
9	5B03040	Nut M8 Nyloc
10	5B03898	Nut M8 Flange Serrated ZP
11	5C04440	Washer M8 x 19 x 1.6 Flat Steel
12	5D00100	Screw M8 x 20 Set Eng ZP
13	5D01650	Screw M6 x 16 Button SKT HD S/S
14a	2A100497	PULSE L Series Upper Cover SII
14b	2A100386	PULSE L Series Upper Cover VR SII

* Stipulate panel colour/decals when ordering

Figure 7.   Series 2 Column Assembly Fixtures

LOWER CABINETS

2.1.5 Series 1 Shield Kits
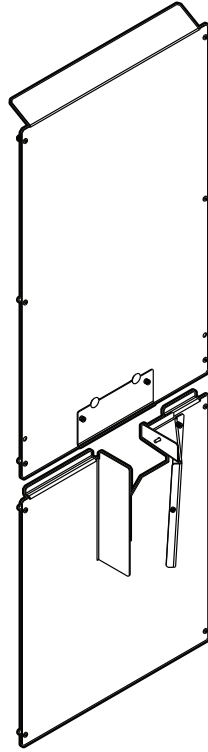
Index	Part No.	Part Description
1	2A95014	Shield Kit Standard
2	2A95014V	Shield Kit VR

Figure 8. **Shield Kits**

2.1.6 Series 2 Upper Covers
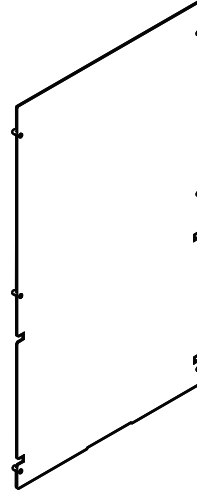
Index	Part No.	Part Description
1	2A100497	L Series Upper Cover SII
2	2A100386	L Series Upper Cover VR SII

Figure 9. **Upper Covers**

2.2 C Series Column

Unique to the C Series Models is the C-Spreader with hanging hose or Retractor.

The C Series holster model uses a Flexi-Arm.

C-Spreader   C-Holster

LOWER CABINETS

LOWER CABINETS
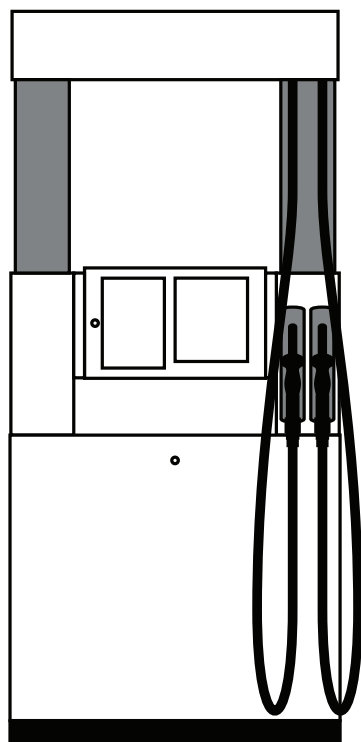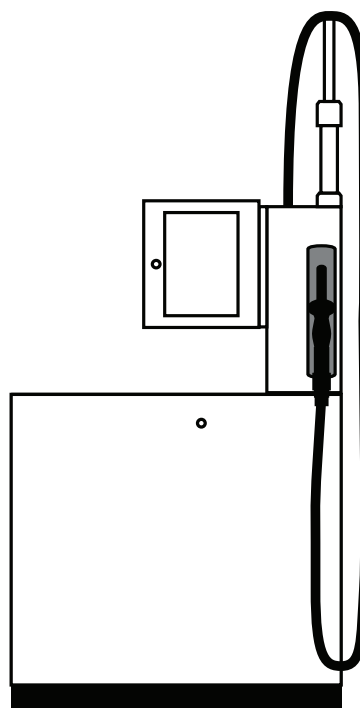
2.2.1 Spreader Panels

CX Wide Spreader Assembly (Part # P95154*)
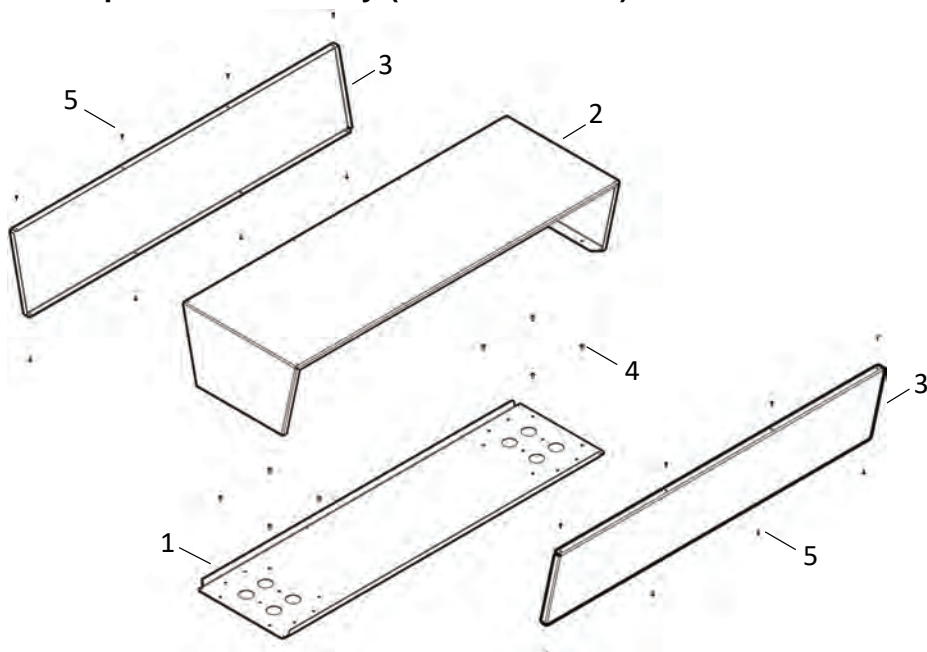
CS Wide Spreader Assembly (Part # P95155*)
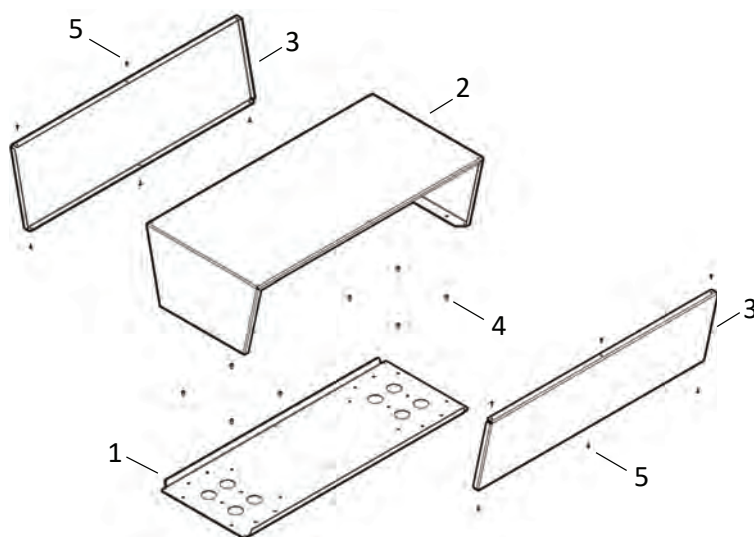
Figure 10.   Wide Spreader Panels

CX Wide Spreader Panels

Index	Part No.	Part Description
1	4G95129*	CX Wide Spreader Base Panel
2	4G95132*	CX Wide Spreader Top Panel
3	4G95133*	CX Wide Spreader Front Panel
4	5D00596	Screw M6 x 10 Button SKT HD S/S (x8)
5	(x16)	Screw 6G x 12 Self Tapper PAN S/S T305

CS Wide Spreader Panels

Index	Part No.	Part Description
1	4G95116*	CS Wide Spreader Base Panel
2	4G95118*	CS Wide Spreader Top Panel
3	4G95119*	CS Wide Spreader Front Panel
4	5D00596	Screw M6 x 10 Button SKT HD S/S (x8)
5	(x12)	Screw 6G x 12 Self Tapper PAN S/S T305

* Stipulate panel colour/decals when ordering.

LOWER CABINETS

CX Reduced Spreader HD Assembly (Part # 2A95456BK)
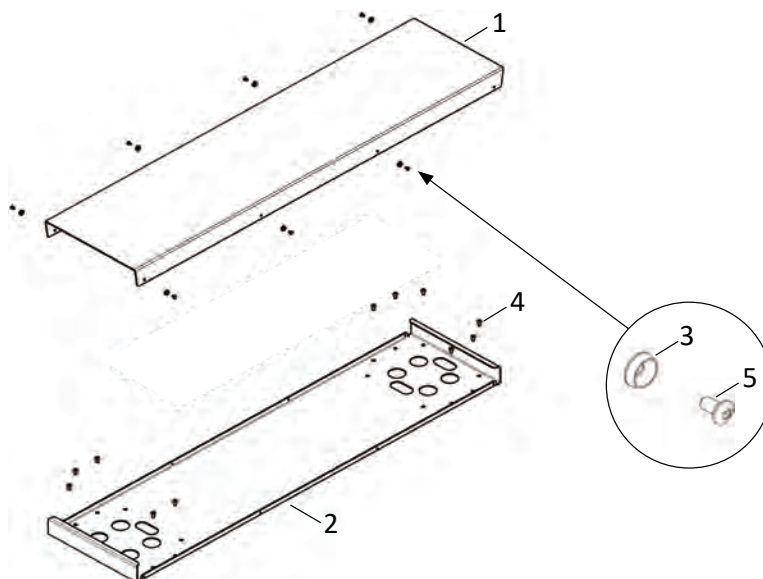
CS Reduced Spreader HD Assembly (Part # 2A95449BK)
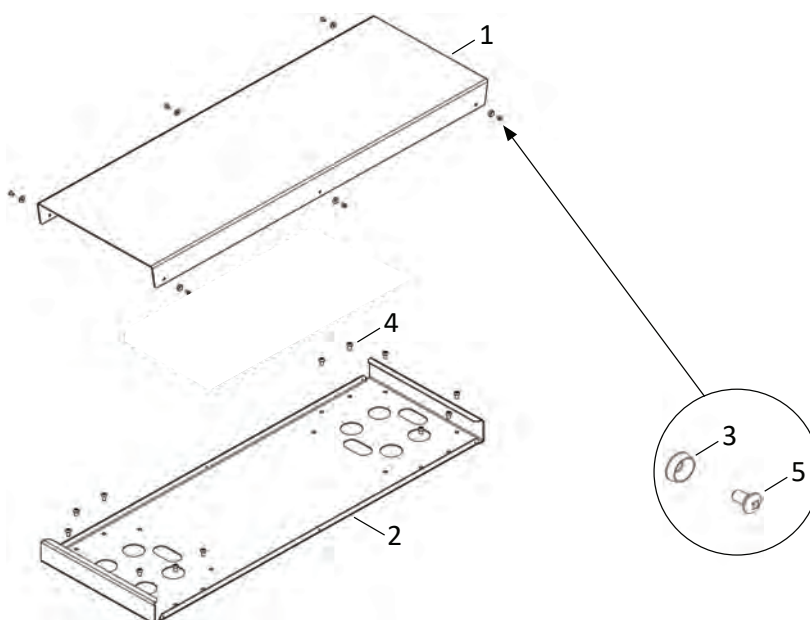
Figure 11.   Reduced Spreader Panels

CX Reduced Spreader Panels

Index	Part No.	Part Description
1	4G95437BK	CX Reduced Spreader Top Panel
2	4G95436BK	CX Reduced Spreader Base Panel
3	(x8)	Washer Cup 4mm Black Nylon
4	5D00596	Screw M6 x 10 Button SKT HD S/S (x12)
5	(x8)	Screw 8G x 3/8" 304 BLK CSK

CS Reduced Spreader Panels

Index	Part No.	Part Description
1	4G95441BK	CS Reduced Spreader Top Panel
2	4G95443BK	CS Reduced Spreader Base Panel
3	(x6)	Washer Cup 4mm Black Nylon
4	5D00596	Screw M6 x 10 Button SKT HD S/S (x12)
5	(x6)	Screw 8G x 3/8" 304 BLK CSK

LOWER CABINETS

2.2.2 Column Assembly (Part # 2A100147BK)

The C Series column assembly supports the spreader and is fixed to the upper column with dome nuts.
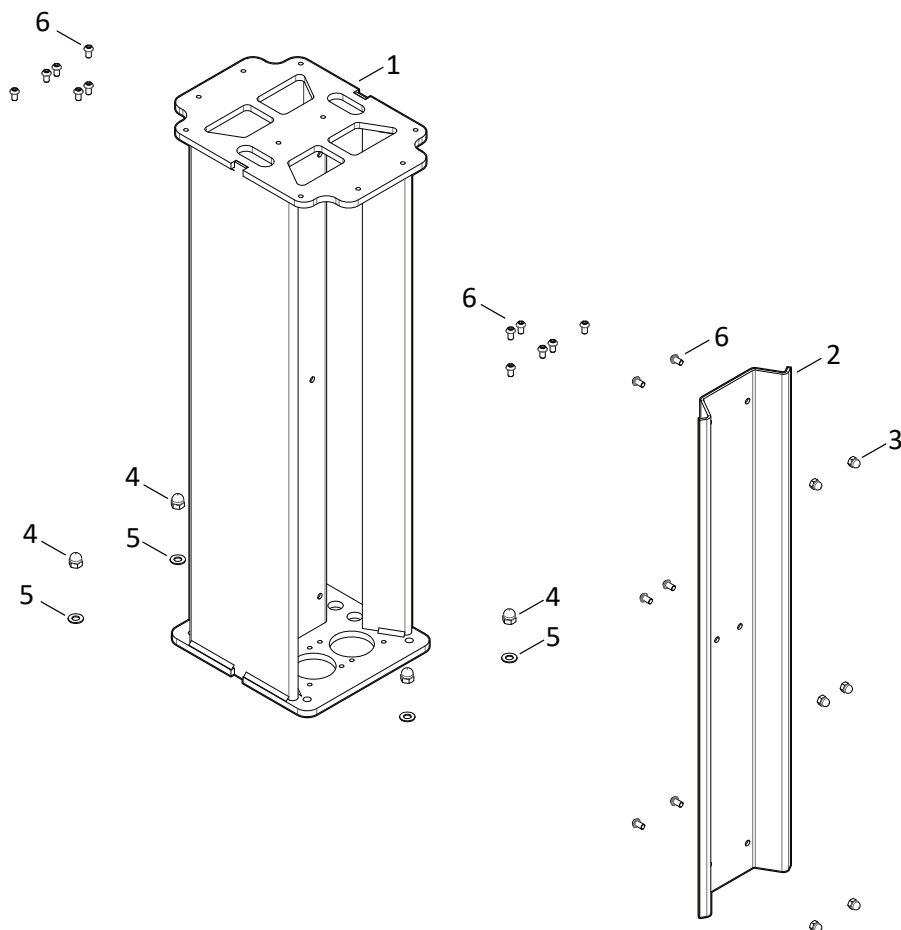
Figure 12.   C Series Column Assembly

Index	Part No.	Part Description
1	8A100143*	C Series Column Mk2
2	4G95123*	CX/CS Column Insert
3	(x6)	Nut M6 Dome S/S T304
4	(x4)	Nut M8 Dome S/S T304
5	(x4)	Washer M8 x 17 Flat S/S T316
6	(x18)	Screw M6 x 10 Button SKT HD S/S

* Stipulate panel colour/decals when ordering.

LOWER CABINETS

2.2.3 Holster Box Assembly (Part # 2A95150*)
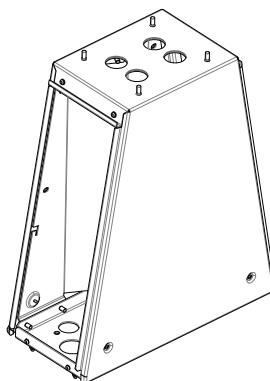
Index	Part No.	Part Description
1	2A95150*	Holster Box Asm

* Stipulate panel colour/decals when ordering.

Figure 13.   Holster Box Assembly

2.2.4 Holster Panel C Dual Variants

1   2   3
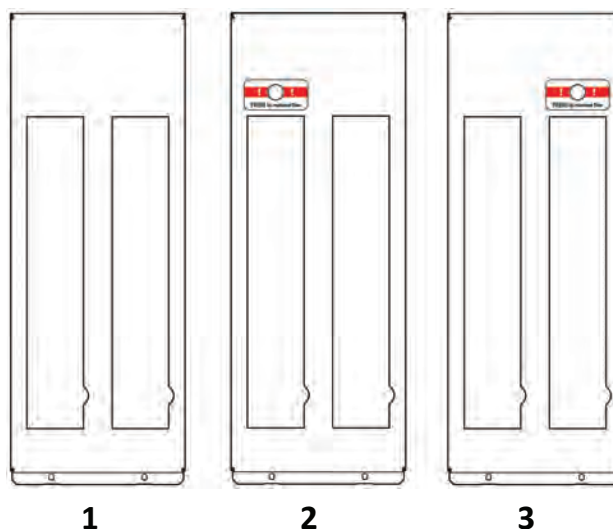
Index	Part No.	Part Description
1	P95104*	Holster Panel C Dual
2	P95104FBL*	Holster Panel C Dual FB Left
3	P95104FB*	Holster Panel C Dual FB Right

* Stipulate panel colour/decals when ordering.

Figure 14.   Holster Panel C Dual Variants

LOWER CABINETS

2.2.5 Holster Panel C Single Variants
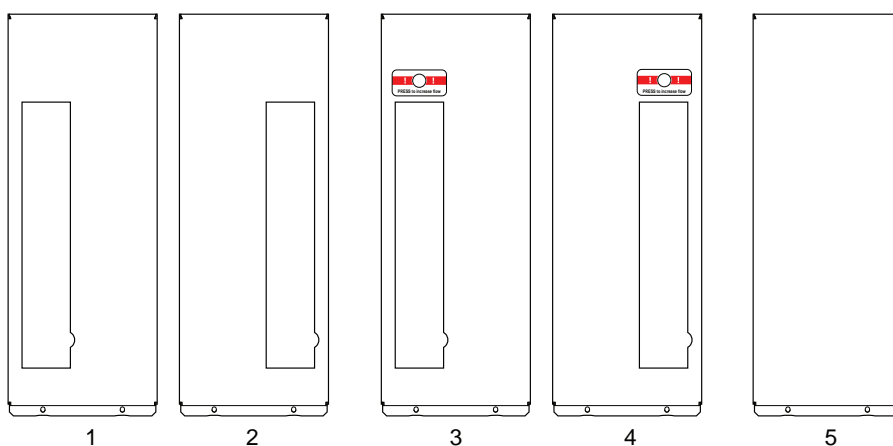
Index	Part No.	Part Description
1	P95166L*	Holster Panel C Single Left
2	P95169*	Holster Panel C Single Right
3	P95166FBL*	Holster Panel C Single Left with Fl Btn SP
4	P95169FBR*	Holster Panel C Single Right with Fl Btn SP
5	P95170*	Holster Panel C Blank

* Stipulate panel colour/decals when ordering.

Figure 15.   Holster Panel C Single Variants

2.2.6 Holster Panel C LPG Variants
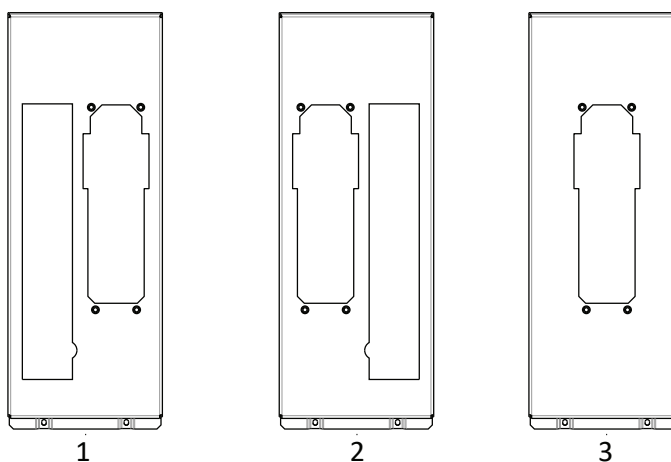
Index	Part No.	Part Description
1	2A95792*	Holster Asm C Dual LPG Front
2	2A95794*	Holster Asm C Dual LPG Rear
3	2A95780*	Holster Asm C Single LPG

* Stipulate panel colour/decals when ordering.

Figure 16.   Holster Assembly C LPG Variants

2.3 CS Q Series Column

Hose hanging options for CS Q Models include either a Flexi-Arm (as shown below), an extended Flexi-Arm or a mast/boom (not supplied by Gallagher) for which a longer delivery hose can be provided.

LOWER CABINETS

LOWER CABINETS
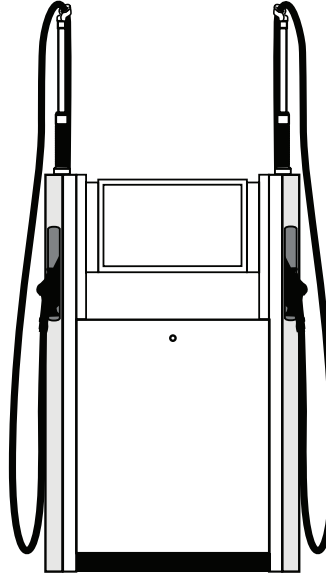
2.3.1 CS Q Columns - Single (Part # P95871*) Dual (Part # P95870*)
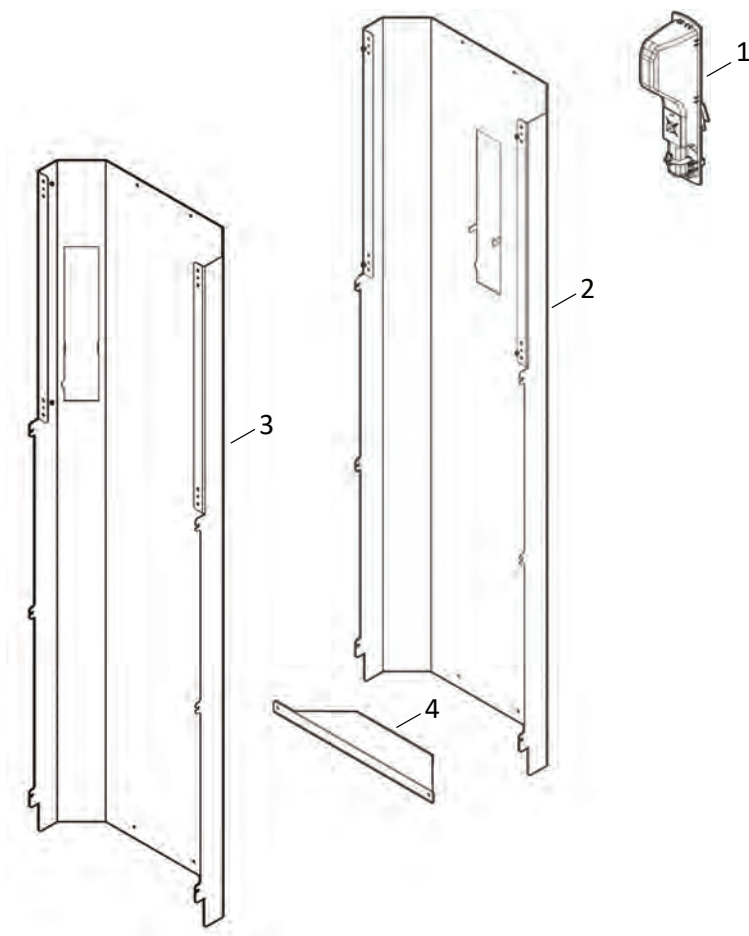
Figure 17.   CS Q Column Assemblies

Index	Part No.	Part Description
1	2A100331	PULSE Nozzle Holster Asm
Refer to "4.3 Holsters" on page 49 for holster variants		
2	P95871*	Column Single Hose Asm QS
3	P95870*	Column Dual Hose Asm QS
4.	4G95863	Column Bottom Bracket QS

* Stipulate panel colour/decals when ordering.

2.3.2 CS Q Inner Column Assemblies
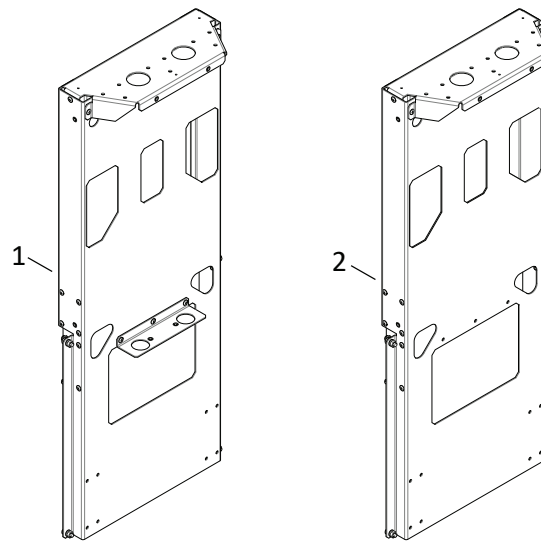
Figure 18.   CS Q Inner Column Assemblies

Index	Part No.	Part Description
1	2A95873	CS Q Inner Column Assembly
2	2A95879	CS Q Inner Column Assembly Ultra

2.3.3 QS Top Plates
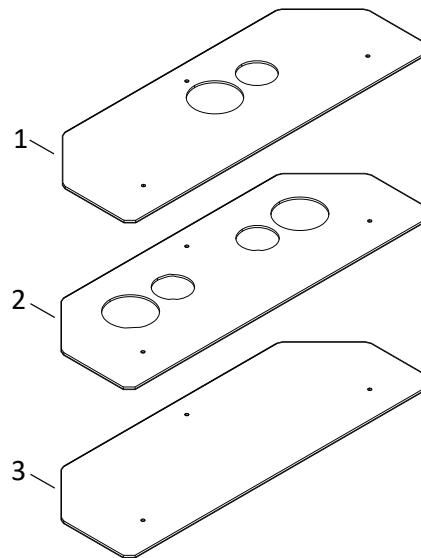
Figure 19.   QS Top Plates

Index	Part No.	Part Description
1	4G95859BK	QS Top Plate One Hose
2	4G95858BK	QS Top Plate Two Hose
3	4G101432	QS Top Plate Blank

LOWER CABINETS

2.3.4 CS Q Column and Head Support
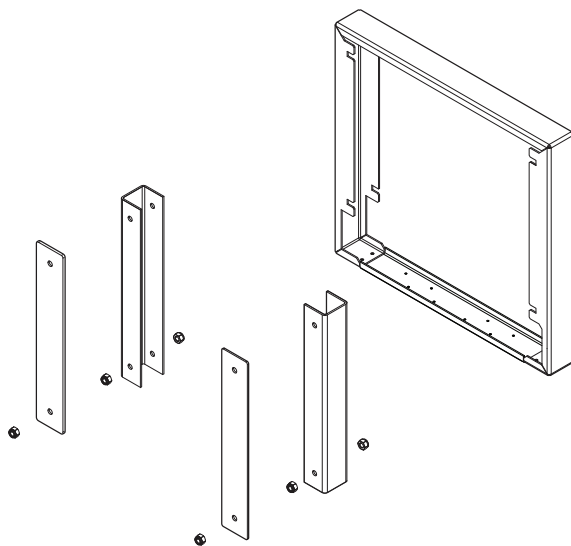
Figure 20.   QS Spacer Assembly (Part # 2A95874*)

* Stipulate panel colour/decals when ordering.
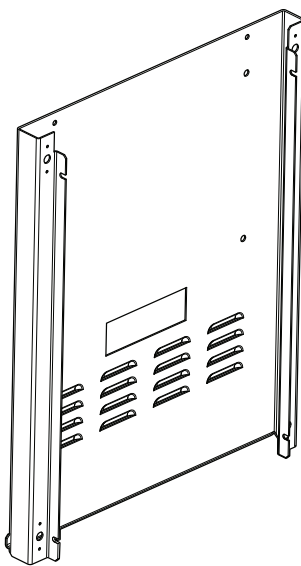
Figure 21.   QS Panel Assembly (Part # 2A95872WH)

3   HOSE ATTACHMENT KITS

Hanging/Retractor   Hanging/Retractor   Flexi-Arm
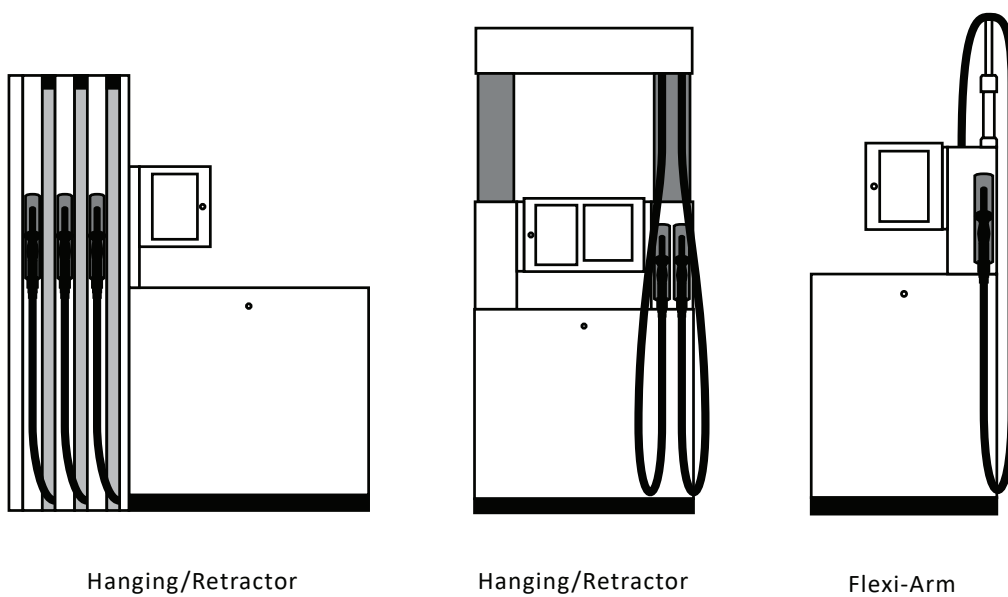
Figure 22.   Hose Attachment Options

HOSE ATTACHMENT KITS

3.1 Retractor Assembly Kit (Part # 2A95088) L Series

Springs are under tension when assembled in column.
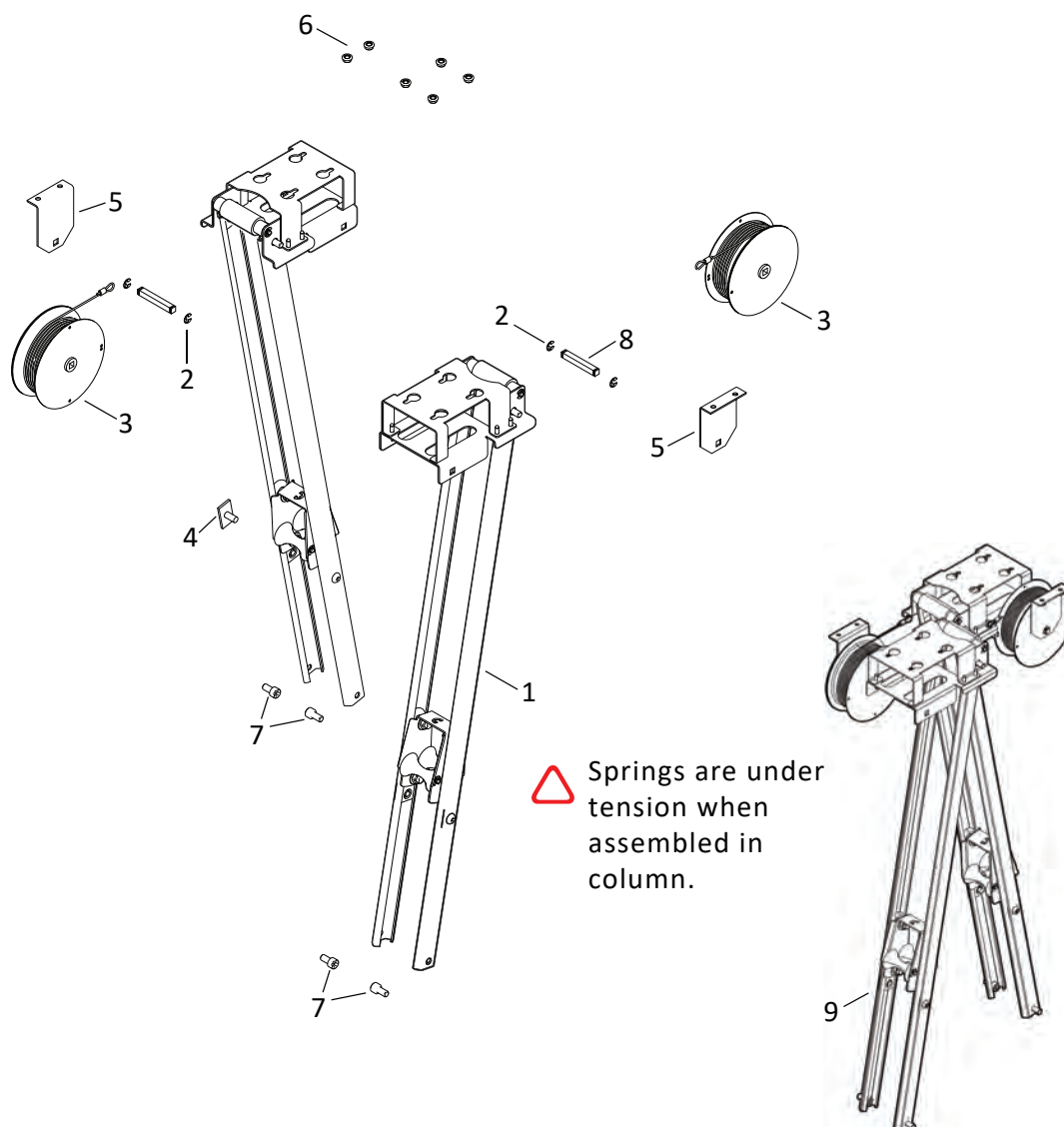
Figure 23.   Retractor Assembly Kit

Index	Part No.	Part Description
1	2A95018	Retractor Sub-Asm
2	4E06540	Clip E 5133/25 1/4 (E210)
3	4G00966	Reel Asm Metal 4" 1674 MR433E
4	4G92766	Module Fixing Plate
5	4G95049	Spring Half Plate
6	(x12)	Nut M6 Flange Serrated ZP
7	(x4)	Screw M8 x 16 Cap SKT HD
8	8A95056	Retractor Pin ZP
9	2A95088	1PD Retractor Asm L Series

3.1.1 Retractor Sub-Assembly Kit (Part # 2A95018) L Series I
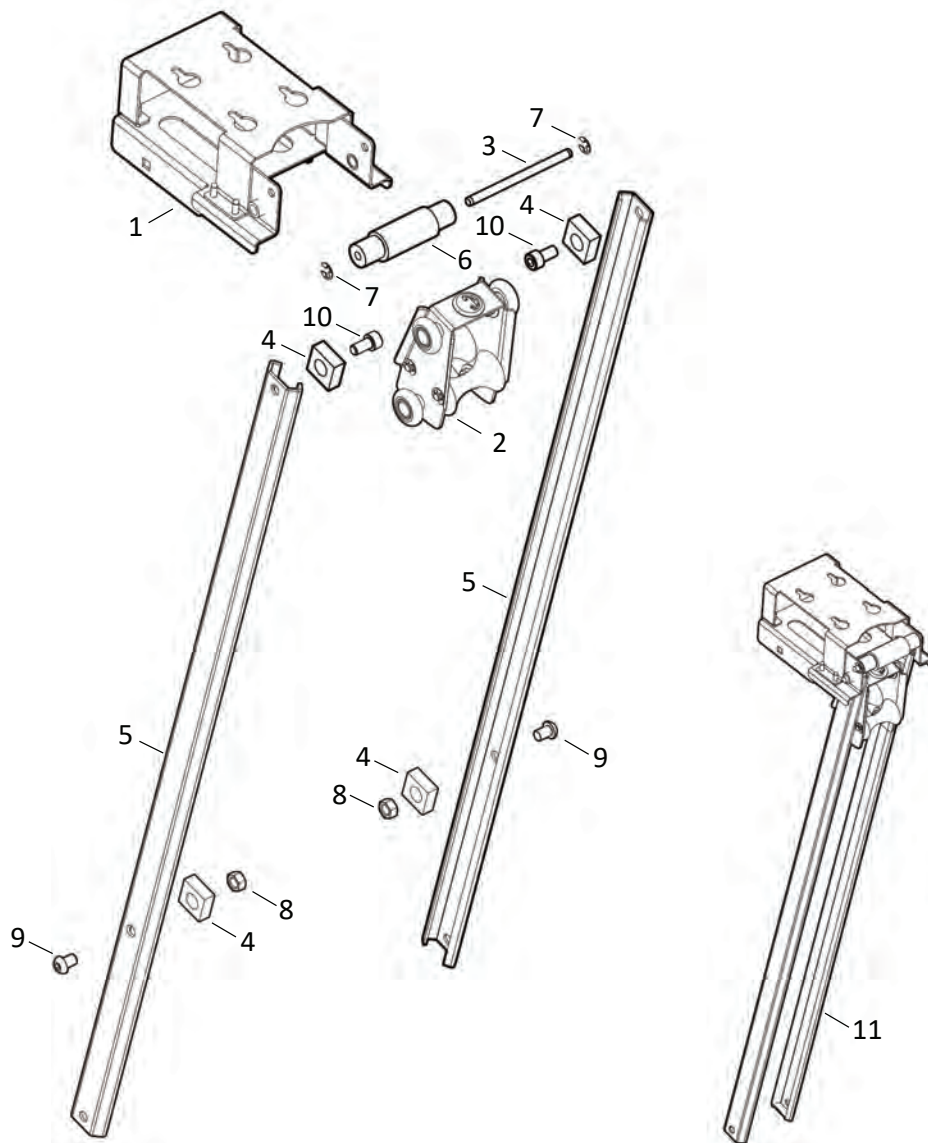
Figure 24.   Retractor Sub-Assembly Kit

Index	Part No.	Part Description
1	2A95015	Retractor Mount
2	2A95017	Hose Carriage Asm
3	8A95055	Guild Roller Pin ZP
4	4G95057	Stop Block Rubber
5	4G95059	Channel Runner
6	2A95757	Cable Roller L Series
7	4E06540	Clip E 5133/25 1/4 (E210)
8	(x2)	Nut M8 ZP
9	(x2)	Screw M8 x 12 Button SKT HD S/S
10	(x2)	Screw M8 x 16 Cap SKT HD
11	2A95018	Retractor Sub-Asm

3.2 Hose Mount Assemblies L Series

3.2.1 Hose Mount Assembly (Part # 2A100384)
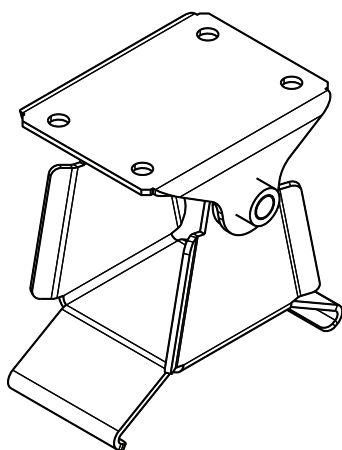
Kits are available for 1, 2, 3 and 4-Product models.

Part No.	Part Description
2A100453	1Pd Fixed Hose Asm L SII
2A100452	2Pd Fixed Hose Asm L SII
2A100451	3Pd Fixed Hose Asm L SII
2A100450	4Pd Fixed Hose Asm L SII

Figure 25.   Hose Mount Assembly

3.2.2 LPG Hose Mount Assembly (Part # 2A100381)
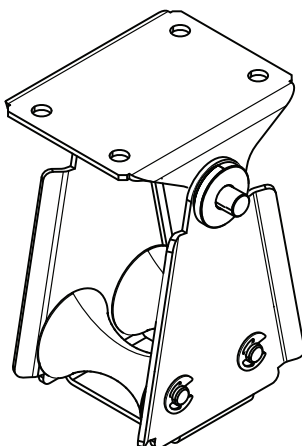
Figure 26.   LPG Hose Mount Assembly

3.3 PULSE L Series Hose Retractor Retrofit Kits Series II

These are supplied primarily as retrofit kits for converting a hanging hose to a retractor.

Instructions for their installation are contained in the **2A03845** Install Note Hose Retractor Retrofit and **2A01977** PULSE Series Installation, Commissioning and Servicing Manual.

⚠ Springs are under tension when assembled in column.

Part No.	Part Description
P100449	1 Product Retractor Kit

Part No.	Part Description
P100448	2 Product Retractor Kit

Part No.	Part Description
P100447	3 Product Retractor Kit

Part No.	Part Description
P100446	4 Product Retractor Kit

Index	Part No.	Part Description
1	2A100333	Retractor Sub-Asm
2	4G92766	Module Fixing Plate
3	(x8)	Nut M6 Flange Serrated ZP
4	(x2)	Nut M8 Flange Serrated ZP
5	(x4)	Screw M8 x 16 Cap SKT HD

Figure 27.   PULSE L Series Hose Retractor Kits

HOSE ATTACHMENT KITS

3.4 Flexi Spring Kit (Part # P83117)
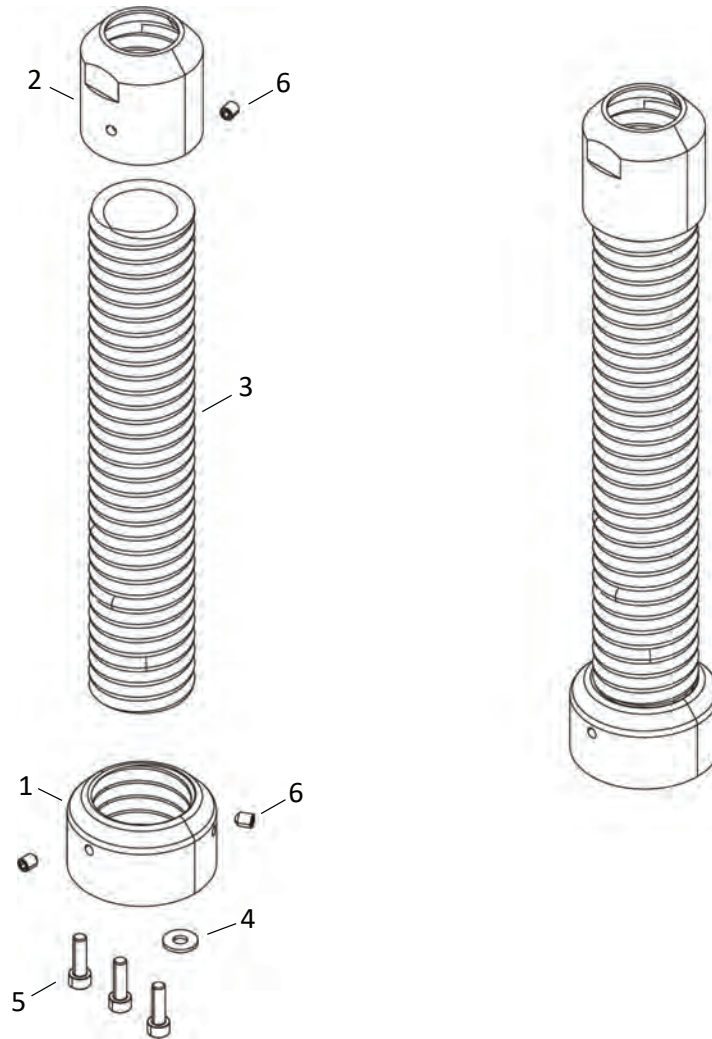
Figure 28.   Flexi Spring Kit

Index	Part No.	Part Description
1	4G87923	Spring Anchor Cap
2	4G87924	Spring Cap
3	4G87929	Pipe Spring
4	(x1)	Washer M6 Spring
5	(x3)	Screw M6 x 20 Cap SKT HD
6	(x3)	Grubscrew 1/4 x 1/4" HEX S/S T304

3.5 Hi-Arm Assembly 5/8" (Part # P83118)
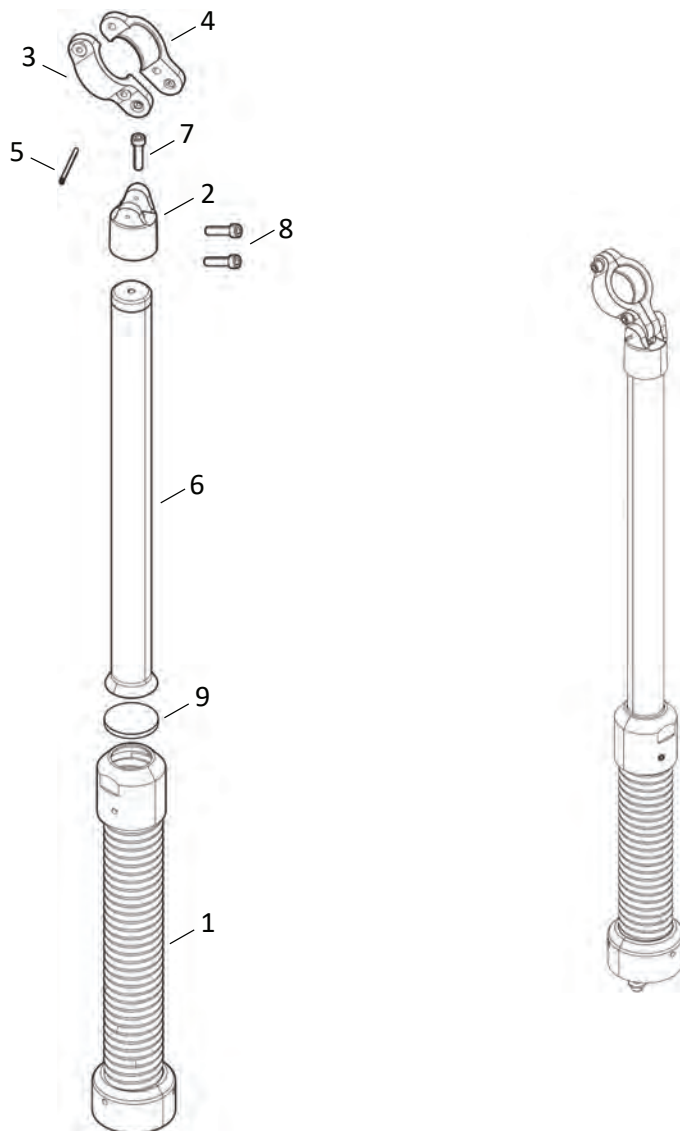
Figure 29.   Hi-Arm Assembly 5/8"

Index	Part No.	Part Description
1	P83117	Flexi Spring Kit
2	2A92782M	Hose Swivel Body Mk2
3	2A92783	Hose Clamp LH Mk2 (Thread)
4	2A92784	Hose Clamp RH Mk2 (No Thread)
5	4E06115	Cotter Pin 2.5 x 40mm
6	4G89871	Spring Extension
7	(x1)	Screw M6 x 25 Cap SKT HD S/S
8	(x2)	Screw 1/4 x 3/4" Cap SKT S/S
9	4G02075	Ceepec Flexi-Arm Spacer

HOSE ATTACHMENT KITS

3.6 Hi-Arm Assembly 1" (Part # P83116)

⚠ Springs are under tension when assembled in column.
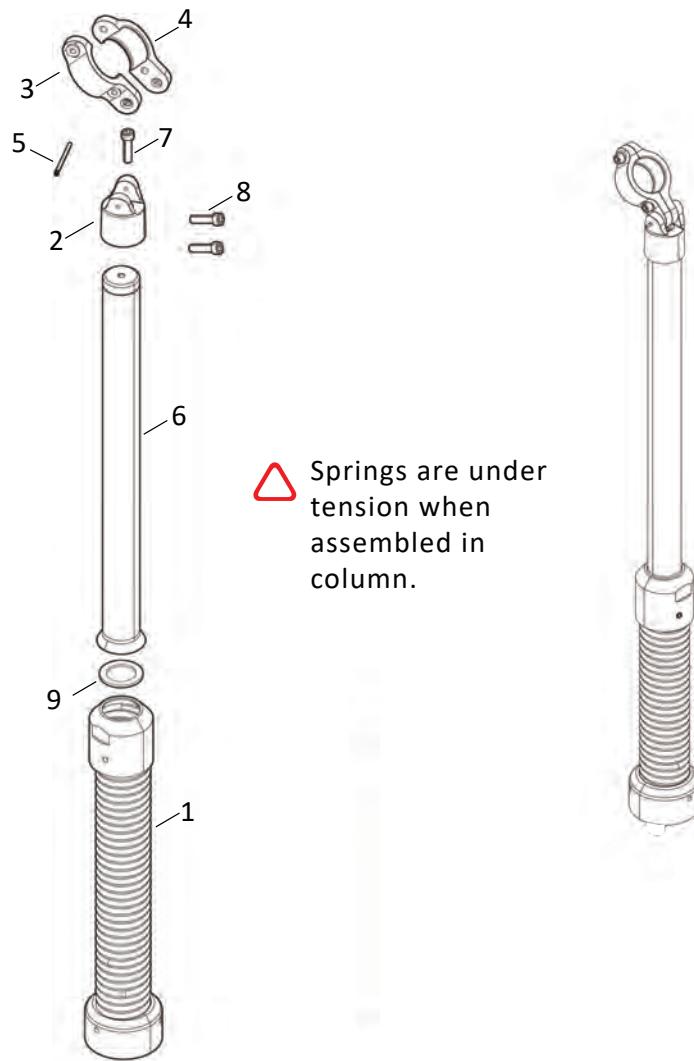
Figure 30.   Hi-Arm Assembly 1"

Index	Part No.	Part Description
1	P83117	Flexi Spring Kit
2	2A92782M	Hose Swivel Body Mk2
3	2A92783	Hose Clamp LH Mk2 (Thread)
4	2A92784	Hose Clamp RH Mk2 (No Thread)
5	4E06115	Cotter Pin 2.5 x 40mm

Index	Part No.	Part Description
6	4G89871	Spring Extension
7	(x1)	Screw M6 x 25 Cap SKT HD S/S
8	(x2)	Screw 1/4 x 3/4" Cap S/S
9	2A02955	Spacer Hi-Arm

3.7 Hi-Arm Ultra (Part # 2A83874)

⚠️ Springs are under tension when assembled in column.
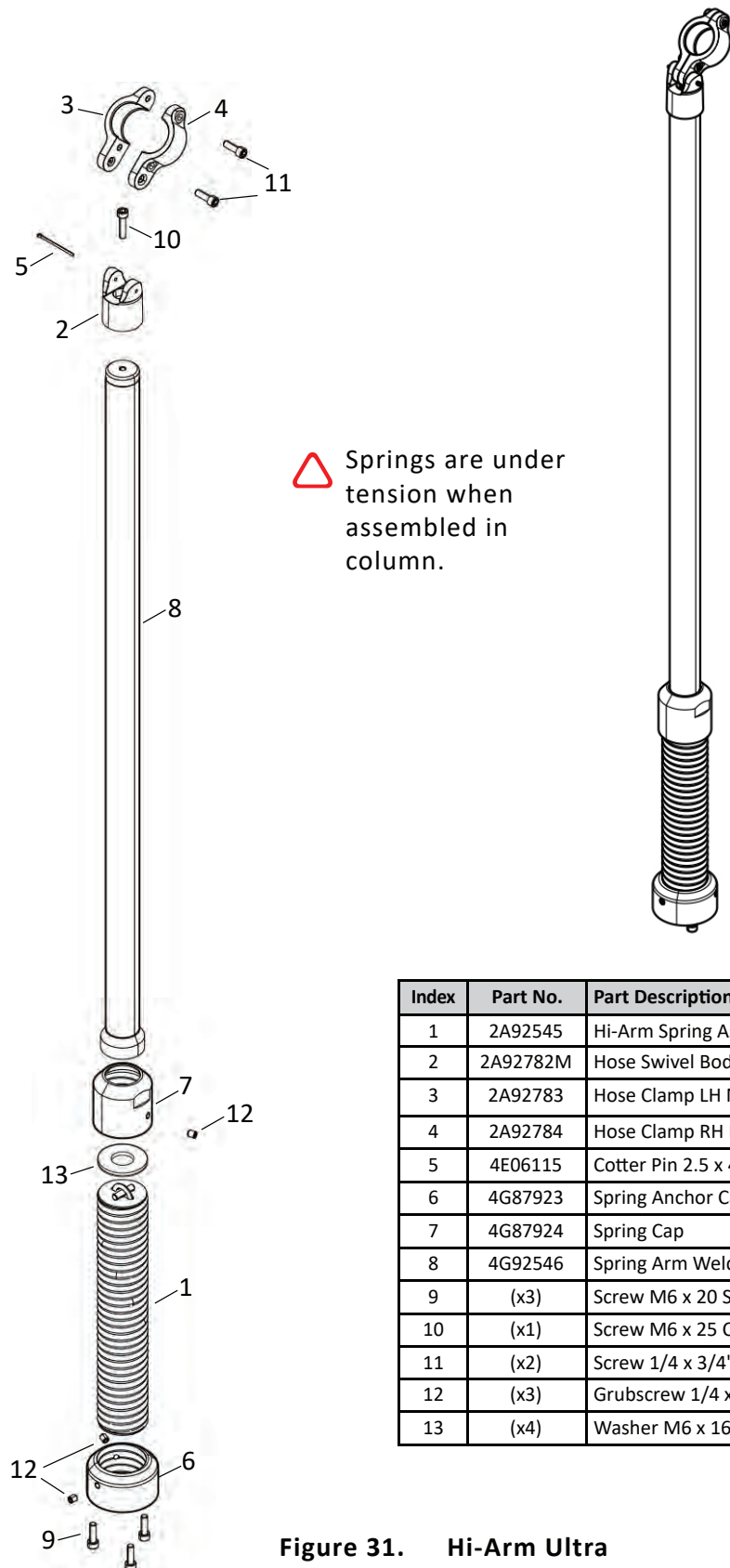
Index	Part No.	Part Description
1	2A92545	Hi-Arm Spring Asm
2	2A92782M	Hose Swivel Body Mk2
3	2A92783	Hose Clamp LH Mk2 (Thread)
4	2A92784	Hose Clamp RH Mk2 (No Thread)
5	4E06115	Cotter Pin 2.5 x 40mm
6	4G87923	Spring Anchor Cap
7	4G87924	Spring Cap
8	4G92546	Spring Arm Weld
9	(x3)	Screw M6 x 20 SKT HD
10	(x1)	Screw M6 x 25 Cap SKT HD S/S
11	(x2)	Screw 1/4 x 3/4" Cap SKT S/S
12	(x3)	Grubscrew 1/4 x 1/4" HEX T304
13	(x4)	Washer M6 x 16 Flat Steel

Figure 31.   Hi-Arm Ultra

HOSE ATTACHMENT KITS

3.8 Retractor Assembly C Series (Part # P95202)

⚠ Springs are under tension when assembled in column.
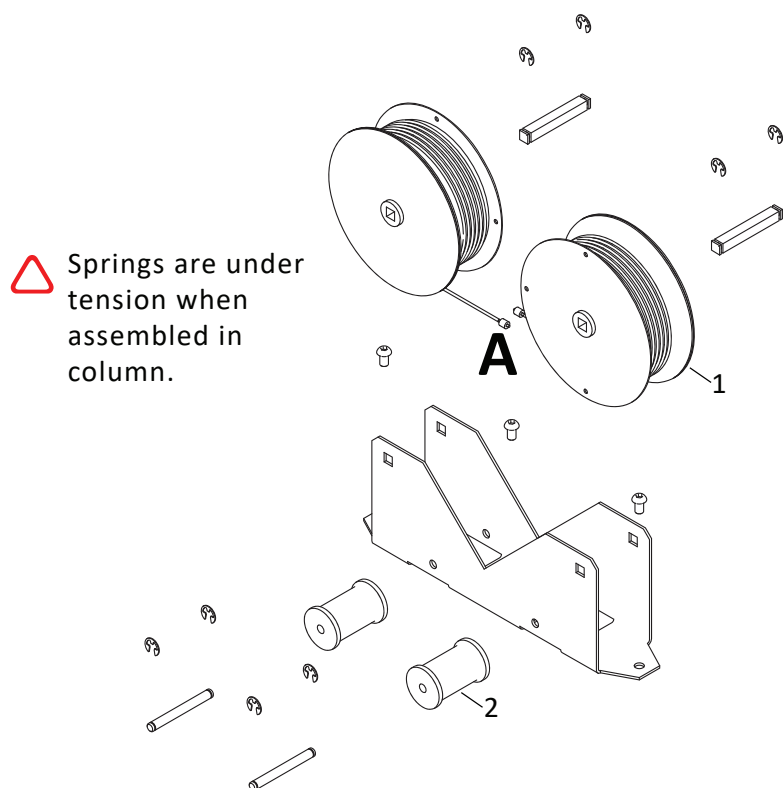
Figure 32.   Retractor Assembly C Series

Index	Part No.	Part Description
1	P95165	Retractor Reel Asm C Series Spare
2	2A03133	Retractor Cable Roller C Series

Attaching a cable end to the plastic holder

attach cable retainer

Insert cable end into and through plastic holder
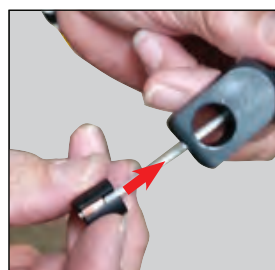
Insert cable retainer into plastic holder

A

Cable from reel
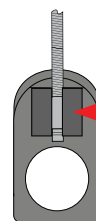
cable retainer

Plastic holder
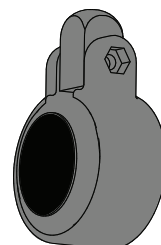
Hose Clamp

Index	Part No.	Part Description
1	4G02146	Hose Clamp BP 1398 16mm
2	4G02147	Hose Clamp BP-1396-00 Retractor 21mm
3	4G04429	Plastic Holder BP-1394/04

3.9 PULSE C Spreader Fixed Hose Attachment

Anchor Assembly (Part # P03442)
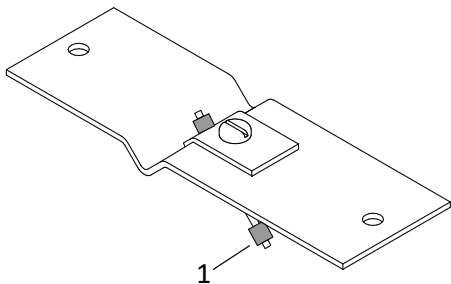
The fixed anchor plate is supplied attached to the inside of the spreader.

Index	Part No.	Part Description
1	2A03135	Connector Asm

Figure 33.   C Spreader Hose Anchor Assembly

Hose Clamp Assembly

anchor point
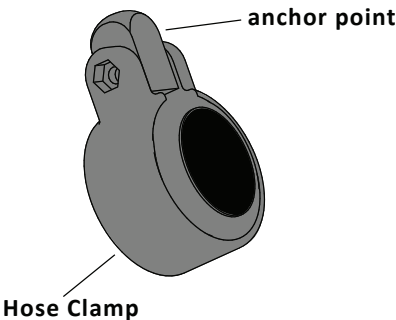
Hose Clamp

The hose clamp is supplied on a new dispenser in two parts. The anchor point is attached to the Connector Assembly (Part # 2A03135), as shown above. The clamp is attached to the hose. Includes M5 nut and screw, not shown in diagram.

Index	Part No.	Part Description
1	4G02146	Hose Clamp BP 1398 16mm
2	4G02147	Hose Clamp BP-1396-00 Retractor 21mm

Figure 34.   C Spreader Hose Clamp Assembly

NOTE: When required, the two parts shown below may be ordered individually.

Anchor Point

1

2
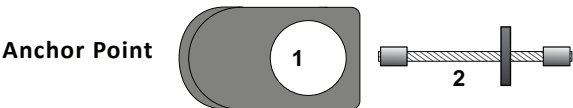
Index	Part No.	Part Description
1	4G04429	Plastic Holder BP-1394/04
2	2A03135	Connector Asm

HOSE ATTACHMENT KITS

HOSE ATTACHMENT KITS

3.10 PULSE Swivel Assembly CS/CX (Part # P95168)
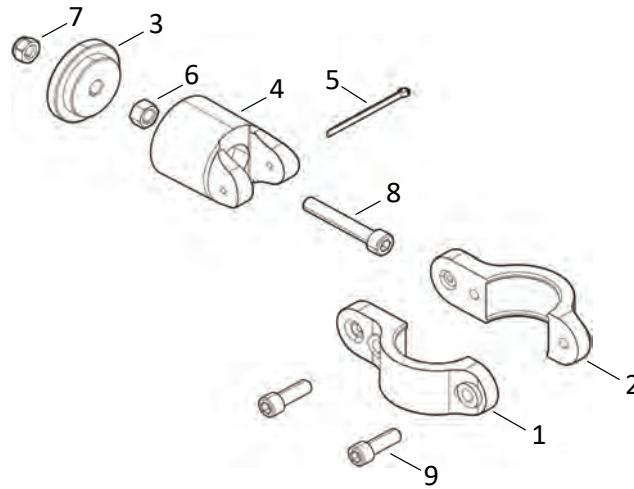
Figure 35.   Swivel Assembly CX/CS

Index	Part No.	Part Description
1	2A92783	Hose Clamp LH Mk2 (Thread)
2	2A92784	Hose Clamp RH Mk2 (No Thread)
3	2A95167	CS/CX Boss Swivel
4	2A95822	Hose Swivel Body PULSE
5	4E06115	Cotter Pin 2.5 x 40mm
6	(x1)	Nut M6 ZP
7	(x1)	Nut M6 Nyloc
8	(x1)	Screw M6 x 40 Cap SKT HD S/S
9	(x2)	Screw 1/4 x 3/4" Cap SKT S/S

3.11 CS/CX Hose Plates
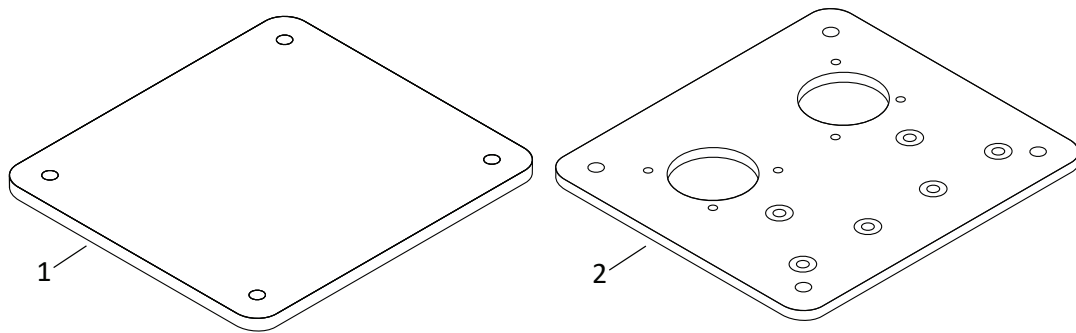
Figure 36.   CS/CX Hose Plates

Index	Part No.	Part Description
1	8A95447BK	CS/CX Blank Plate
2	8A95204BK	CS/CX Spring Plate Countersunk

4 HANGING HARDWARE

4.1 Hoses

The PULSE Series has a range of hoses available to suit the dispenser, the site environment and the product being dispensed. Hoses are available for the following products:

- Standard Flow (Petrol/Diesel)
- High Flow Diesel
- ULTRA Diesel
- LPG
- DEF

Hoses differ from the L to the C Series. Hanging and Retractor hose attachment options are available for both. The Flexi hose attachment option is only available for the C series.

Hoses are supplied with fittings attached and some accessories are available as individual spare parts (e.g. swivels and clamps).

This section lists the hoses available for the L and the C Series, including related spare parts and accessories.

NOTE:

Each hose has a unique serial number and part number located at the base of the nozzle underneath the break cover. This is useful in the event of re-ordering that particular hose.

Break Cover

Serial Number
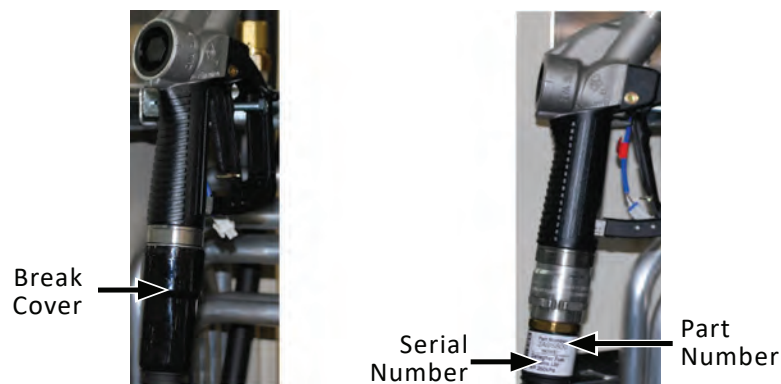
Part Number

Figure 37.   Location of hose serial and part numbers

HOSE ATTACHMENT KITS

HOSE ATTACHMENT KITS

4.1.1 C Series Hoses

Product	Description (including hose attachment type)	Part No.
Petrol or Diesel	Hose Asm PULSE C 16mm Std Fixed	2A95803
Petrol or Diesel	Hose Asm PULSE C 16mm Std Ret/Fix	2A95803R
Petrol or Diesel	Hose Asm PULSE C 16mm Std Flexi	2A95808
Diesel	Hose Asm PULSE C 21mm Std/Ultra Fixed	2A95804
Diesel	Hose Asm PULSE C 21mm Std/Ultra Ret/Fix	2A95804R
Diesel	Hose Asm PULSE C 21mm Std/Ultra Flexi	2A95809
LPG	Hose Asm PULSE C LPG Delivery	8A100022
LPG	Hose Asm PULSE C LPG 16S Supply	8A95784
LPG	Hose Asm PULSE C LPG 16S Delivery Mk2	8A95785
LPG	Hose Asm PULSE C LPG Internal	2A100024
VR	Hose Asm PULSE C 21mm VR Fixed	P95805
VR	Hose Asm PULSE C 21mm VR Ret/Fix	P95805R
VR	Hose Asm PULSE C 21mm VR Flexi	P95810
VR	Hose Asm PULSE C VR Ret/Fix Internal	P95805INT
DEF	Hose Asm PULSE C 16mm DEF Flexi	2A95808D
DEF	Hose Asm PULSE C 16mm DEF Extended	2A95803DE
DEF	Hose Asm PULSE C 16mm DEF Ret/Fix	2A95803DR

4.1.2 C Series LPG Hoses

Hose Assembly PULSE C LPG Internal (Part # 2A100024)
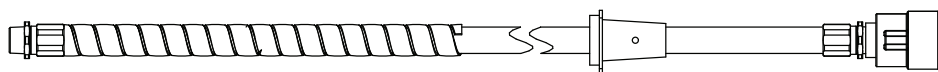
Figure 121.   Hose Assembly PULSE C LPG Internal

Hose Assembly PULSE C LPG Delivery Mk2 (Part # 2A100076)
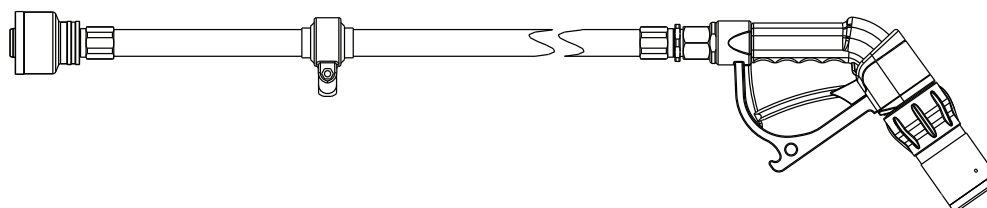
Figure 122.   Hose Assembly PULSE C LPG Delivery Mk2

4.1.3 L Series Hoses

Product	Description (including hose attachment type)	Part No.
Petrol or Diesel	Hose Asm PULSE L 16mm Std Fixed	2A95800
Petrol or Diesel	Hose Asm PULSE L 16mm Std Retract	2A95800R
Petrol or Diesel	Hose Asm PULSE L 25mm Std Retract	2A95801R
Petrol or Diesel	Hose Asm PULSE L 16mm Std Fixed ESB	2A95800E
Petrol or Diesel	Hose Asm PULSE L 16mm Std Retract ESB	2A95800RE
Diesel	Hose Asm PULSE L 25mm Std/Ultra Fixed	2A95801
Diesel	Hose Asm PULSE L 25mm Std Fixed ESB	2A95801E
Diesel	Hose Asm PULSE L 25mm Std Retract ESB	2A95801RE
LPG	Hose Asm PULSE L LPG Supply	4G95830
LPG	Hose Asm PULSE L LPG Delivery	4G95831
VR	Hose Asm PULSE L 21mm VR Fixed	P95802
VR	Hose Asm PULSE L 21mm VR Retract	P95802R
VR	Hose Asm PULSE L 21mm VR Fixed Internal	P95802INT
VR	Hose Asm PULSE L 21mm VR Retract Internal	P95802RINT
DEF	Hose Asm PULSE L 16mm DEF	2A95800D

4.1.4 Q Series Hoses

Product	Description (including hose attachment type)	Part No.
Petrol or Diesel	Hose Asm PULSE Q 16mm Std Flexi	2A02491
Petrol or Diesel	Hose Asm PULSE Q 16mm Std Extend	2A100069S
Ultra	Hose Asm PULSE Q 25mm Std/Ultra Flexi	2A100068
Ultra	Hose Asm PULSE Q 25mm Std/Ultra Extend	2A100069
DEF	Hose Asm PULSE Q 16mm DEF Flexi	2A02491D
DEF	Hose Asm PULSE Q 16mm DEF Extend	2A100069D

HOSE ATTACHMENT KITS

HOSE ATTACHMENT KITS

4.2 Nozzles

All nozzles must be purchased with a swivel.

There are various safety shut-off breaks and nozzle combinations that are supplied as an assembly. Most safety shut-off breaks are fitted at the end of the nozzle. In some cases they are mounted within the column, for example with the LPG dispenser.

Safety shut off breaks and accessories such as splashguards and product badges are available as spare parts. All nozzles, accessories and their respective part numbers are described in this section.

4.2.1 Accessories

Splashguards and covers are available in various colours on request.

Product Badge

ZVA Cover

Splashguard Teardrop

Part No.	Part Description
4G00074	ZVA Product Badge EK 145/0
4G30300	ZVA Cover II Black EK 044
4G30301	ZVA Cover II Red EK 044
4G30302	ZVA Cover II Green EK 044
4G30303	ZVA Cover II Yellow EK 044
4G30304	ZVA Cover II Blue EK 044
4G30306	ZVA Cover II L/Blue P298 EK 044
4G30307	ZVA Cover II Orange EK 044
2A30200TD	ZVA Splashguard II Black EK 652 Teardrop
2A30201TD	ZVA Splashguard II Red EK 652 Teardrop
2A30202TD	ZVA Splashguard II Green EK 652 Teardrop
2A30203TD	ZVA Splashguard II Yellow EK 652 Teardrop
2A30204TD	ZVA Splashguard II Blue EK 652 Teardrop
2A30206TD	ZVA Splashguard II L/Blue P298 EK 652 Teardrop
2A30207TD	ZVA Splashguard II Orange EK 652 Teardrop
2A30208TD	ZVA Splashguard II Silver EK 652 Teardrop
2A30209TD	ZVA Splashguard II Gold EK 652 Teardrop
2A30210TD	ZVA Splashguard II D/Blue P654 EK 652 Teardrop
2A30211TD	ZVA Splashguard II Purple EK 652 Teardrop

+Blue Spares

Part No.	Description
2A30204TD	ZVA Splashguard II Blue EK 652 Teardrop
4G00064	ZVA Plastic Cover Blue EK 144

Nozzle Options

PETROL

P00580AUSS
Nozzle 3/4 R ZVA2
3M.1 SSB16.1

DIESEL

P00590NZS
Nozzle 3/4 ZVA2 TMV
3M.1 SSB16.1

DIESEL

P00585AUSS
Nozzle 3/4 Std ZVA2
3M.1 SSB16.1

DIESEL

2A00581SD
Nozzle 25mm ZVA
3M.1 SSB16.1

LPG

P21150
LPG Nozzle GG1DNS
Gas Guard

VR2

P90765NZ
VR2 ZVA2 Nozzle GRV 3M
On Off CSB21

DEF

2A00582SD
Nozzle DEF ZVA 3M.0
SSB16SS Delatching

LPG

P21150L
LPG Nozzle GG1DNS
Gas Guard c/w Latch

Figure 38.   Nozzle Options

Product	Part Description	Part No.
Petrol	Nozzle 3/4 R ZVA2 3M.1 SSB16.1 (**shown**)	P00580AUSS
Petrol	Nozzle 3/4 R ZVA2 3M.1 SSB16.1 (not shown)	P00580NZS
Diesel	Nozzle 3/4 ZVA2 TMV 3M.1 SSB16.1 (**shown**)	P00590NZS
Diesel	Nozzle 3/4 ZVA2 TMV 3M.1 SSB16.1 (not shown)	P00590AUSS
Diesel	Nozzle 3/4 STD ZVA2 3M.1 SSB16.1 (**shown**)	P00585AUSS
Diesel	Nozzle 3/4 STD ZVA2 3M.1 SSB16.1 (not shown)	P00585NZS
Diesel	Nozzle 25mm ZVA 3M.1 SSB16.1 Delatching (**shown**)	2A00581SD
Diesel	Nozzle 25mm ZVA 3M.1 SSB16.1 (not shown)	4G00581S
LPG	LPG Nozzle GG1DNS Gas Guard (**shown**)	P21150
LPG	LPG Nozzle GG1DNS Gas Guard c/w Latch (**shown**)	P21150L
DEF	Nozzle DEF ZVA 3M.0 SSB16SS Delatching (**shown**)	2A00582SD
DEF	Nozzle DEF ZVA 3M.0 SSB16SS Delatch	P00582SD
VR	VR2 ZVA2 Nozzle GRV 3M On Off CSB21 (**shown**)	P90765NZ
VR	VR2 ZVA2 Nozzle GRV 3M On Off CSB21 (not shown)	P90765

AUSS = straight safety break fitted
NZSS = straight safety break fitted

With the exception of the 1" diesel (where it is optional) Australian
nozzles (AU) do not have delatching plates fitted.

TMV = drip stop

HOSE ATTACHMENT KITS

4.2.2 Safety Breaks

Safety Swivel Breaks (SSB) are available for 25mm (1") and 16mm (5/8") hose.

LPG dispensers require a specific safety break.

NB: Elbow Swivel Breaks (ESB 16.1) are no longer available.

Figure 39.   Safety Breaks

Index	Part No.	Description
1	4G29455	SSB 16.1 Swivel Nozzle Break and Cover
2	4G00076	ZVA Reducing Bush M42 x M34 EG 371
3	4V90600	VR2 CSB21 Nozzle Break and BS21 Cover
4	4G03766	SSB 25.1 AS Nozzle Break and Cover
5	4G29456	SSB 16 SS DEF Nozzle Break and Cover

4.2.3 Fixed Break LPG PULSE (Part # 2A95292)

The Elaflex ARK19.3 LPG safety break is attached to the column with a lanyard, U-bolt, nuts, flat washers and spring washers.
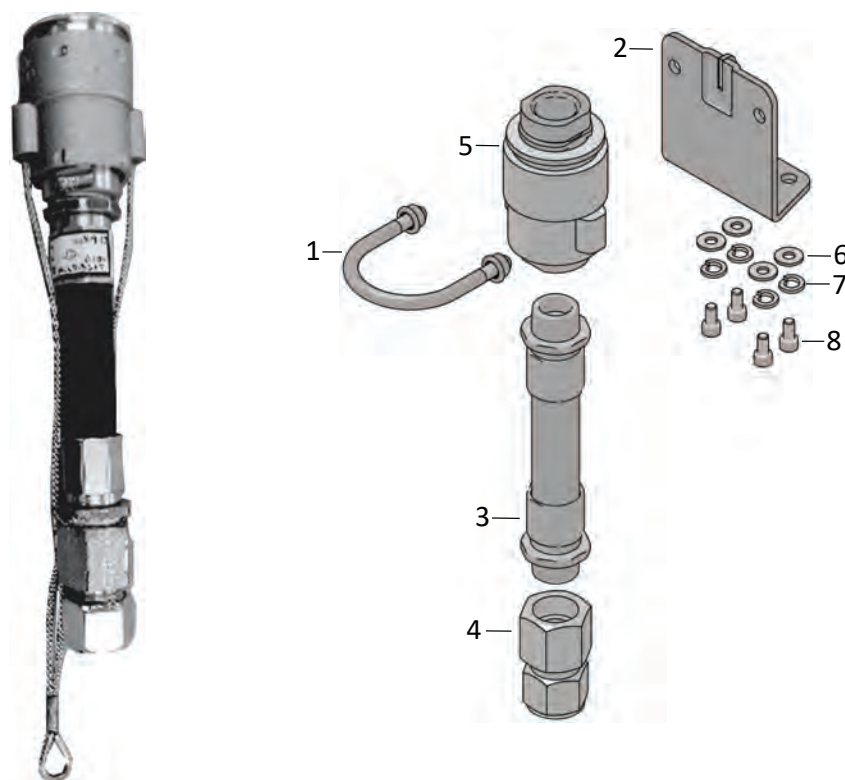
LPG Lanyard Top Fixing

Figure 40.   LPG Fixed Break

Item	Part No.	Description
1	8A95273	U-Bolt LPG PULSE Plated
2	4G95276BK	Vertical Mount Weld LPG PULSE
3	4G95830	Hose Asm PULSE L LPG Supply
4	4G02255	Connector Flareless to NPT Female
5	4G21160	Safety Break LPG ARK 19.3 with BS 19
6	(x4)	Washer M6 x 16 Flat Steel
7	(x4)	Washer M6 Spring
8	(x4)	Screw M6 x 12 Cap ZP

HOSE ATTACHMENT KITS

4.2.4 Retractor Break LPG PULSE (Part # 2A95291)
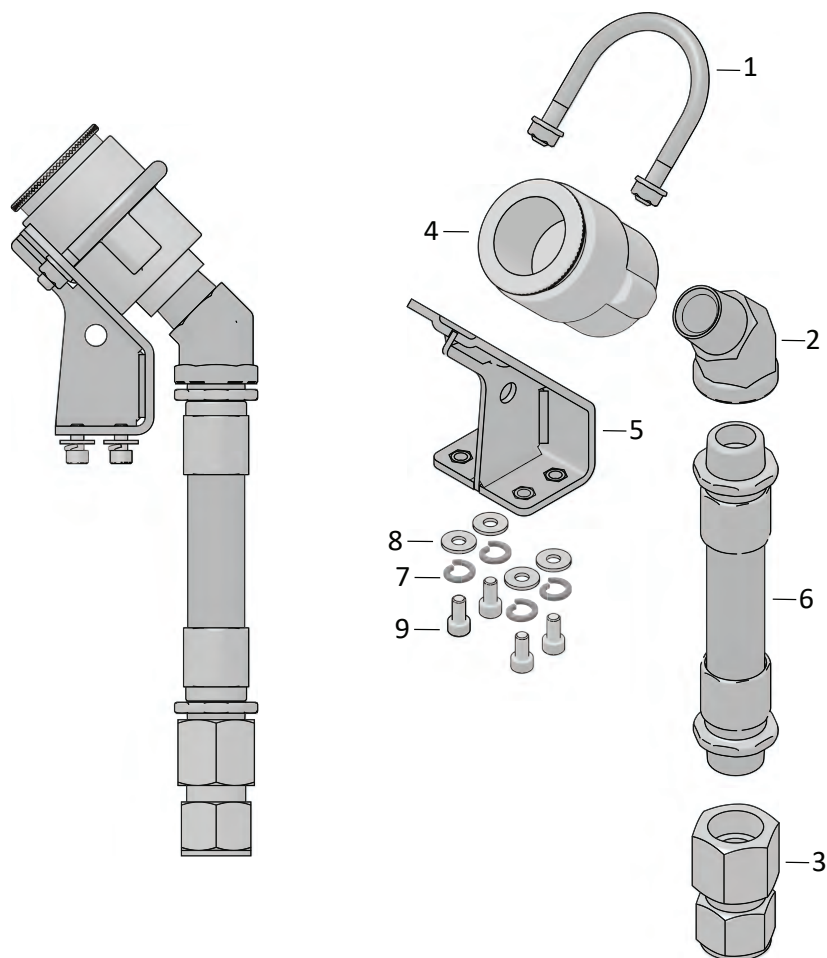
Figure 41.   LPG Retractor Break

Item	Part No.	Description
1	4G06743	U-Bolt LPG PULSE Plated
2	4G02254	Elbow 3/4" NPT M/F 45
3	4G02255	Connector Flareless to NPT Female
4	4G21160	Safety Break LPG ARK 19.3 with BS 19
5	4G95279BK	Angle Mount Weld LPG PULSE
6	4G95830	Hose Asm PULSE L LPG Supply
7	(x4)	Washer M6 Spring
8	(x4)	Washer M6 x 16 Flat Steel
9	(x4)	Screw M6 x 12 Cap ZP

4.3 Holsters

PULSE petrol and diesel dispensers use the same holster. Diesel holsters are supplied with a grade confirmation latch fitted. LPG dispensers require a specific holster to fit the dedicated LPG Nozzle. Holsters can consist of the following parts:

- Holster   • Magnetic Switch   • Lock (optional)
- Confirmation Latch (available in yellow, blue, orange on request)
- Labels and Decals (available on request)
- Washers, Nuts and Screws (supplied with the parts)

HOSE ATTACHMENT KITS
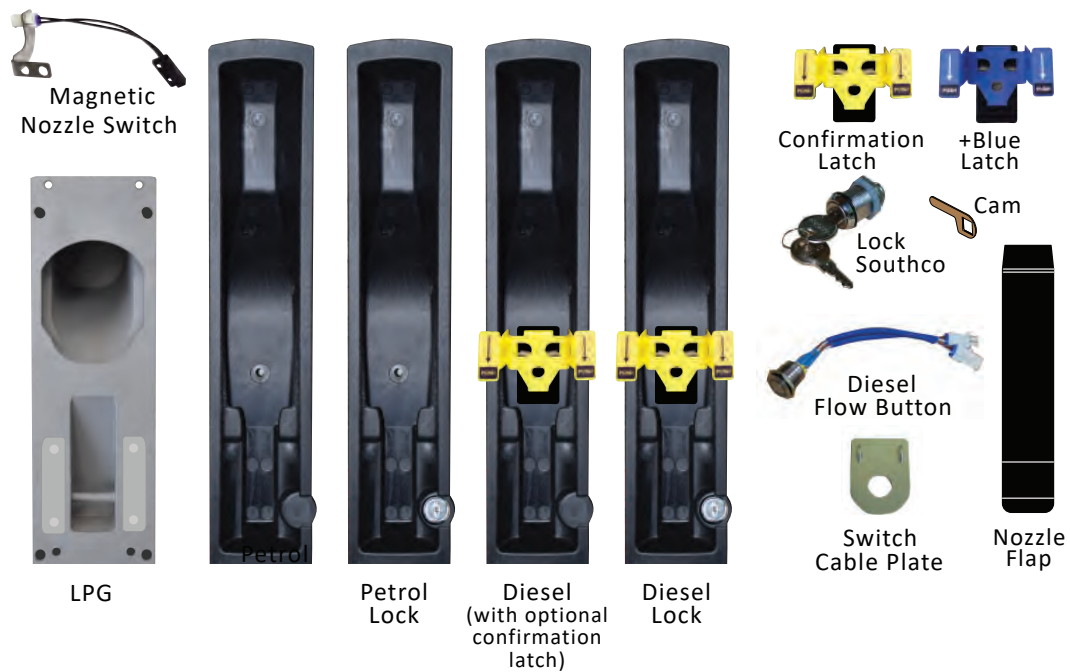
Part No.	Description
2A00794	Cable Asm Nozzle Switch Magnetic
4G00810	Lock Southco SOUCM-2-2C101-2SB
4G95096	Holster Cam (for Cam Lock)
P02085	PULSE Diesel Flow Button Asm L Std
4G95727	Switch Cable Plate
P100251BL	PULSE Grade Confirmation Latch Blue
P100251OR	PULSE Grade Confirmation Latch Orange
P100251RD	PULSE Grade Confirmation Latch Red
P100251YE	PULSE Grade Confirmation Latch Yellow
2A100250	PULSE Nozzle Holster Asm LPG NB GG
P100331	PULSE Nozzle Holster Asm
P100331BL	PULSE Nozzle Holster Asm BL Latch
P100331BLLL	PULSE Nozzle Holster Asm BL Latch/Lock

Part No.	Description
P100331C	PULSE Nozzle Holster Asm C
P100331CL	PULSE Nozzle Holster Asm C c/w Lock
P100331CYE	PULSE Nozzle Holster Asm C Ye Latch
P100331CYELL	PULSE Nozzle Holster Asm C Ye Latch/Lock
P100331L	PULSE Nozzle Holster Asm c/w Lock
P100331OR	PULSE Nozzle Holster Asm Or Latch
P100331ORLL	PULSE Nozzle Holster Asm Or Latch/Lock
P100331RD	PULSE Nozzle Holster Asm Rd Latch
P100331RDLL	PULSE Nozzle Holster Asm Rd Latch/Lock
P100331YE	PULSE Nozzle Holster Asm Ye Latch
P100331YELL	PULSE Nozzle Holster Asm Ye Latch/Lock
P03277BK	PULSE Grade Confirmation Flap Black
4G02318	PULSE Holster Drill Jig

Figure 42.   Holster Options

NOTE: The PULSE Nozzle Holster LPG Asm 2A95293 is no longer available. Should a replacement be required it will be necessary to order both a 2A100250 LPG Nozzle Asm and a 2A100504WH Holster Panel Asm. This is because the new holster cannot be used with the old panel.

HYDRAULIC COMPONENTS

5 HYDRAULIC COMPONENTS

This section describes stack variants presently found in the PULSE range. It also describes some of the main components such as meters and pumps.

The following stacks and their sub assemblies are described in this section:

- DEF
- Pump
- Dispenser
- Ultra Dispenser
- Ultra Pump (Bennett)
- LPG
- Nested (top and bottom)

5.1 Stacks
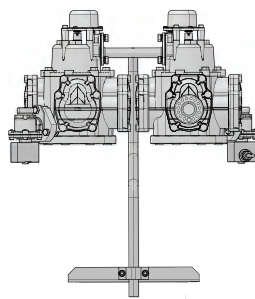
DEF Stack
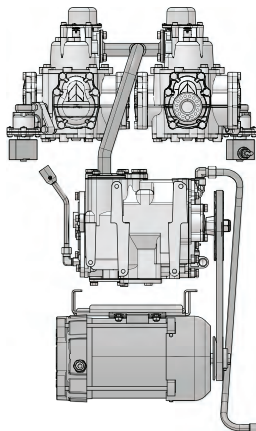
Pump Stack
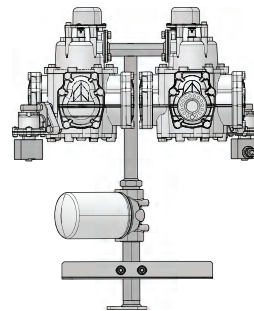
Dispenser Stack

Ultra Dispenser
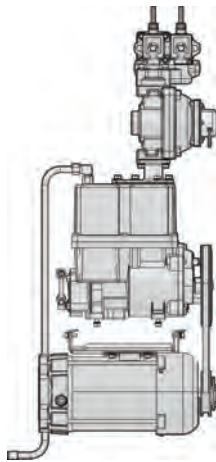
Ultra Pump
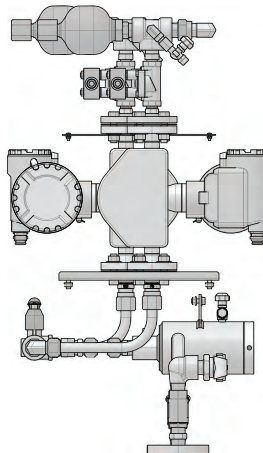
LPG Stack

Nested Stack

Top

Bottom
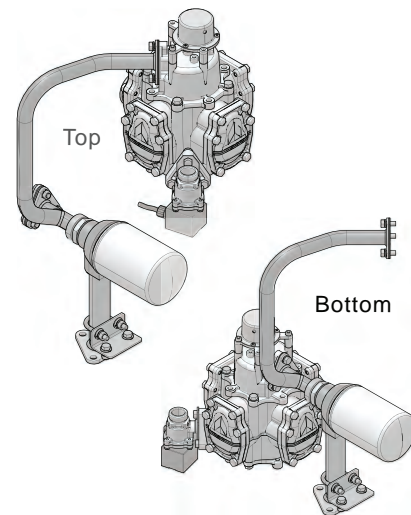
Figure 43.   PULSE Series Stacks

5.2 DEF 2 Stack Assembly (from 1 March 2017)

See 5.9 for DEF 1 Stack Assembly used prior to 1 March 2017.

Due to the corrosive nature of DEF some internal components are constructed from DEF resistant material.
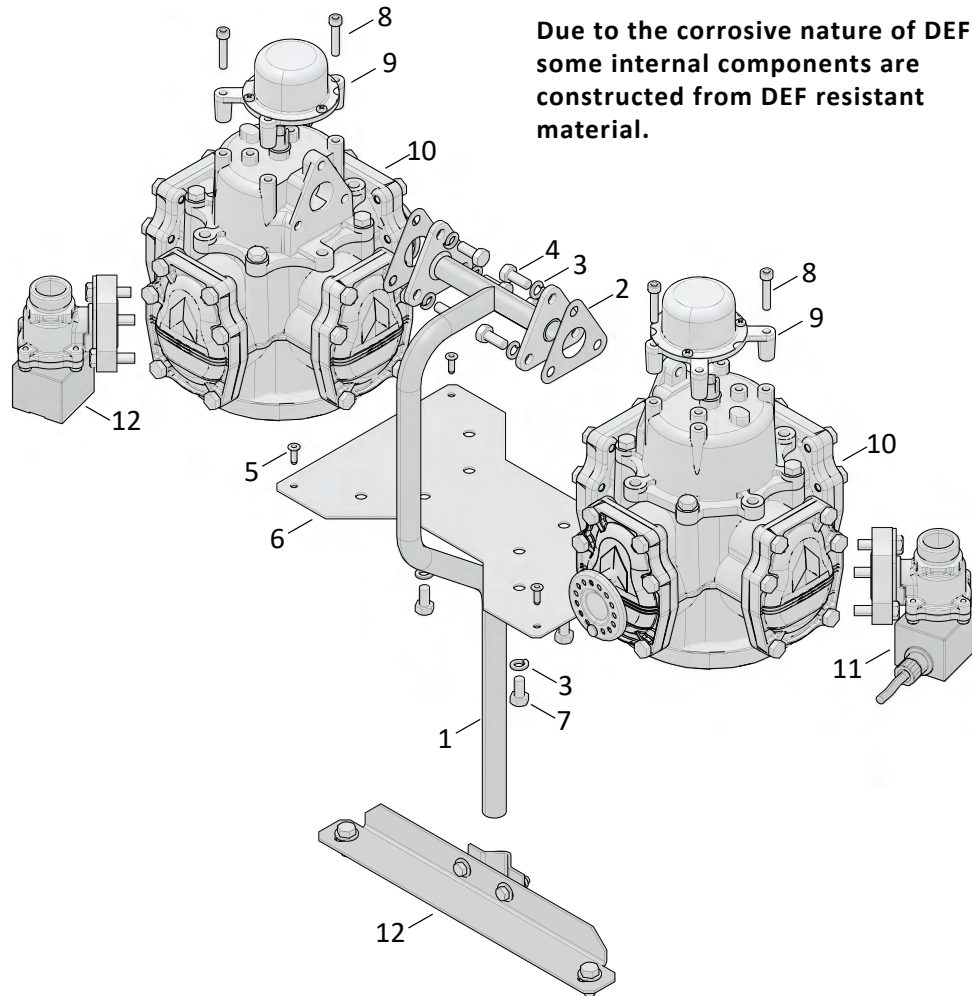
Figure 44.   DEF Stack Assembly

Index	Part No.	Part Description
1	2A100887	DEF Meter Manifold Asm
2	4G02167	Gasket In/Out Tatsuna DEF Meter
3	(x10)	Washer M8 Spring S/S T304
4	(x6)	Screw M8 x 20 Set Eng S/S T304
5	(x4)	Rivet 4.8mm S/S R73STST-0603
6	4G100813	Tatsuno Meter Plate
7	(x4)	Screw M8x16 Set Eng ZP
8	(x4)	Screw M6 x 30 Cap SKT HD S/S
9	P88918	Encoder Asm Type 88918
10	P02162	Flow Meter DEF Tatsuno FM-1022-B
11	P04501	Valve ASCO 3/4 Prop DEF
12	2A100830	DEF Feed Pipe Bracket Asm PULSE SII

5.3 DEF2 Filter and Strainer Assemblies
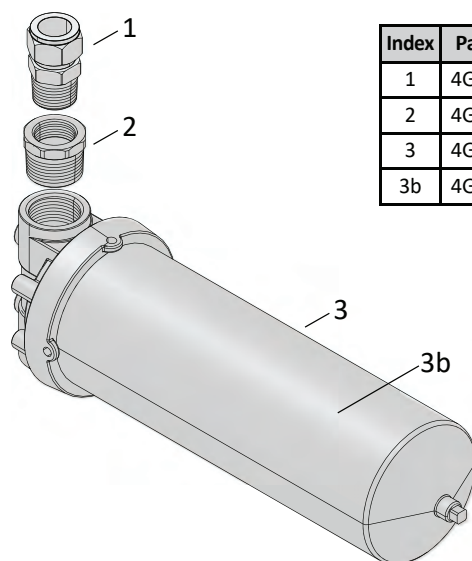
Index	Part No.	Part Description
1	4G95259	Connector 3/4" Tube to Male 3/4" NPT S/S
2	4G95205	Reducing Bush 1 x 3/4" NPT
3	4G02222	Filter Housing DEF S/S 1"
3b	4G02243	Filter Cartridge DEF 5 Micron

Figure 45.   DEF2 Filter Assembly (Part # 2A101005)
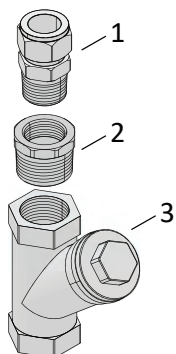
Index	Part No.	Part Description
1	4G95259	Connector 3/4" Tube to Male 3/4" NPT S/S
2	4G95205	Reducing Bush 1 x 3/4" NPT
3	4G04786	1" Y Strainer 100 Micron S/S

Figure 46.   DEF2 Strainer Assembly (Part # 2A101006)
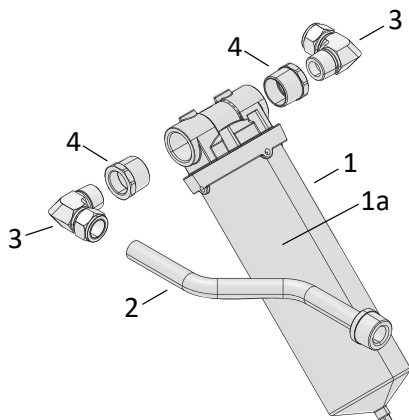
Index	Part No.	Part Description
1	4G02222	Filter Housing DEF S/S 1"
1a	4G02243	Filter Cartridge DEF 5 Micron
2	2A100695	DEF Filter Inlet Pipe Asm D
3	4G95318	Elbow Male 3/4" Tube to 3/4" NPT SS
4	4G95205	Reducing Bush 1" x 3/4" NPT
6	8A101015	DEF Short Manifold S/S Welded

Figure 47.   Filter Assembly DEF PULSE Angled (Part # 2A02466A)

5.4 Centre DEF Stack Assembly Bennett

Index	Part No.	Part Description
1	8A101015	DEF Short Manifold S/S Welded
2	4G02167	Gasket In/Out Tatsuna DEF Meter
3	5C04205	Washer M8 Spring S/S T304
4	5D00105	Screw M8 x 20 Set Eng S/S T304
5	5F00048	Rivet 4.8mm S/S R73STST-0603
6	4G100813	Tatsuno Meter Plate
7	5D00090	Screw M8 x16 Set Eng ZP
8	(x5)	Screw M6 x 30 Cap SKT HD S/S
9	P88918	Encoder Asm Type 88918
10	P02162	Flow Meter DEF Tatsuno FM-1022-B
11	P04501	Valve ASCO 3/4 Prop DEF
12	2A100830	DEF Feed Pipe Bracket Asm PULSE SII
13	2A02466A	Filter Assembly DEF PULSE Angled

Figure 48.   Centre DEF Stack Assembly

Figure 49.   DEF Filter Seal Kit CIMTEK (Part # 4G06496)

HYDRAULIC COMPONENTS

HYDRAULIC COMPONENTS

5.5 DEF Module Front and Rear Assembly
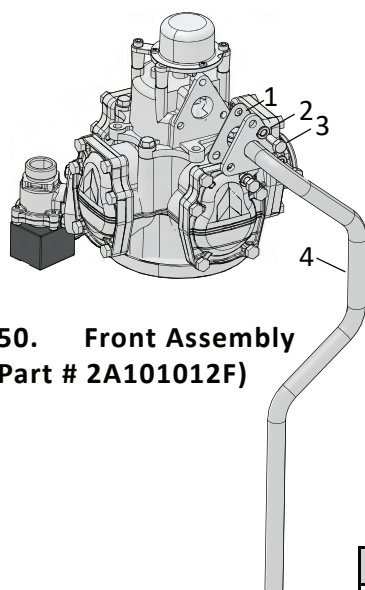
**Figure 50.   Front Assembly
(Part # 2A101012F)**
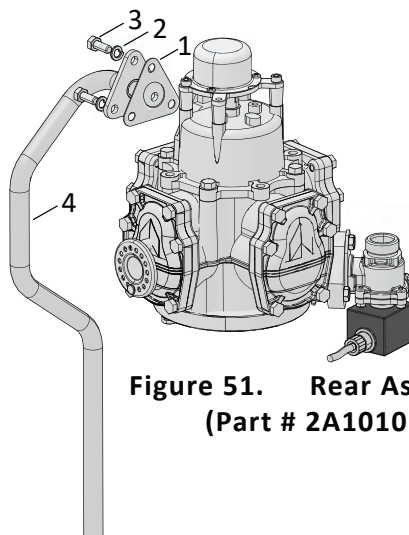
**Figure 51.   Rear Assembly
(Part # 2A101012R)**

Index	Part No.	Part Description
1	4G02167	Gasket In/Out Tatsuno DEF Meter
2	(x3)	Washer M8 Spring S/S T304
3	(x3)	Screw M8 x 20 Set Eng S/S T304
4	8A101013	DEF Single Manifold S/S Welded

5.6 DEF Module Bennett Front and Rear Assemby
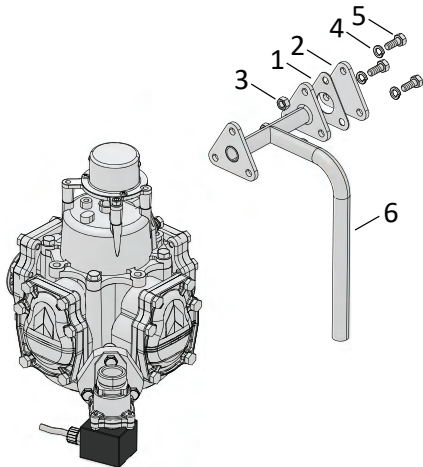
**Figure 52.   DEF Mod Bennett Front
Assembly (Part # 2A101050F)**
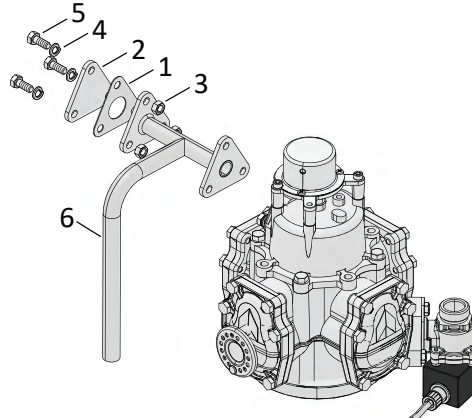
**Figure 53.   DEF Mod Bennett Rear
Assembly (Part # 2A101050R)**

Index	Part No.	Part Description
1	4G02167	Gasket In/Out Tatsuno DEF Meter
2	4G95319	Blanking Flange S/S
3	(x3)	Nut M8 Flange Serrated ZP
4	(x3)	Washer M8 Spring S/S T304
5	(x3)	Screw M8 x 20 Set Eng S/S T304

Separate Item

6	8A101015	DEF Short Manifold S/S Welded

5.7 DEF Nested Stack
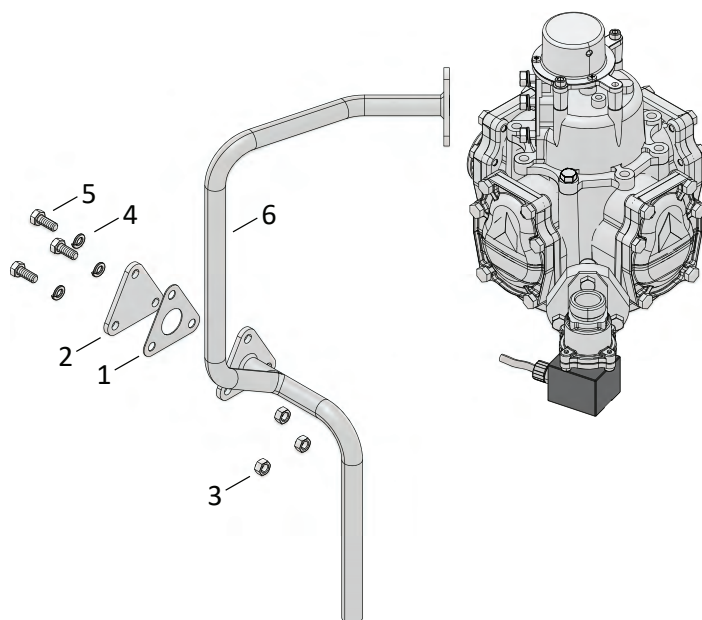
Figure 54.   DEF Module Nested Top Assembly (Part # 2A100964T)

Index	Part No.	Part Description
1	4G02167	Gasket In/Out Tatsuno DEF Meter
2	4G95319	Blanking Flange S/S
3	(x3)	Nut M8 Flange Serrated ZP
4	(x3)	Washer M8 Spring S/S T304
5	(x3)	Screw M8 x 20 Set Eng S/S T304
6	8A100966	DEF Nested Manifold S/S Welded
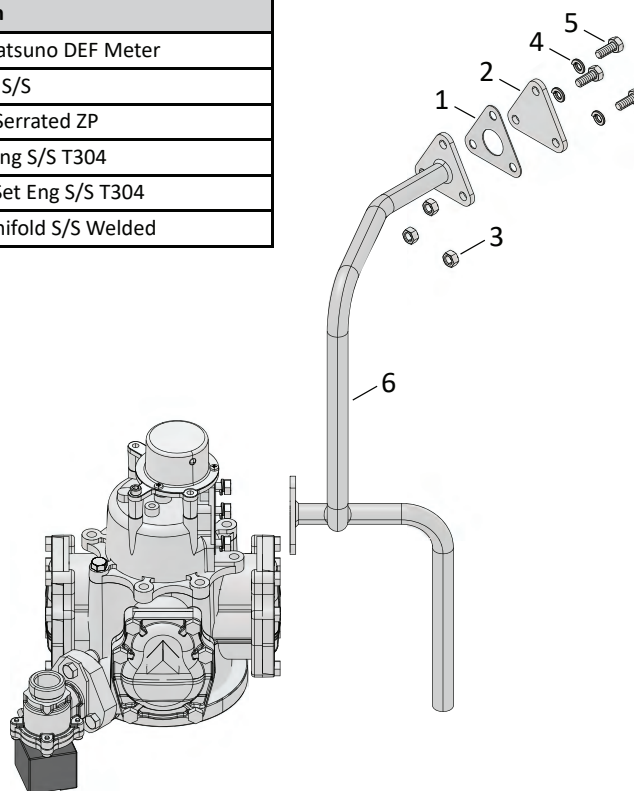
Figure 55.   DEF Module Nested Bottom Assembly (Part # 2A100964B)

HYDRAULIC COMPONENTS

HYDRAULIC COMPONENTS

5.8 DEF Proportional Valve Assembly

Index	Part No.	Part Description
1	4G29636	O-Ring MR 031 x 4 Viton
2	4G00809	O-Ring 22 x 3 Viton Dotmar
3	P04501	Valve ASCO 3/4" Prop DEF
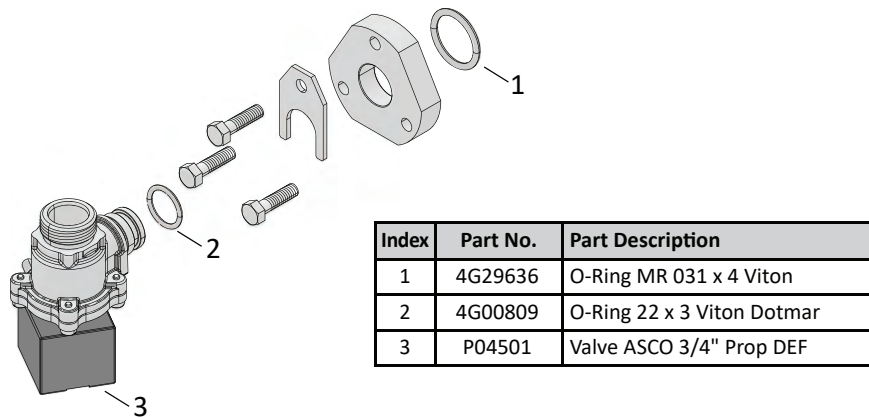
Figure 56.   DEF Proportional Valve Assembly

5.9 DEF Stack Assembly (prior to 1 March 2017)
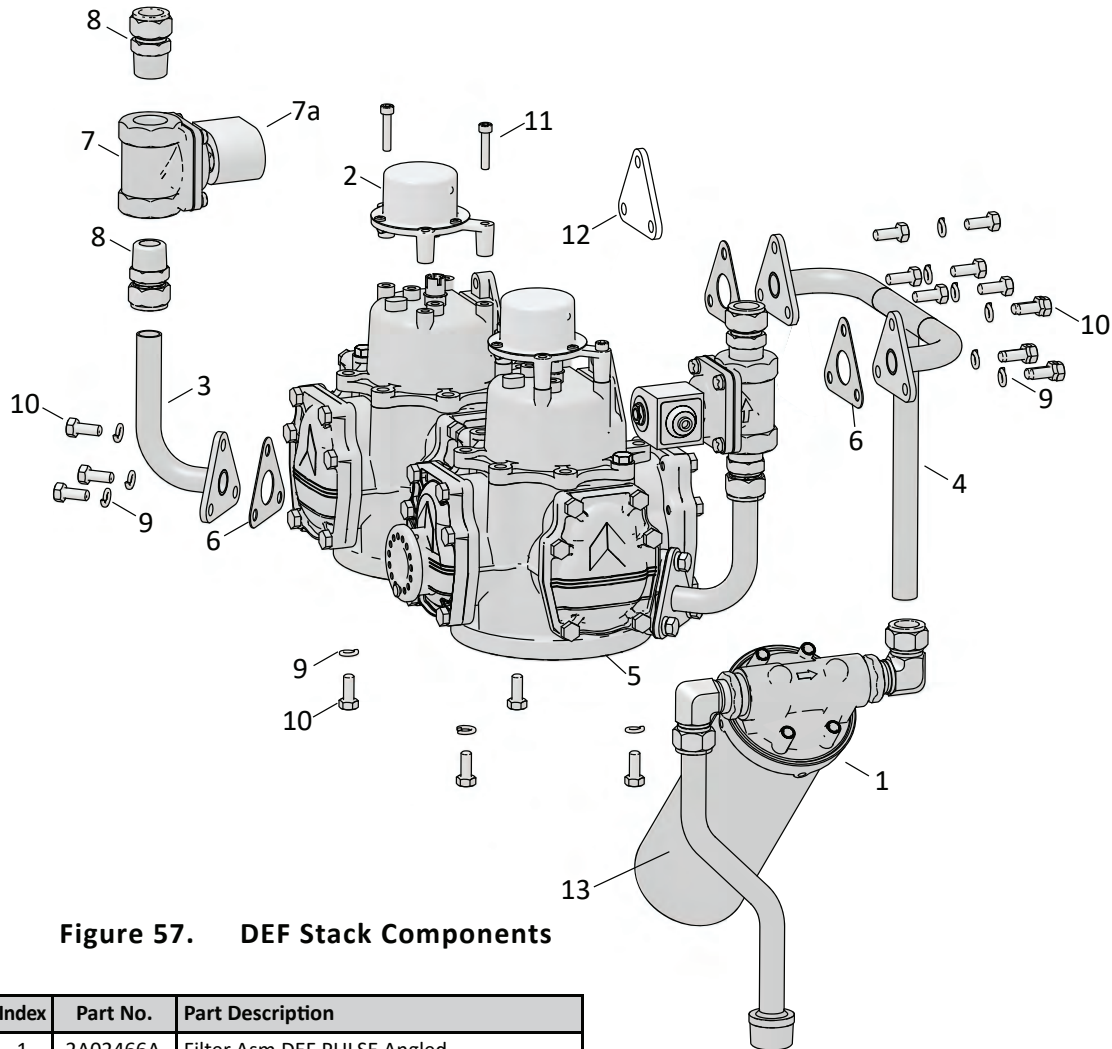
Figure 57.   DEF Stack Components

Index	Part No.	Part Description
1	2A02466A	Filter Asm DEF PULSE Angled
2	2A88918	Encoder Asm Type 88918
3	8A95227	Meter Delivery Pipe Asm S/S
4	2A95247	Manifold DEF Asm
5	4G02162	Flow Meter DEF Tatsuno FM-1022-B
6	4G02167	Gasket In/Out Tatsuno DEF Meter
7	4G02169	Valve Body Single Stage DEF S/S Solenoid
7a	4G02181	Valve Coil DEF Electrical Ex Rated
8	4G95259	Connector 3/4" Tube to Male 3/4" NPT S/S
9	(x13)	Washer M8 Spring S/S T304
10	(x13)	Nut M8 Flange Serrated ZP
11	(x4)	Screw M6 x 30 Cap SKT HD S/S
12	4G95319	Blanking Flange S/S
13	4G02222	Filter Housing DEF S/S 1"

Not Shown

	4G02243	Filter Cartridge DEF 5 Micron
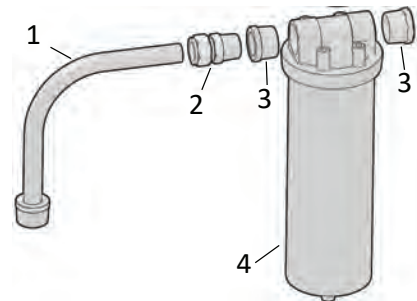
Filter Asm for models prior to July 2014

Index	Part No.	Part Description
1	8A95210	Filter Feed Asm S/S Welded
2	4G95259	Connector 3/4" Tube to Male 3/4" NPT S/S
3	4G95205	Reducing Bush 1 x 3/4" NPT
4	4G02222	Filter Housing DEF S/S 1"

HYDRAULIC COMPONENTS

5.10 Petrol/Diesel Pump Stack

The Tatsuno pump is described separately later in this section.
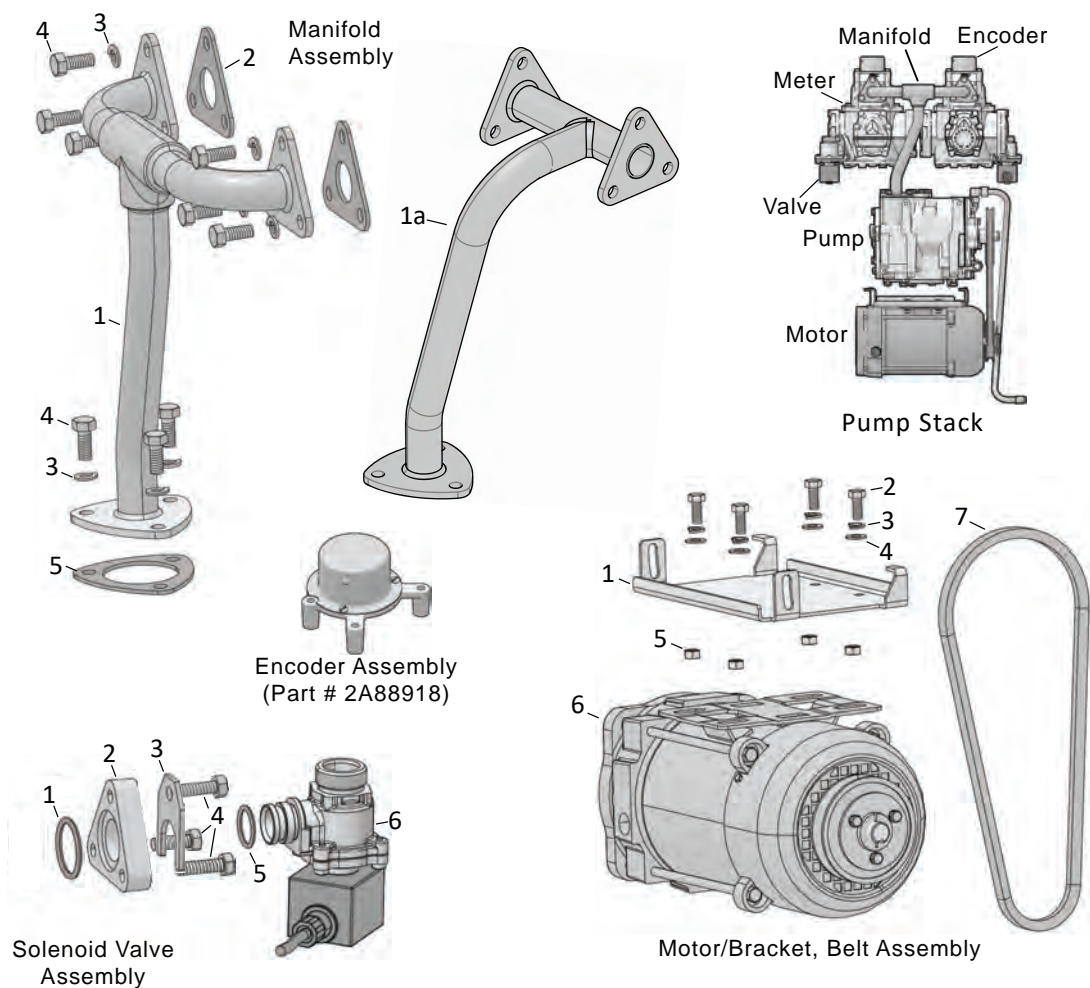
Figure 58.   Pump Stack Components

Manifold Assembly

Index	Part No.	Part Description
1	8A95596	Pump Manifold Asm ZP
1a	8A100890	Pump Manifold Asm ZP (as from Oct 2017)
2	4G85424	Flange Gasket (T) Meter 1
3	(x9)	Washer M8 Spring
4	(x9)	Screw M8 x 20 Set Eng ZP
5	4G87912	Pump Unit Gasket

Solenoid Valve Assembly

Index	Part No.	Part Description
1	4G29634	O-Ring 4PD Viton
2	4G95572	Flange Aluminium 16mm PV
3	4G95570	Retainer for Proportional Valves
4	(x3)	Screw M8 x 30 Set Eng ZP
5	4G00809	O-Ring 22 x 3 Viton Dotmar
6	P52533	Solenoid Valve ASCO 3/4" Proportional BF

Motor/Bracket, Belt Assembly

Index	Part No.	Part Description
1	4G95559	Motor Mount Brkt
2	(x4)	Screw M8 x 20 Set Eng ZP
3	(x4)	Washer M8 Spring
4	(x4)	Washer M8 x 19 x 1.6 Flat Steel
5	(x4)	Nut M8 ZP
6	P21035BF	Motor Flameproof 750W Elnor 1PH BF
7	4V90740	Vee Belt A33 Mitsuboshi

5.11 Dispenser Stack

The meter assembly is shown later in this section.
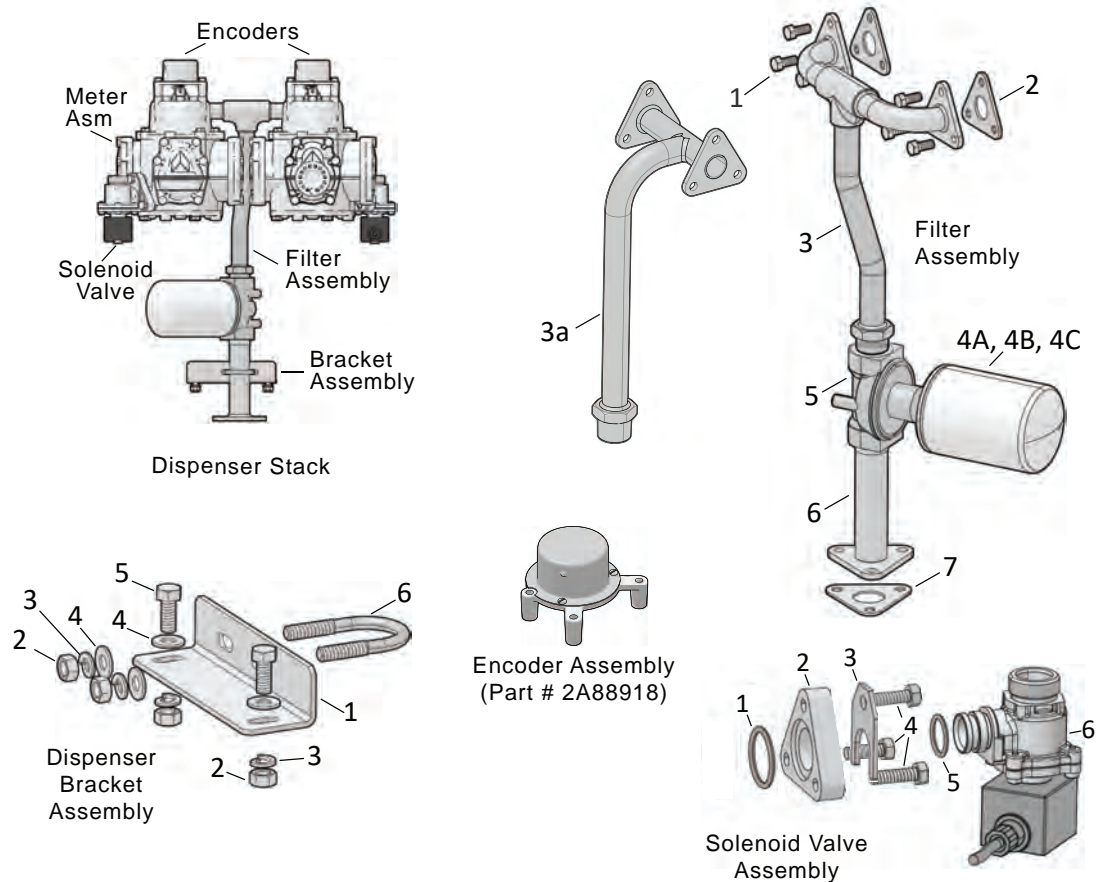
Figure 59.   Dispenser Stack Components

<div style="writing-mode: vertical">**HYDRAULIC COMPONENTS**</div>

Solenoid Valve Assembly

Index	Part No.	Part Description
1	4G29634	O-Ring 4PD Viton
2	4G95572	Flange Aluminium 16mm PV China
3	4G95570	Retainer for Proportional Valves
4	(x3)	Screw M8 x 30 Set Eng ZP
5	4G00809	O-Ring 22 x 3 Viton Dotmar
6	P52533	Solenoid Valve ASCO 3/4" Proportional BF

Dispenser Bracket Assembly

Index	Part No.	Part Description
1	4G95608	Dispenser Filter Brkt PULSE
2	(x4)	Nut M8 ZP
3	(x4)	Washer M8 Spring
4	(x4)	Washer M8 x 19 x 1.6 Flat Steel
5	(x2)	Screw M8 x 20 Set Eng ZP
6	5D96008	U-Bolt 25NB Pipe M8 Galv

Dispenser Filter Assembly

Index	Part No.	Part Description
	2A02650	Filter Asm without filter
	2A95599C41	Filter Asm with 10 Micron Filter
	2A95599C43	Filter Asm with 30 Micron Filter
	2A95599H41	Filter Asm with 10 Micron Hydrosorb Filter
1	(x6)	Screw M8 x 20 Set Eng ZP
2	4G85424	Flange Gasket (T) Meter 1
3	8A95620	Dispenser Manifold Asm ZP
3a	8A100893	Dispenser Manifold Asm ZP (as from Oct 2017)
4a	4G22095	Filter Fuel Cimtek 400 Series 10 Micron
4b	4G22097	Filter Fuel Cimtek 400 Series 30 Micron
4c	4G22096	Filter Hydrosorb 400HS Series 10 Micron
5	4G22075	Adaptor 400 BSP 1" Cimtek
6	8A95607	Filter Flange Asm ZP
7	4G00269	Suction Flange Gasket

HYDRAULIC COMPONENTS

5.12 Ultra Dispenser Stack

NOTE: an exploded view of valve assembly 2A100044 L and R with part numbers is shown under 5.23 Proportional Valve Assembly PULSE Ultra.
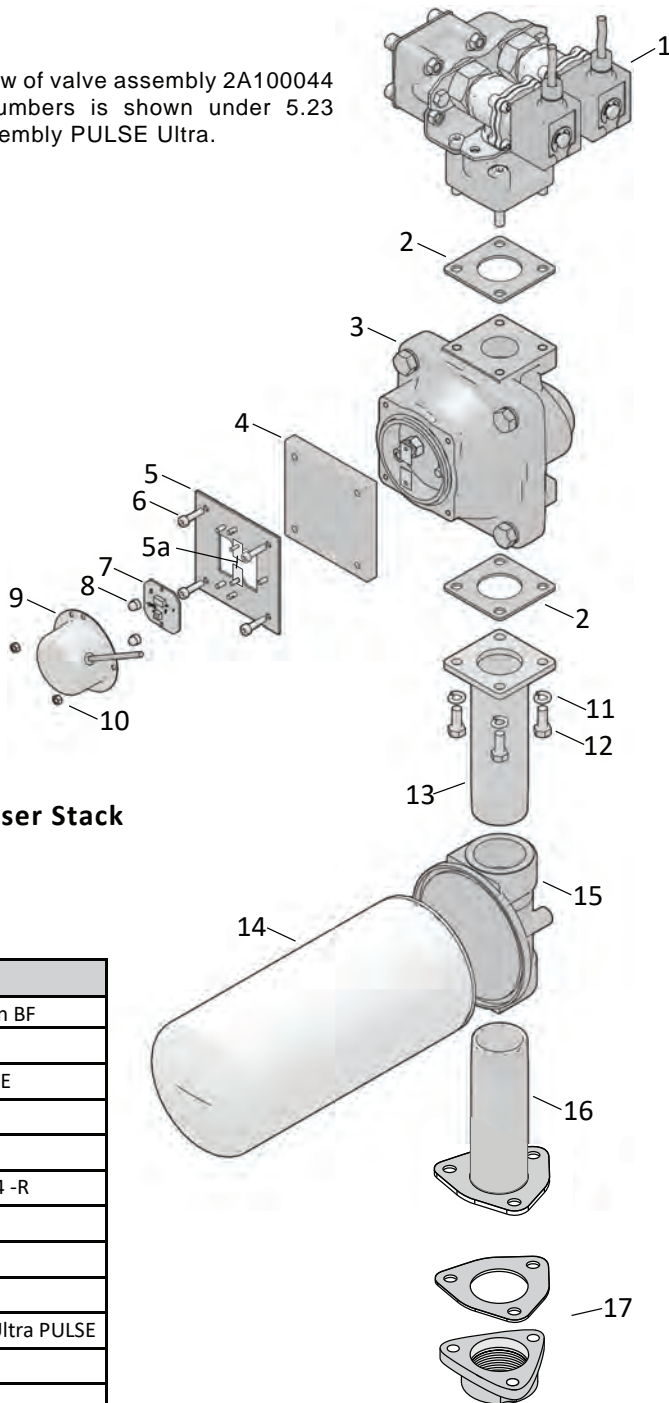
Figure 60.   Ultra Dispenser Stack

Ultra Dispenser Stack Assembly

Index	Part No.	Part Description
1	P52533	Solenoid Valve ASCO 3/4 Proportn BF
2	4G82768	Meter Gasket Lobe
3	2A83051U	Lobe and Encoder Asm Ultra PULSE
4	4G82774	Meter Cover Plate
5	4G82777	Encoder Mounting Plate
5a	2M65790	Sil Pad 400 (TO220) 3223 07AC 54 -R
6	(x6)	Screw M5 x 20 Cap SKT HD S/S
7	P33866	PCA Hi Flow Encoder
8	(x2)	Nut Dome Nylon PNN 6-32 C
9	2A82783U	Encoder Cover/Cable Asm Lobe Ultra PULSE
10	(x2)	Nut M4 ZP
11	(x4)	Washer M8 Spring
12	(x4)	Screw M8 x 20 Set Eng ZP
13	8A100082	Filter Nipple Outlet Ultra PULSE ZP
14	4G00534	Filter Fuel CIMTEK 800 Series 30 Micron
15	4G00360	810 1 & 1/2" NPT Single Filter AL ADP
16	8A100085	Filter Nipple Inlet Ultra PULSE ZP
17	P04401	Ultra Dispenser Female Flange & Gasket

5.13 Meter Assembly PULSE Nested Stack (Part # 2A100958)
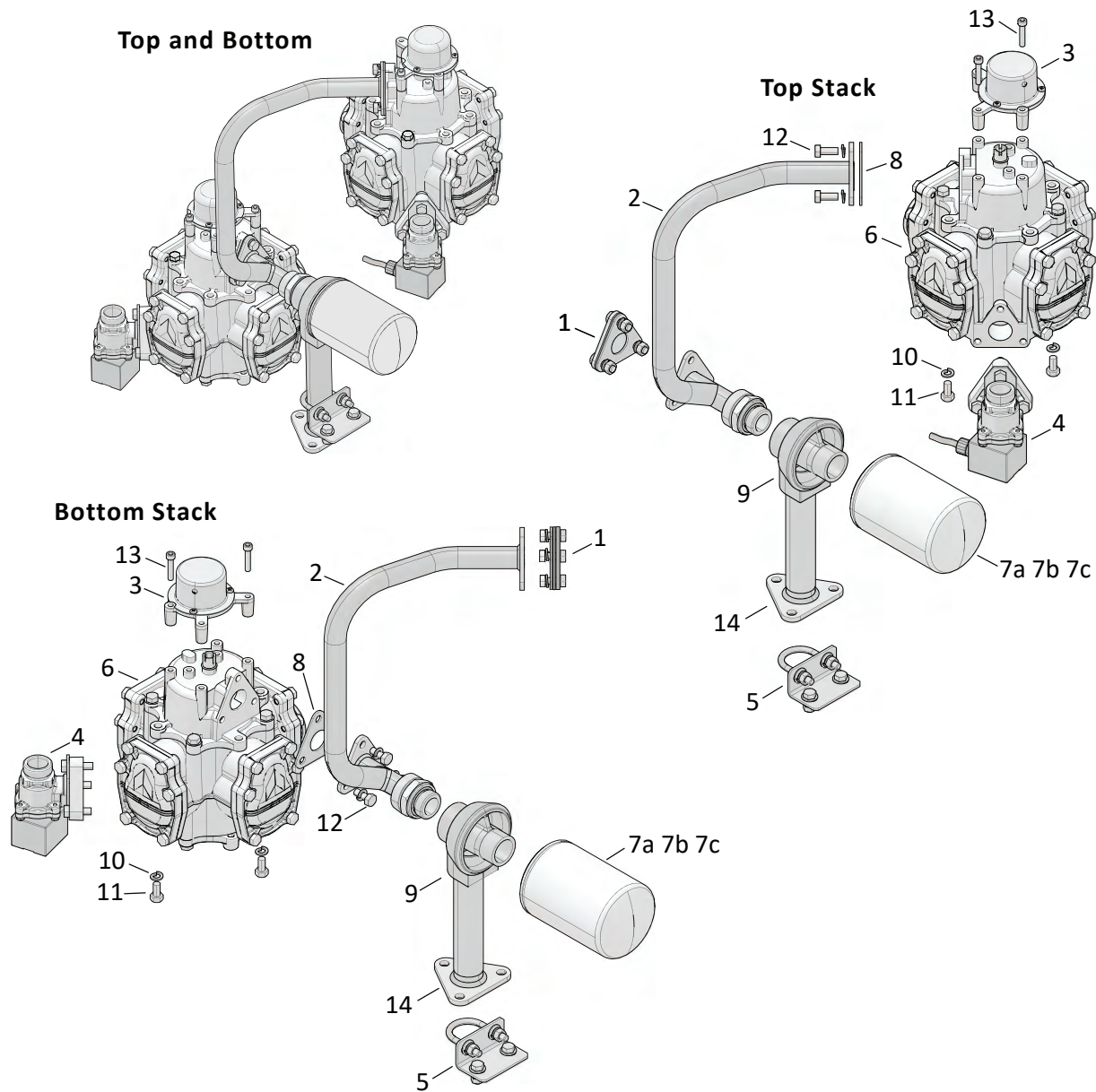
Figure 61.   Nested Stack

Index	Part No.	Part Description
1	2A02259	Blanking Kit
2	8A100962	Nested Meter Manifold Asm ZP
3	P88918	Encoder Asm Type 88918
4	P52533	Solenoid Valve ASCO 3/4 Proportn BF
5	2A95759	Dispenser Brkt Asm PULSE Nested
6	P820030	Flow Meter Tatsuno
7a	4G22095	Filter Fuel Cimtek 400 Series 10 Micron
7b	4G22097	Filter Fuel Cimtek 400 Series 30 Micron
7c	4G22096	Filter Hydrosorb 400HS Series 10 Micron

Index	Part No.	Part Description
8	4G85424	Flange Gasket (T) Meter 1
9	4G95199	Filter Housing Nested
10	(x0)	Washer M8 Spring
11	(x4)	Screw M8 x 16 Set Eng ZP
12	(x6)	Screw M8 x 20 Set Eng ZP
13	(x4)	Screw M6 x 30 Cap SKT HD S/S
14	8A02487	Filter Flange Asm Nested ZP

HYDRAULIC COMPONENTS

5.14 Dual Stack LPG PULSE LS/LX (Part # 2A95284)
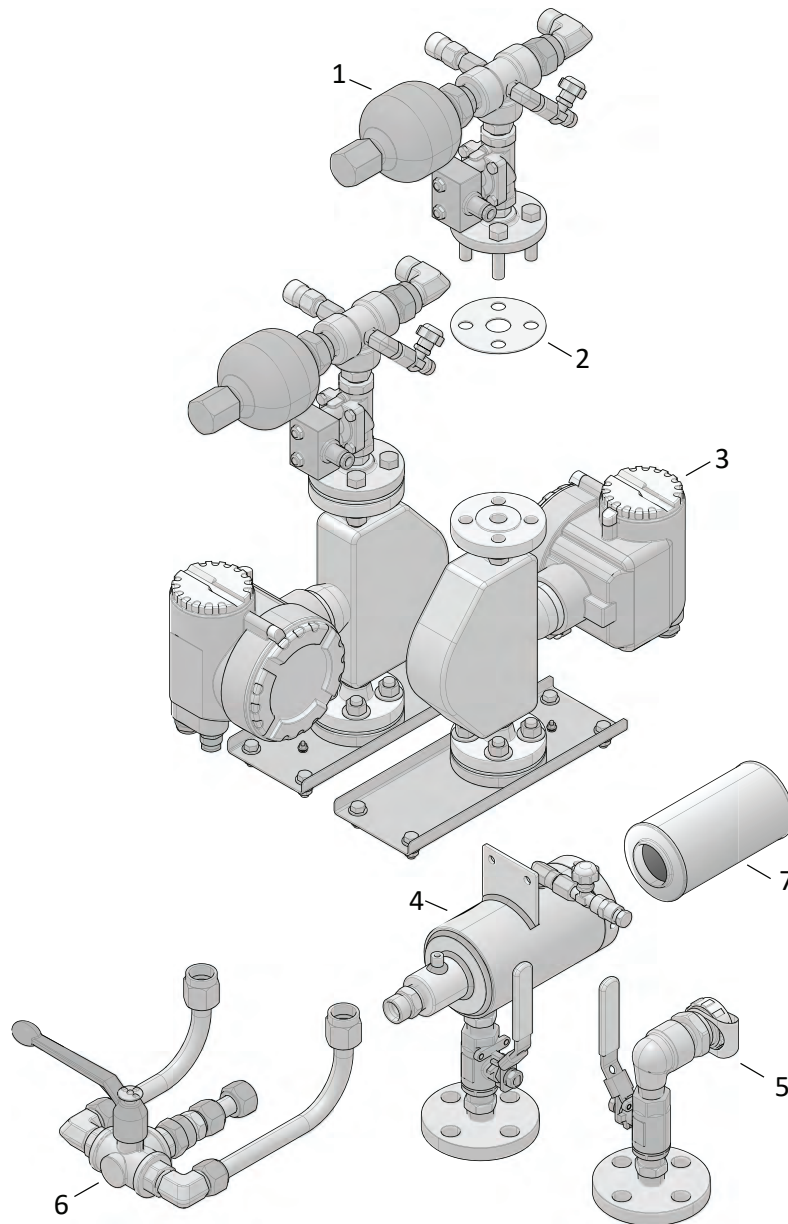
Figure 62.   Dual LPG Stack Components

Index	Part No.	Part Description
1	2A95285	Valve Asm L Series LPG PULSE
2	4G95270	Meter Gasket LPG PULSE
3	P02157	Flow Meter LPG Mass
4	2A95283	Filter Asm LPG PULSE
5	2A95282	Return Line Asm LPG PULSE
6	2A95289	Dual Meter Feed Asm LPG PULSE
7	4G20495	LPG Filter

5.15 Valve Assembly L Series LPG PULSE (Part # 2A95285)

Not Shown:
4 x 2M01316
fitted to Valve Cable
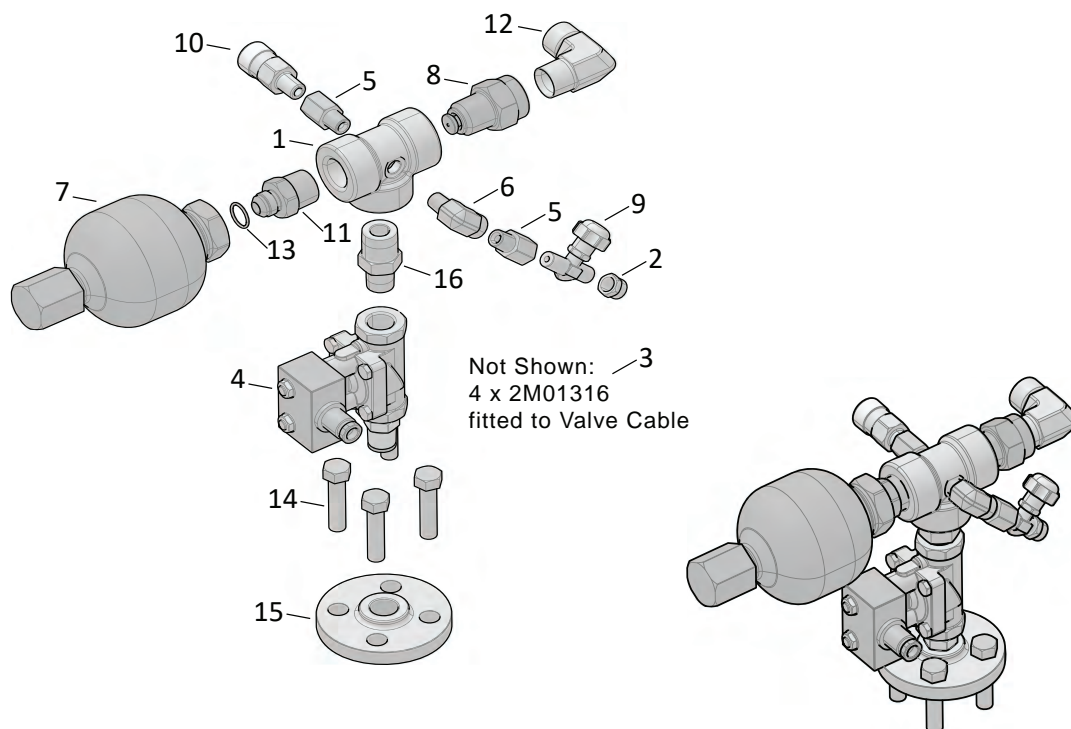
Figure 63.   LPG L Series Valve Assembly

Index	Part No.	Part Description
1	8A20460	Tee 3/4" NPT Gold PSVD
2	2C20535	Cap 1/4" NPT LPG 9000
3	2M01316	Ferrule Bootlace Insulated 1.5mm
4	4G02158	Valve Parker LPG 2 Stage
5	4G04396	1/4" NPT M x 1/4 x 1/4" NPTF F Adaptor
6	4G04414	Elbow M-F 1/4" NPT Steel
7	4G20190	Hydraulic Accumulator
8	4G20405	Valve Excess Flow
9	4G20415	Valve Needle
10	4G20480	Valve Hydrostatic Relief
11	4G20485	Adapter Male/Male
12	4G23345	Elbow Male 3/4" Pipe 3/4" NPT
13	4G29605	O-Ring N90 17 ID x 2mm Section
14	(x4)	Screw M12 x 50 Set Eng ZP
15	8A100273	LPG Valve Flange Asm Gold PSVD
16	8A20445	Nipple 1/2" - 3/4" NPT HEX Gold PSVD

5.16 Valve Assembly C Series LPG PULSE (Part # 2A95791)
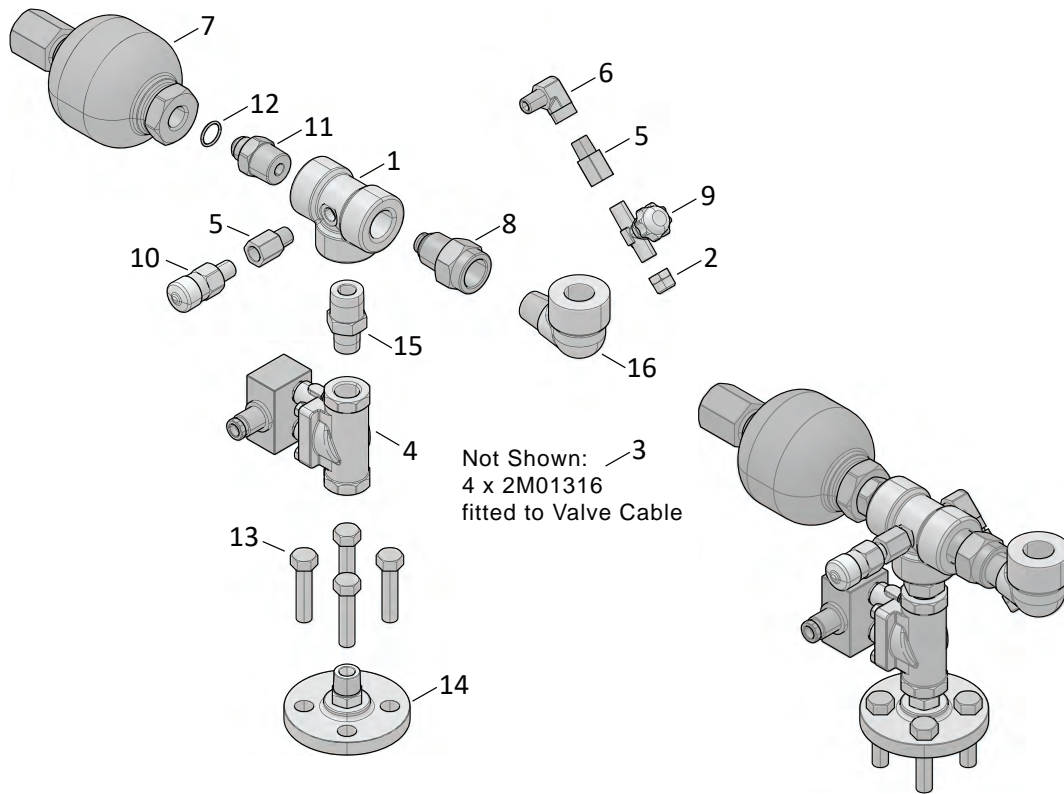
Figure 64.   LPG C Series Valve Assembly

Index	Part No.	Part Description
1	8A20460	Tee 3/4" NPT Gold PSVD
2	2C20535	Cap 1/4" NPT LPG 9000
3	2M01316	Ferrule Bootlace Insulated 1.5mm
4	4G02158	Valve Parker LPG 2 Stage
5	4G04396	1/4" NPTF M x 1/4 x 1/4" NPTF F Adaptor
6	4G04414	Elbow M-F 1/4" NPT Steel
7	4G20190	Hydraulic Accumulator
8	4G20405	Valve Excess Flow
9	4G20415	Valve Needle
10	4G20480	Valve Hydrostatic Relief
11	4G20485	Adapter Male/Male
12	4G29605	O-Ring N90 17 ID x 2mm Section
13	(x4)	Screw M12 x 50 Set Eng ZP
14	8A100273	LPG Valve Flange Asm Gold PSVD
15	8A20445	Nipple 1/2" - 3/4" NPT HEX Gold PSVD
16	8A24915P	Elbow M&F 3/4" NPT Gold PSVD

5.17 Filter Assembly LPG PULSE (Part # 2A95283)
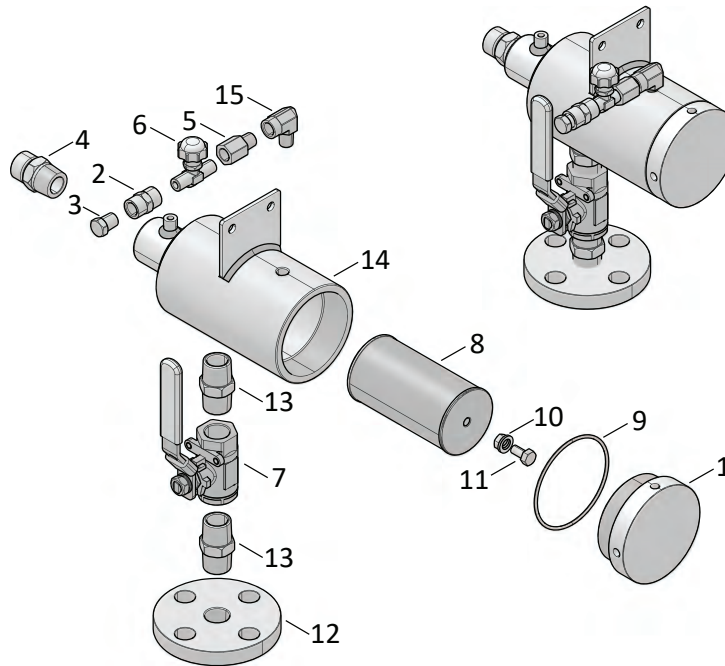
Figure 65.   LPG Filter Assembly

Index	Part No.	Part Description
1	2A92862	Filter Housing Cap LPG 9000
2	4E20520	Socket 1/4" NPT LPG 9000
3	4E20530	Plug 1/4" NPT LPG 9000
4	4E23145	Connector Hard Pipe 9000
5	4G04396	1/4" NPTF M x 1/4 x 1/4" NPTF F Adaptor
6	4G20415	Valve Needle
7	4G20450	Lever Manual Ball Valve 3/4"
8	4G20495	LPG Filter
9	4G29810	O-Ring N70 89.4 ID x 3.1mm
10	(x1)	Nut M8 Flange Serrated ZP
11	(x1)	Screw M8 x 16 Set Eng ZP
12	8A20505	Screwed Flange 3/4" NPT 3/4" ANSI Plated
13	8A20524	20NB HEX Nipple NPT 300LB A105N Gold PSVD
14	8A95265	Filter Housing Asm LPG PULSE Gold PSVD
15	4G04414	Elbow M-F 1/4" NPT Steel

HYDRAULIC COMPONENTS

5.18 Meter Assembly PULSE Bennett High70 Dual (Part # 2A100058)
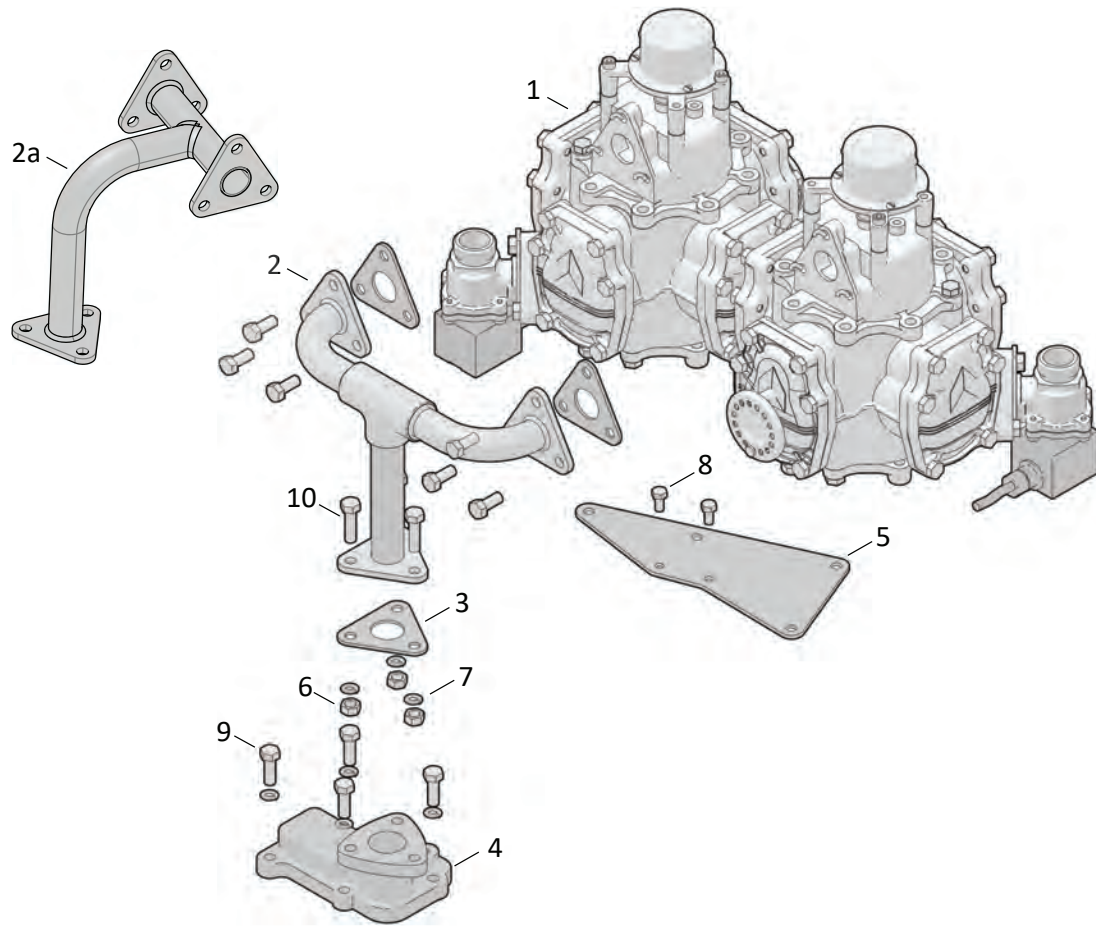
Figure 66.   Meter Assembly Bennett

Index	Part No.	Part Description
1	2A95568	Meter Asm PULSE
2	2A95889	Manifold Asm Bennett High70
2a	8A101069	High Pump Manifold Asm ZP (as from Oct 2017)
3	4G85424	Meter Flange Gasket
4	4G95899	Bennett P/D Manifold
5	4G95912	Bennett High70 Meter Brkt
6	(x3)	Nut M8 ZP
7	(x7)	Washer M8 Spring
8	(x2)	Screw M6 x 12 Set Eng ZP
9	(x4)	Screw M8 x 25 Set Eng ZP
10	(x3)	Screw M8 x 30 Set Eng ZP

5.19 Pump Unit Assembly PULSE Bennett T140 (Part # P20065)
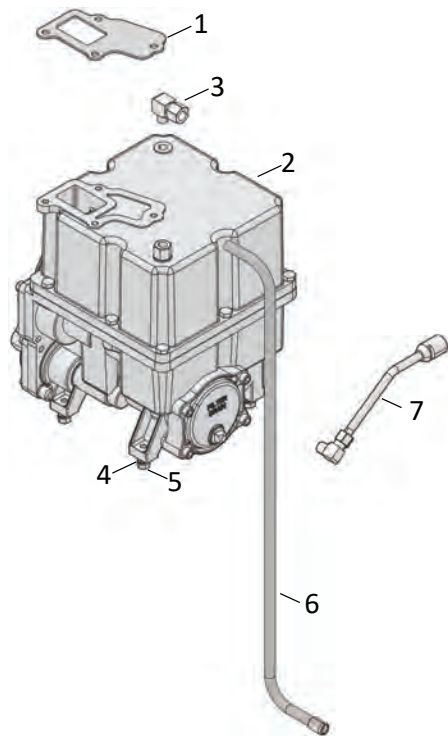
Index	Part No.	Part Description
1	4G100065	Bennett Outlet Gasket
2	P20065	Pump Unit Bennett T140
3	4G23912	Elbow Male 69 x 8 x 4
4	(x4)	Washer M8 Spring
5	(x4)	Screw M8 x 20 Set Eng ZP
6	8A100057	Vent Pipe Asm Bennett ZP
7	P87936	Test Valve Asm

Figure 67.   Pump Unit Assembly PULSE Bennett T140 Pump

5.20 Motor Flameproof 1.5KW Elnor BF (Part # P21000BF)
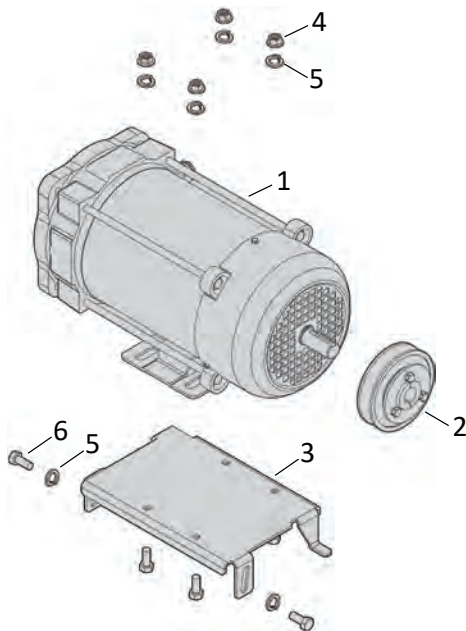
Index	Part No.	Part Description
1	P21000BF	Motor Flameproof 1.5KW Elnor BF
2	4G101465	SPA Pulley 86mm
3	4G95559	Motor Mount Brkt
4	5B03898	Nut M8 Flange Serrated ZP
5	5C04210	Washer M8 Spring
6	5D00100	Screw M8 x 20 Set Eng ZP

Figure 68.   Motor Flameproof 1.5KW Elnor BF

HYDRAULIC COMPONENTS

5.21 Bennett Pump - Available Spare Parts

Spare parts are available in kits (3) and a selected number of individual parts (8).

5.21.1 4G04794 Kit T140 Master Seal

Gasket - Atmospheric Cover

Gasket

Gasket

Gasket Cover B.P.

O-Ring R.C.

Lip Seal R.C.

Ball Bearing R.C.
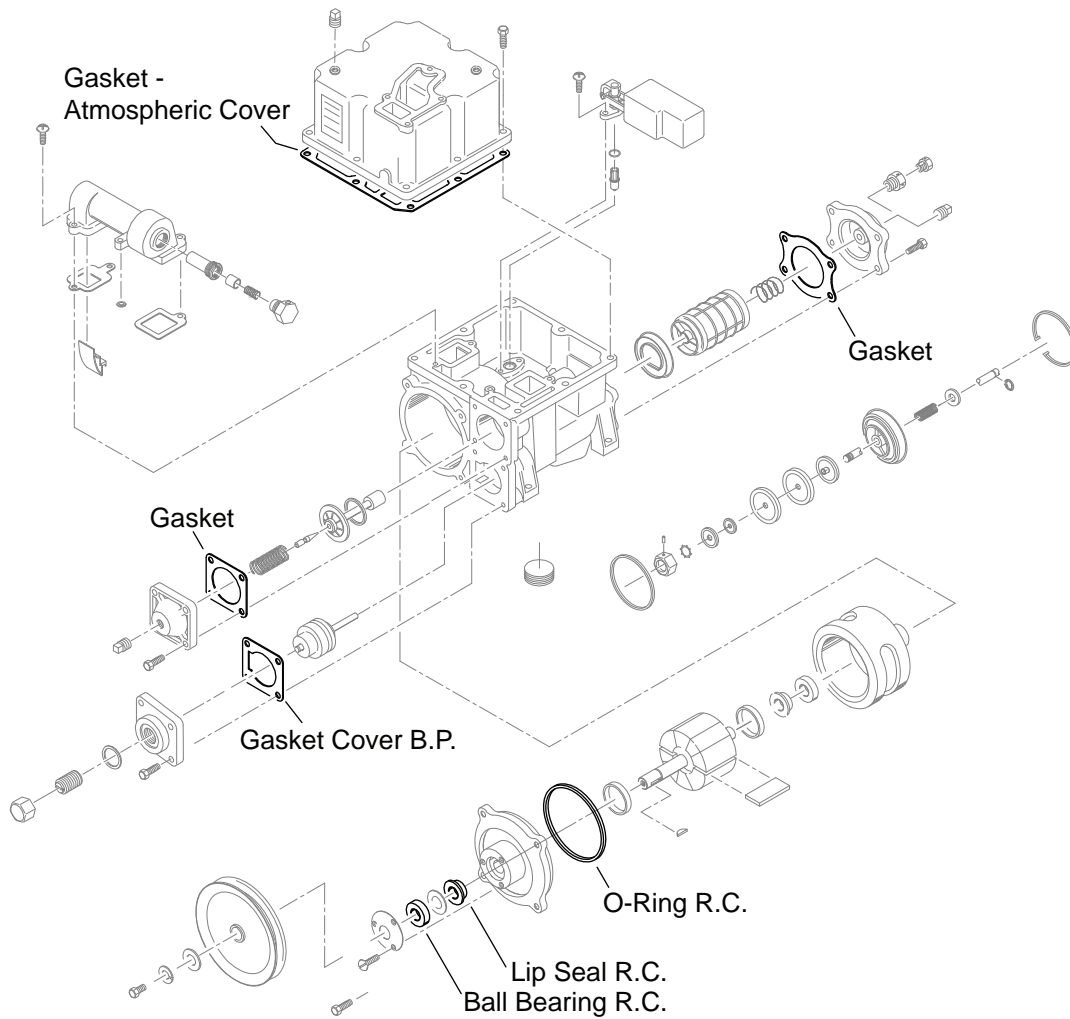
Figure 69.   4G04794 Kit T140 Master Seal

5.21.2 4G04795   Kit T140 Blade

Pump Blade (x8)

Lip Seal R.C.
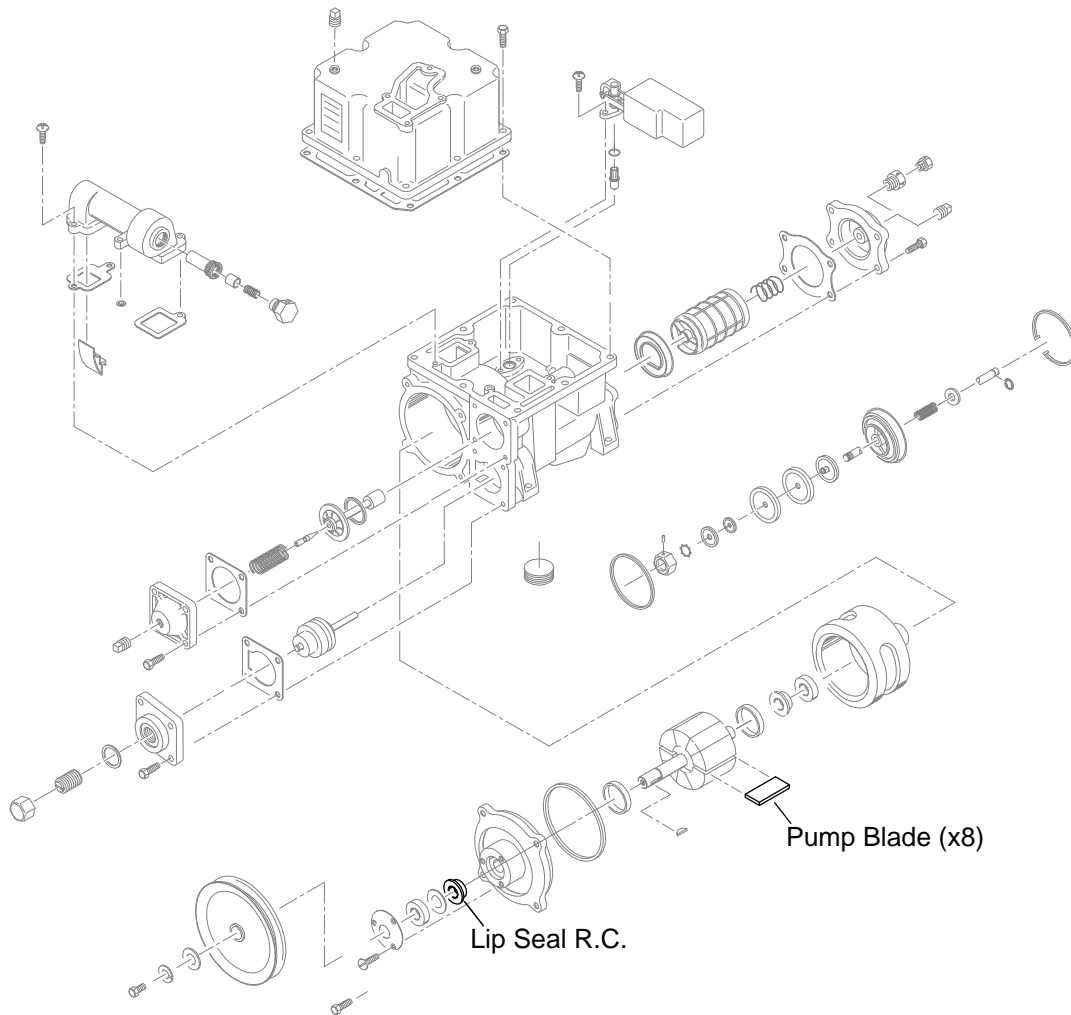
Figure 70.   4G04795   Kit T140 Blade

5.21.3 4G04796   Kit Rotor & Bearing Rebuild T140 100mm

Needle Bearing
Lip Seal Stator

Rotor and Shaft Assembly

Lip Seal R.C.
Ball Bearing R.C.
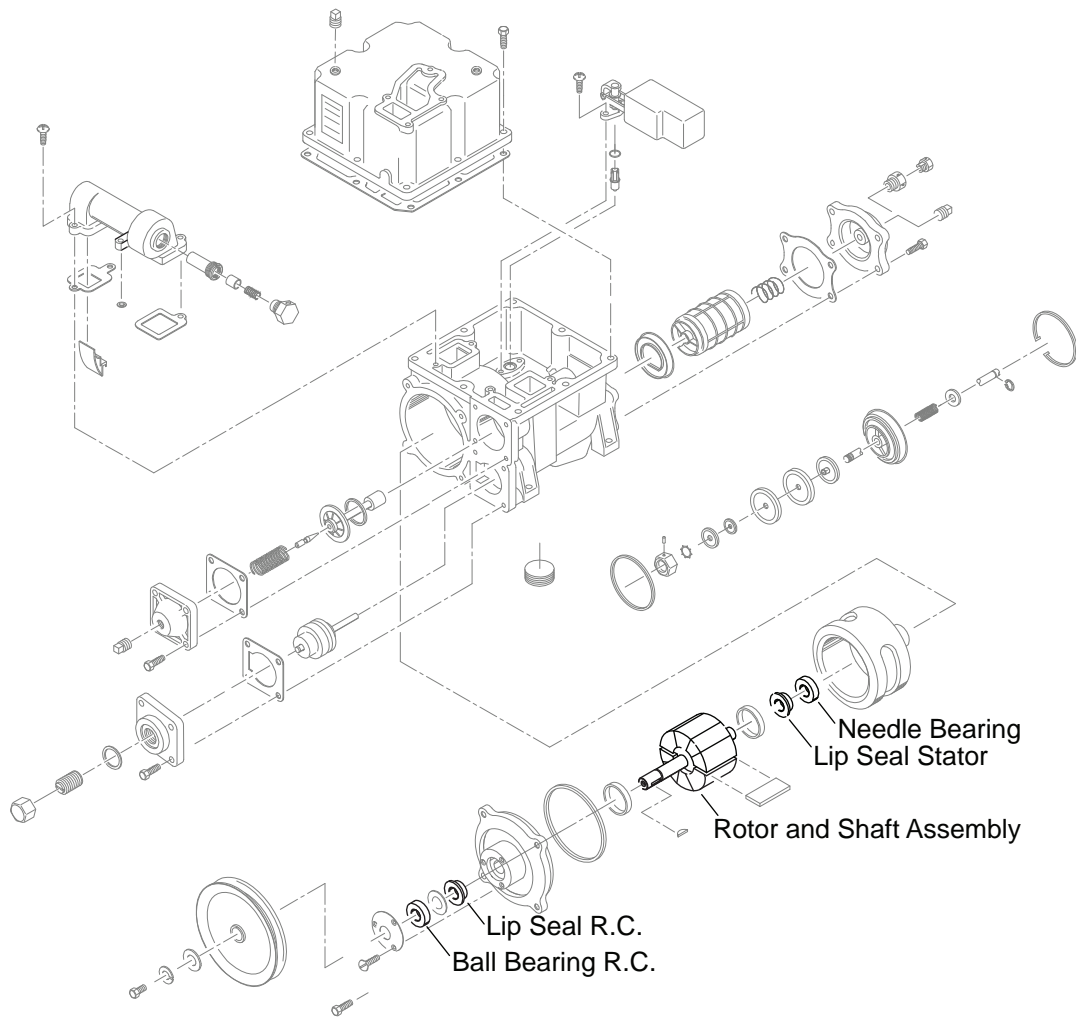
Figure 71.   4G04796   Kit Rotor & Bearing Rebuild T140 100mm

HYDRAULIC COMPONENTS

5.21.4 Additional T140 Spare Parts
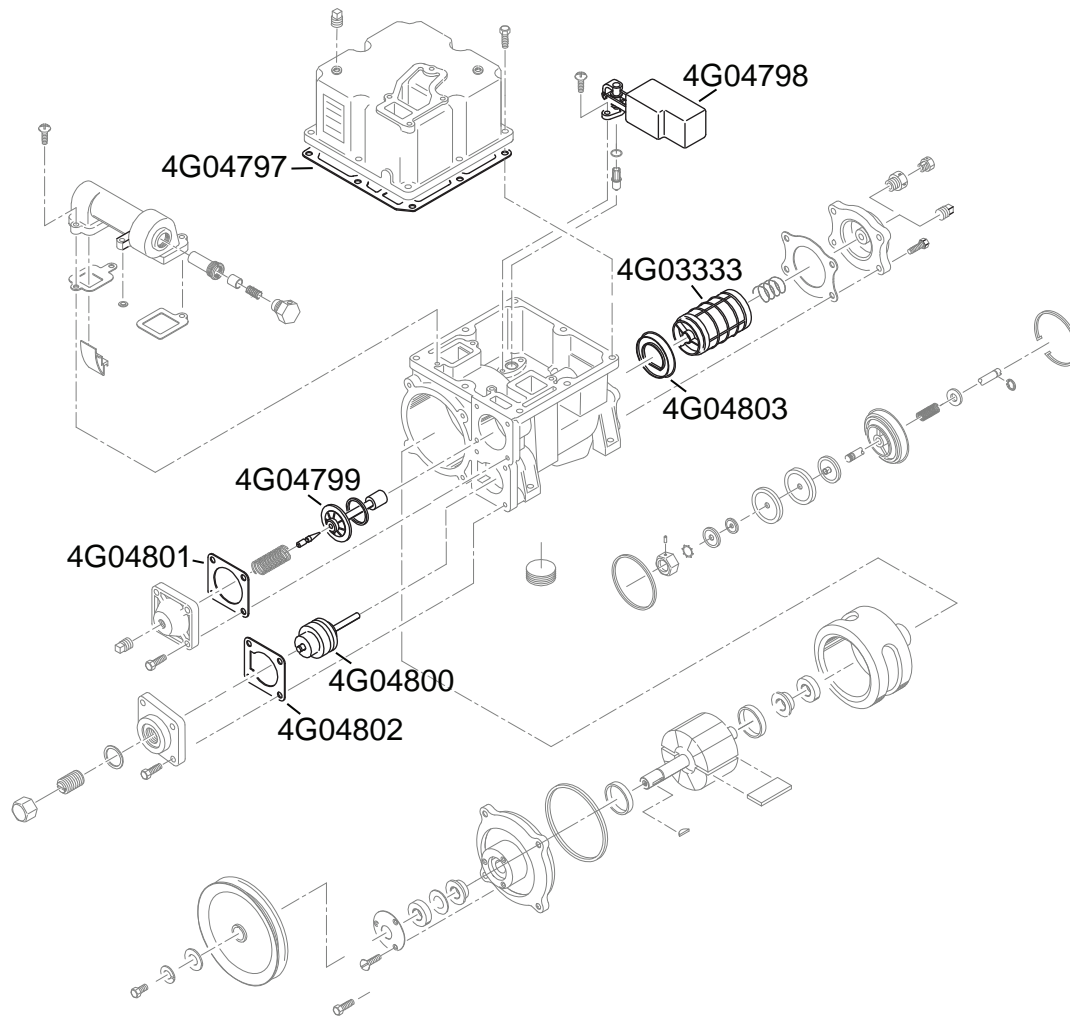
Figure 72.   Additional T140 Spare Parts

4G04797	Gasket Atmospheric Cover	**4G04801**	Gasket
4G04798	Atmospheric Float Assembly	**4G04802**	Gasket Cover B.P.
4G04799	Control Valve Assembly	**4G04803**	Filter Insert
4G04800	Bypass Valve	**4G03333**	Strainer Asm 70 Micron/200 Mesh

HYDRAULIC COMPONENTS

5.22 Pump Unit Tatsuno New Shaft Type (Part # P20075)

Available as a complete unit and individual components.

Figure 73.   Tatsuno Pump Exploded

Tatsuno Pump Parts List

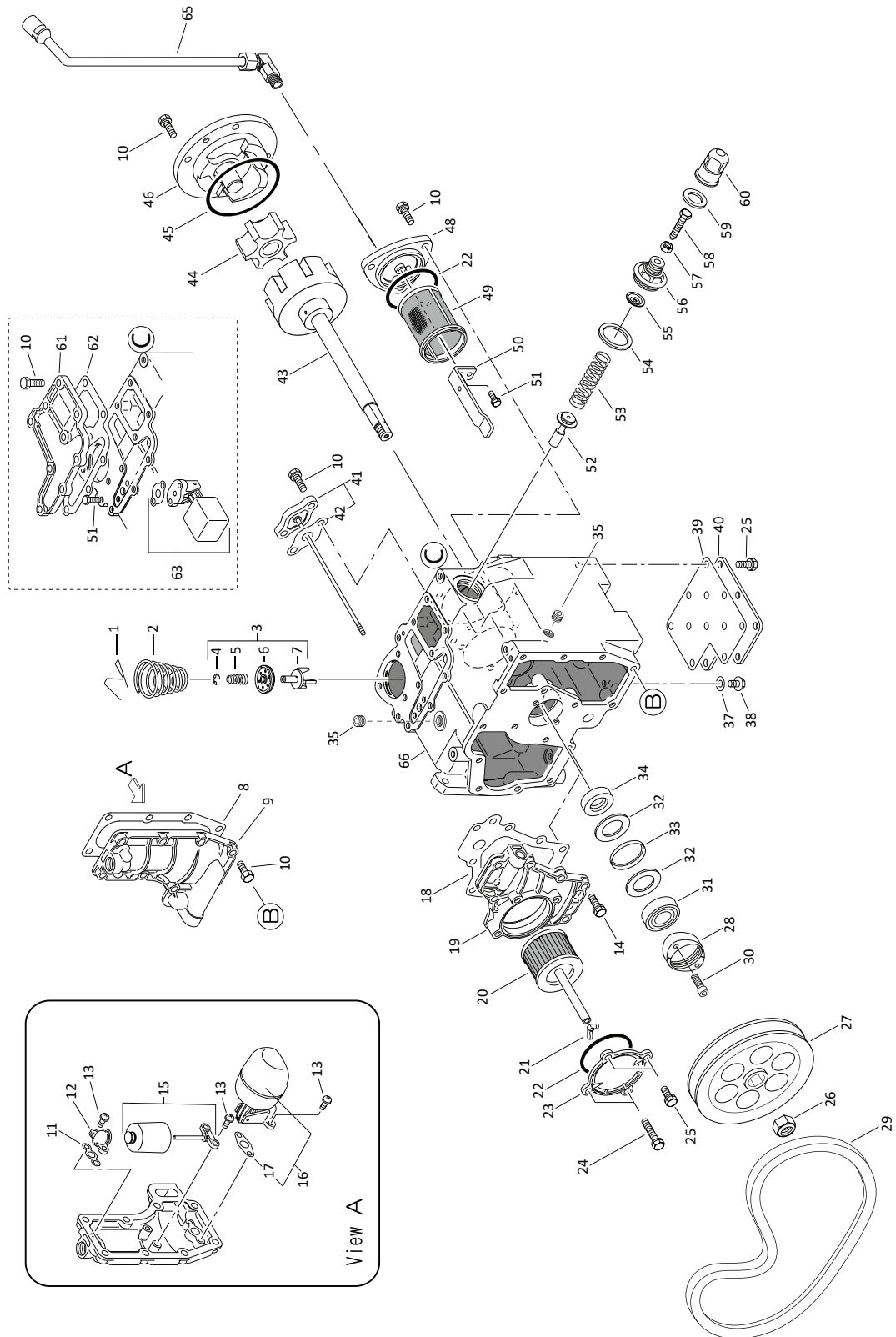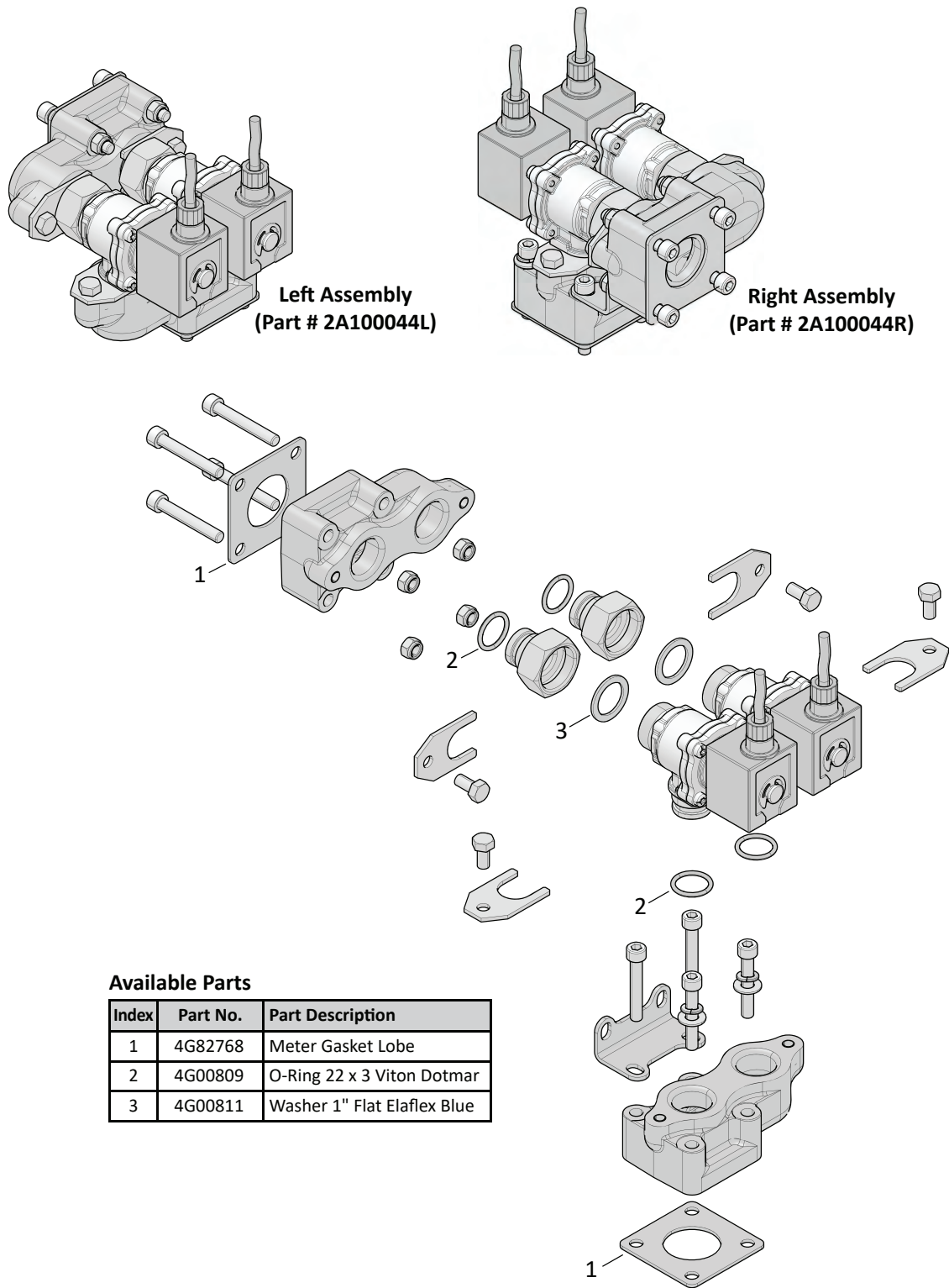| Index	Part No.	Part Description	Index	Part No.	Part Description
1	4G00193	Triangle Ring	34	4G00196	Oil Seal
2	4G00198	Spring	35	4G00194	Plug
3	4G00240	Control Valve asm	36	No Item	
4	4G00270	Retaining Ring (E Type)	37	4G00307	Gasket
5	4G00208	Spring	38	5D00314	Bolt M8 x 12 Flange
6	4G00211	Disc Control Valve Q240A	39	4G00104	Gasket
7	4G00215	Valve Stem	40	4G00308	Lower Cover
8	4G00102	Gasket	41	4G00317	Cover
9	4G00197	Float Cover Q552	42	4G00101	Gasket
10	-	Bolt with Lock Washer	43	4G00201	Wheel Assembly
11	4G00106	Gasket	44	4G00203	Pinion
12	4G00210	Valve Seat	45	4G00247	O-Ring Tatsuno G95
13	-	M6 x15 Screw with Washer	46	4G00205	Pump Cover Assembly
14	No Item		47	No Item	
15	4G00482	Overflow Prevention Valve Asm	48	4G00319	Strainer Cover
16	4G00221	Float Valve Assembly	49	P00209	Inlet Strainer
17	4G00103	Gasket	50	4G00318	Stopper
18	4G00100	Gasket	51	5D00317	Bolt M6 x 15
19	4G00001	Separator Cover	52	4G00206	By-Pass Valve
20	4G00192	Outlet Strainer	53	4G00207	By-Pass Valve Spring
21	5B00012	Nut M5 Wing	54	4G00328	Gasket
22	4G00237	O-Ring Tatsuno G65	55	4G00222	Spring Seat
23	4G00217	Strainer Cover	56	4E00700	Plug By Pass Adjustable Type
24	5D00311	Bolt M8 x 45 (was 5D00310)	57	5B00002	Nut 080
25	5D00312	Bolt M8 x 20	58	4G00223	Adjusting Bolt
26	5B03720	Nut M16	59	4G00110	Gasket
27	4G20220	Pump Pulley	60	4G00594	Cap
28	No Nmbr	Adjuster Assembly	61	4G00214	Cover Q 716
29	4G23850	Pump Belt A30	62	4G00107	Gasket
30	Item No.	Bolt Hex Socket Headed	63	4G00189	Upper Float Assembly
31	4G00256	Bearing	64	No Item	
32	5C00001	Washer PGS 0255 27	65	P87936	Test Valve Assembly
33	Item No.	Spacer	66	4G00099	Body Assembly PGS

HYDRAULIC COMPONENTS

5.23 Proportional Valve Assembly PULSE Ultra (Part # 2A100044)

Left Assembly
(Part # 2A100044L)

Right Assembly
(Part # 2A100044R)

Available Parts

Index	Part No.	Part Description
1	4G82768	Meter Gasket Lobe
2	4G00809	O-Ring 22 x 3 Viton Dotmar
3	4G00811	Washer 1" Flat Elaflex Blue

Figure 74.   Proportional Valve
Assembly PULSE Ultra

5.24 Flow Meter Tatsuno (Part # P820030)

Available as a complete unit and individual components.
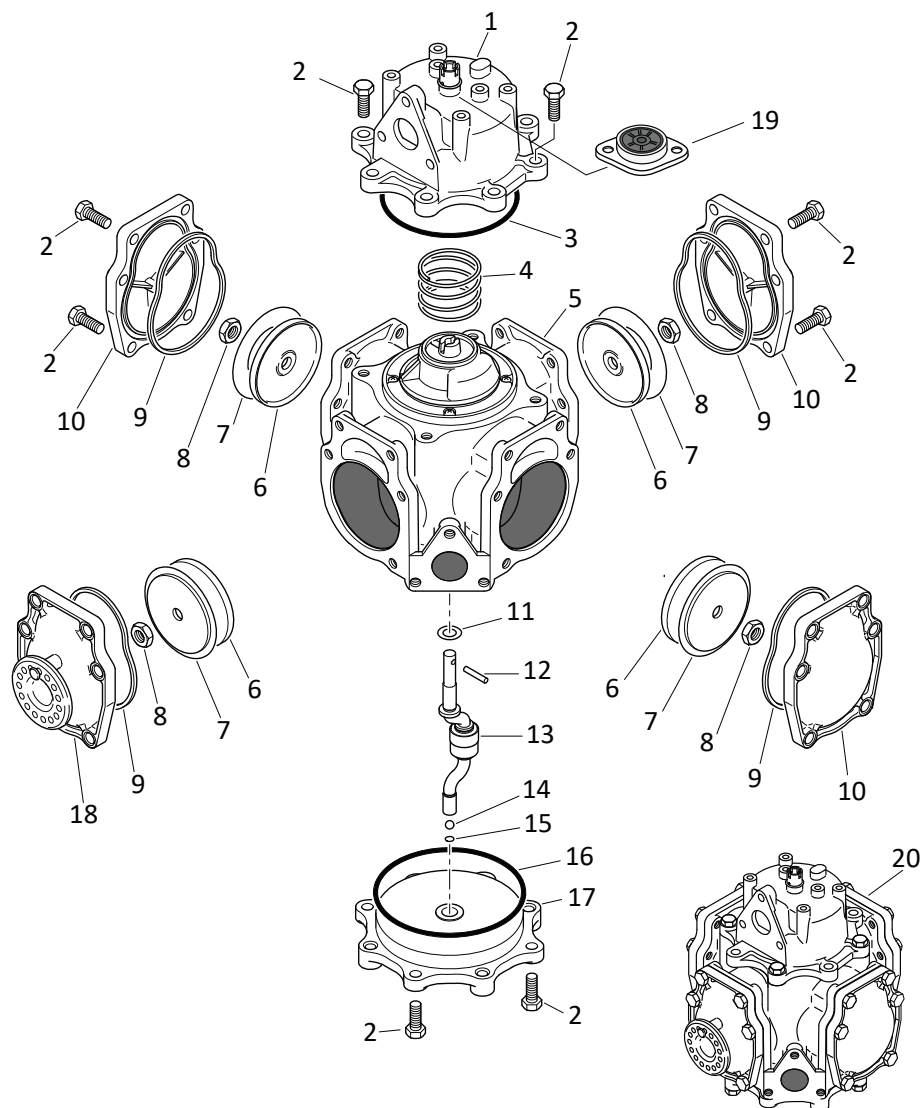
Figure 75.   Tatsuno Flow Meter (Petrol & Diesel)

Index	Part No.	Part Description	Index	Part No.	Part Description
1	4G00514	Upper Cover Assembly	11	5C00019	Washer (C)
2	5D00028	Bolt M8 x 22	12	5D00029	Grooved Pin (E Type)
3	4G00273	O-Ring Tatsuno G100	13	4G00419	Crank Shaft Assembly
4	4G00416	Spring	14	4G00420	Ball
5	4G00515	Body Assembly	15	5C00005	Washer (B)
6	4G00422	Piston	16	4G00427	O-Ring Tatsuno G110
7	4G00423	Retainer	17	4G00421	Lower Cover Assembly
8	5B00013	Nut M10 Lock	18	4G94900	Piston Cover Asm & Adjst Handle
9	4G00129	Gasket	19	4G00533	Meter Oil Seal and Retainer Asm
10	4G00426	Piston Cover	20	P820030	Flow Meter Tatsuno Spare

5.25 ASCO Kit PVXG291A111 (Part # 4G03471)

Only those parts numbered are included in the kit. The kit DOES NOT include:

- Coil and Nameplate
- Screws
- Bonnet
- Valve Body

No.	Description
(1)	Retaining clip
(2)	Spring washer
(3)	Spring (core asm)
(4)	Core asm
(5)	Guide (core asm)
(6)	Spring (piston)
(7)	Piston asm
(8)	Lip seal, piston
(9)	O-Ring (valve body)

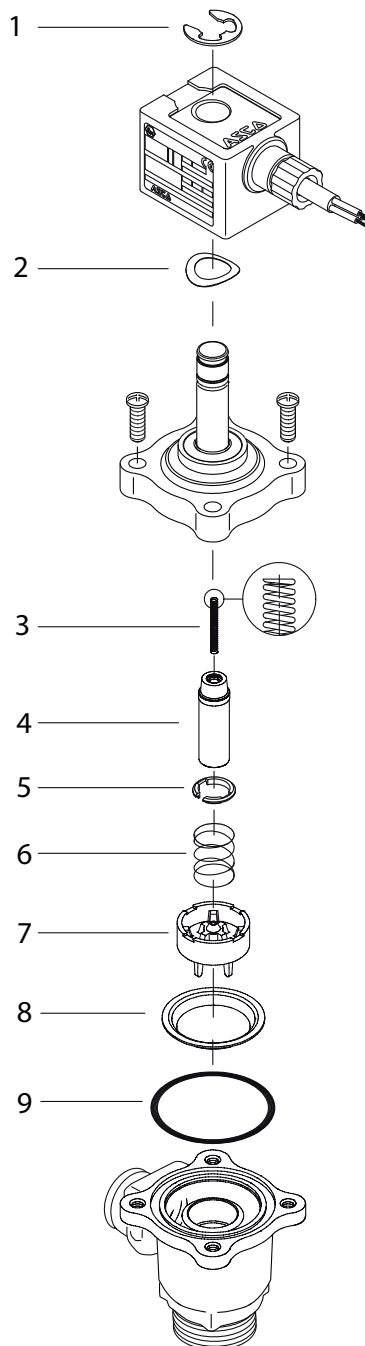| Part No.	Part Description
4G03471	ASCO Kit PVXG291A111

Figure 76.   ASCO Kit PVXG291A111

5.26 Delivery Pipes

Each delivery pipe comes with the necessary parts required for securing it into the hose column.

Contact SOM with serial number, side and position to ensure correct pipe is ordered.

6   HEAD CABINET

The PULSE Head Cabinet contains pump electronics and a User Interface and is available in small and large sizes. The variations of the head cabinet use many common parts. The larger size provides extra space for either an OPT or static advertising where graphic images may be displayed.

The information in this section describes each type of PULSE Head Cabinet as well as the internal components.

Contact SOM with your serial number to ensure the correct UI or head assembly is ordered.

PULSE Control Assemblies

It should be noted that a generic Control Assembly is shown in the User Interface exploded diagrams. Information regarding the specific model required may be obtained at the time of ordering.

User Interfaces (UI)

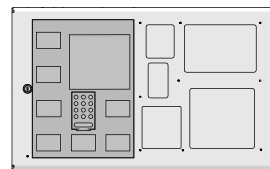The PULSE Head Cabinet is available as a fully assembled unit as well as selected individual parts.

The cable cover differs in size between the L and C Series.

The six unit variations are:

1.   PULSE Fuelling UI

2.   PULSE Advert UI
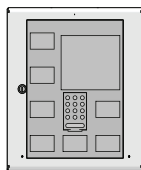
3.   PULSE Enhanced UI

4.   PULSE L Payment UI PATP
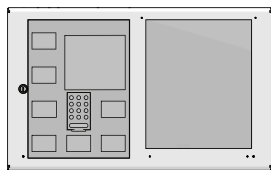
5.   PULSE Payment UI G6
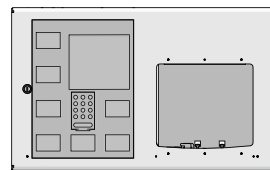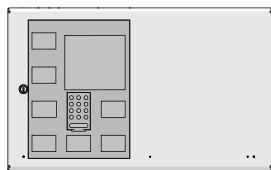
6.   PULSE Q DGD UI Std/DLU2
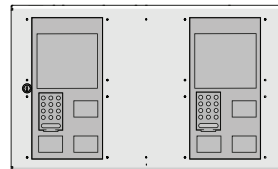
PATP = Pay at the Pump
DGD = Dedicated Grade Display

HEAD CABINET

6.1 PULSE Fuelling UI Std *

L Series = (Part # 2A95489)*
C Series = (Part # 2A95489C)*
Q Series = (Part # 2A95489Q)*
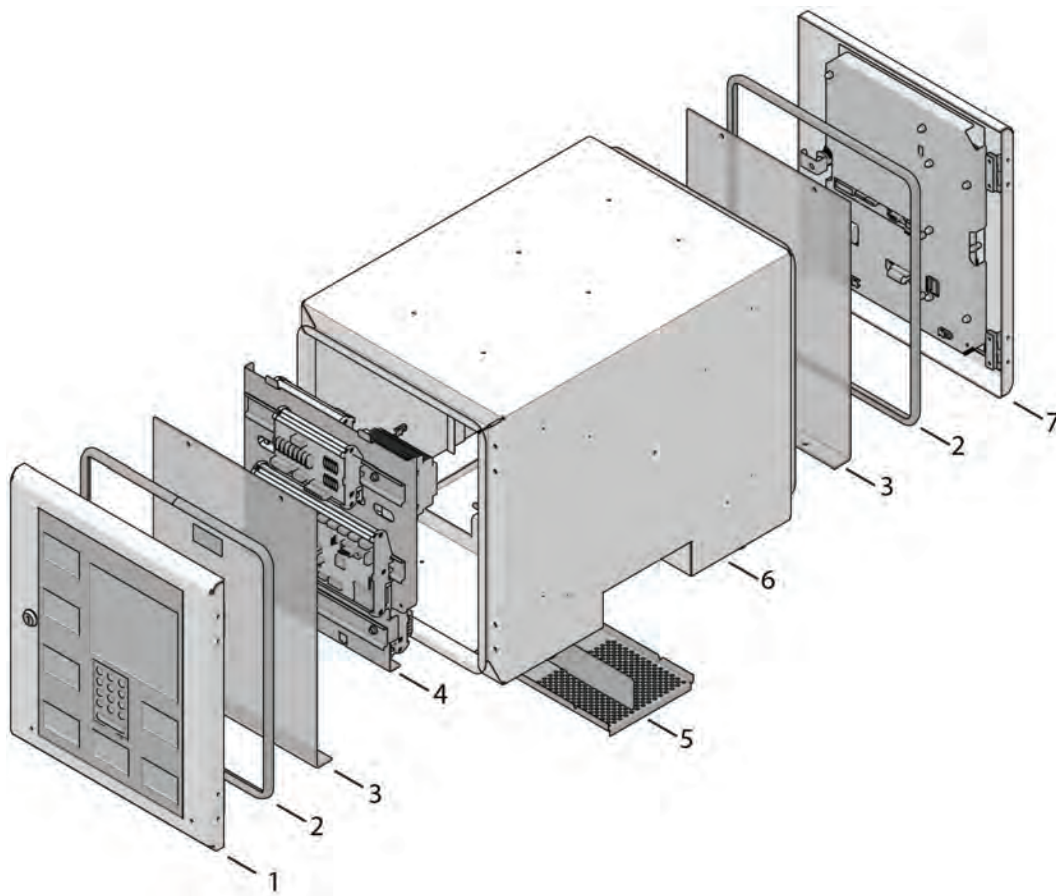
Index	Part No.	Part Description
1	2A100017*	PULSE Fuelling UI Door Front
2	4G00817	Seal Sponge Rubber Anti-Vibration
3	4G95378	Mains Cover
4	Varies	PULSE Generic Control Asm
5	2A95476*	Small Cable Cover Asm L
5	2A95185*	Small Cable Cover Asm C/Q
6	2A95072L*	PULSE L SII Small UI Cabinet Asm
7	2A100019*	PULSE Fuelling UI Door Rear

* Stipulate panel colour, door graphics and head decals when ordering.

Figure 77.   PULSE Fuelling UI Std *

6.2 PULSE Advert UI Std *

HEAD CABINET

L Series = (Part # 2A95490)*
C Series = (Part # 2A95490C)*
Q Series = (Part # 2A95490Q)*
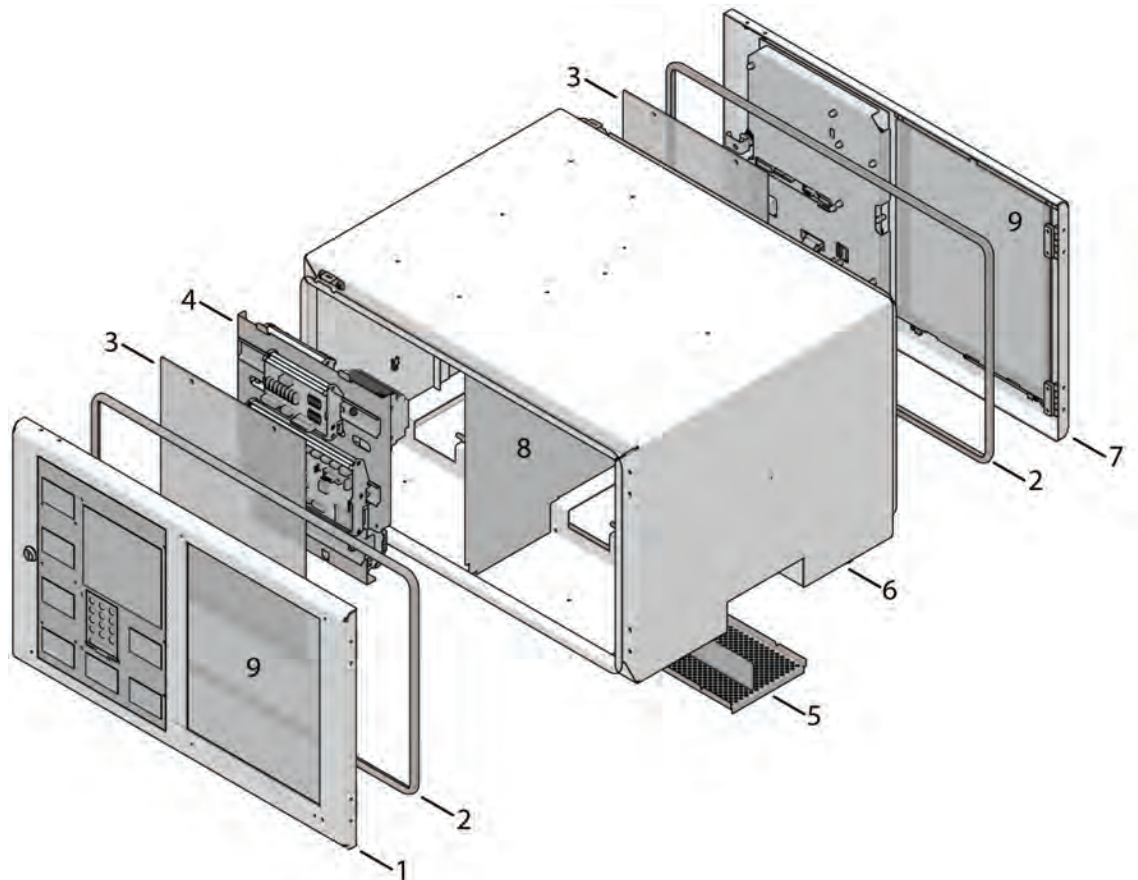
Index	Part No.	Part Description
1	2A100159*	PULSE Advert UI Door Front
2	4G00817	Seal Sponge Rubber Anti-Vibration
3	4G95378	Mains Cover
4	Varies	PULSE Generic Control Asm
5	2A95479*	Large Cable Cover Asm L
5	2A95184*	Large Cable Cover Asm C/Q
6	2A95491L*	PULSE L SII Large UI Cabinet Asm
7	2A100160*	PULSE Advert UI Door Rear
8	4G95725	Protective Side Cover
9	4G95471	Ad Window Large Head
10	4P27060	Tape Inseal 5669 15 x 0.8mm (not shown)

* Stipulate panel colour, door graphics and head decals when ordering.

Figure 78.   PULSE Advert UI Std *

HEAD CABINET

6.3 PULSE Enhanced UI Std *

L Series = (Part # 2A95714*)
C Series = (Part # 2A95714C*)

Index	Part No.	Part Description
1	2A100157*	PULSE Enhanced UI Door Front
2	4G00817	Seal Sponge Rubber Anti-Vibration
3	4G95378	Mains Cover
4	Varies	PULSE Generic Control Asm
5	2A95479*	Large Cable Cover Asm L Series
5	2A95184*	Large Cable Cover Asm C/Q Series
6	2A95491L*	PULSE L SII Large UI Cabinet Asm
7	2A100158*	PULSE Enhanced UI Door Rear
8	4G95725	Protective Side Cover

* Stipulate panel colour, door graphics and head decals when ordering.

Figure 79.   PULSE Enhanced UI Std *

6.4 PULSE Payment UI PatP Std *

L Series = (Part # 2A95723)*
C Series = (Part # 2A95723C)*

HEAD CABINET

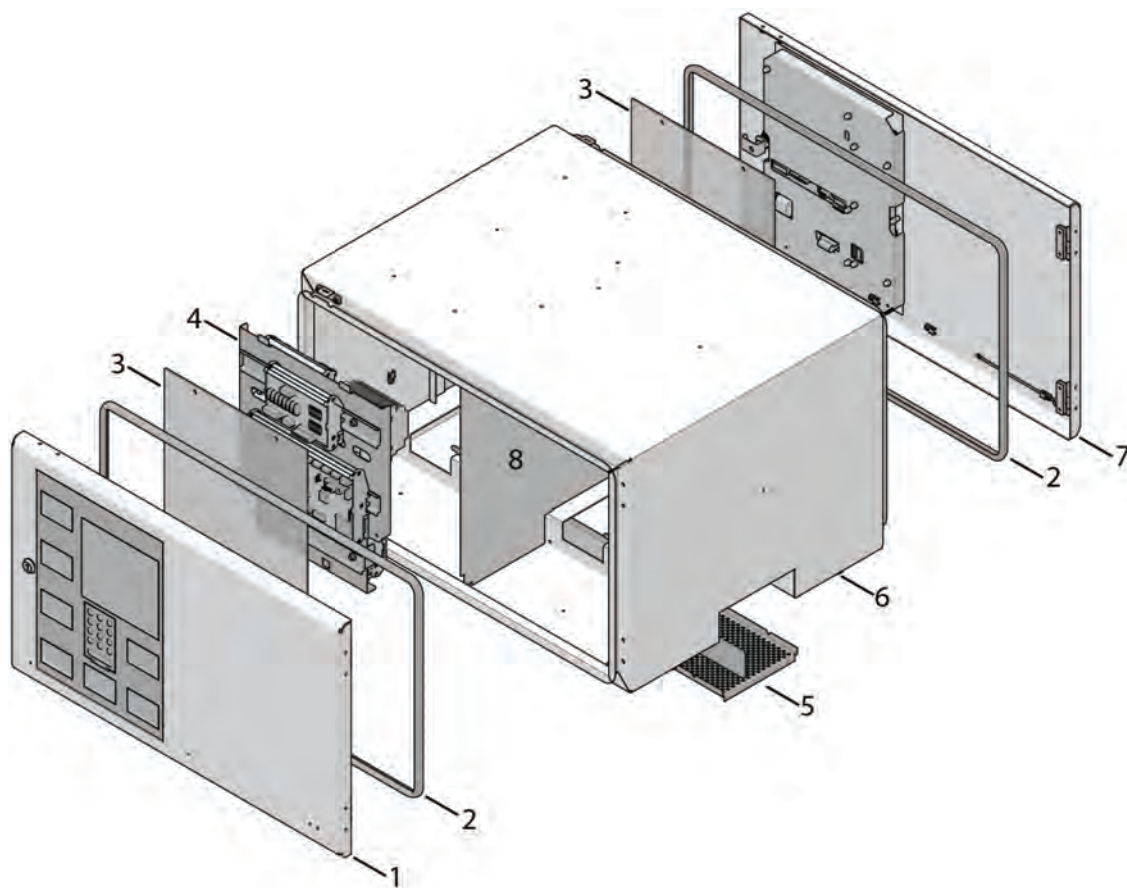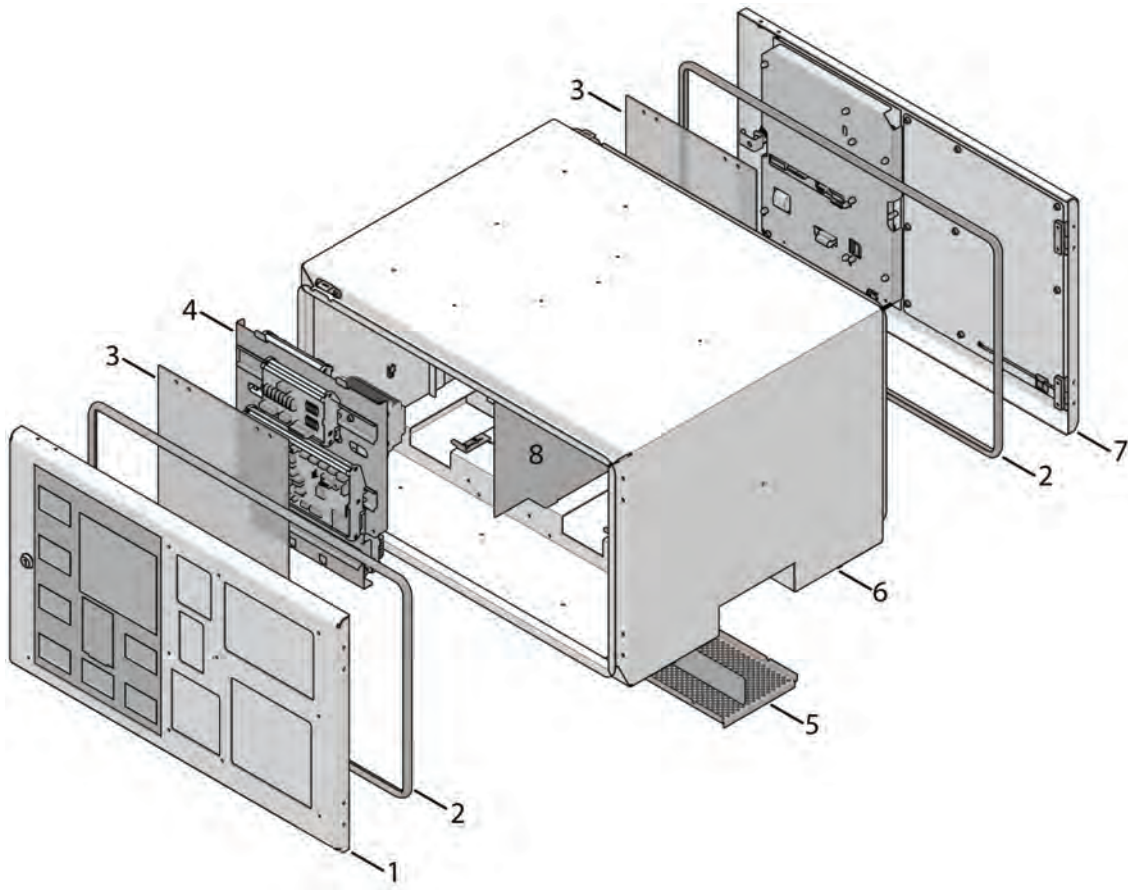| Index	Part No.	Part Description
1	2A95485*	PULSE Payment UI PatP Door Front
2	4G00817	Seal Sponge Rubber Anti-Vibration
3	4G100026	PatP Mains Cover
4	Varies	PULSE Generic Control Asm
5	2A95479*	Large Cable Cover Asm L Series
5	2A95184*	Large Cable Cover Asm C/Q Series
6	2A95491*	PULSE Large UI Cabinet Asm
7	2A95486*	PULSE Payment UI PatP Door Rear
8	4G100120	PatP Side Cover

* Stipulate panel colour, door graphics and head decals when ordering.

Figure 80.   PULSE Payment UI PatP Std *

6.5 PULSE Payment UI G6 Std *

L Series = (Part # 2A95753)*
C Series = (Part # 2A95753C)*
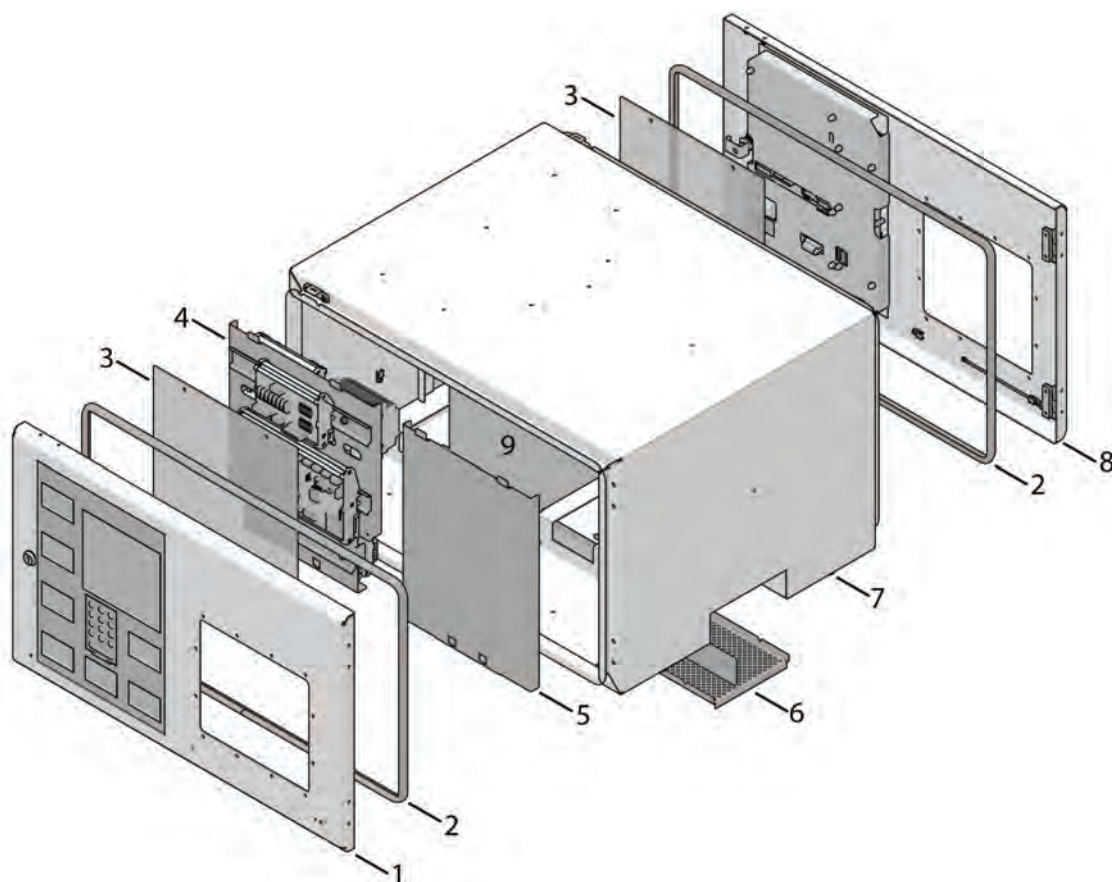
Index	Part No.	Part Description
1	2A100163*	PULSE Payment UI G6 Door Front
2	4G00817	Seal Sponge Rubber Anti-Vibration
3	4G95378	Mains Cover
4	Varies	PULSE Generic Control Asm
5	4G95756	Secondary Gear Plate
6	2A95479*	Large Cable Cover Asm L Series
6	2A95184*	Large Cable Cover Asm C/Q Series
7	2A95491L*	PULSE L SII Large UI Cabinet Asm
8	2A100164*	PULSE Payment UI G6 Door Rear
9	4G95725	Protective Side Cover

* Stipulate panel colour, door graphics and head decals when ordering.

Figure 81.   PULSE Payment UI G6 Std *

6.6 PULSE DGD UI Std/DLU2 *

L Series = (Part # 2A95920L)*
C Series = (Part # 2A95920C)*
Q Series = (Part # 2A95290Q)*
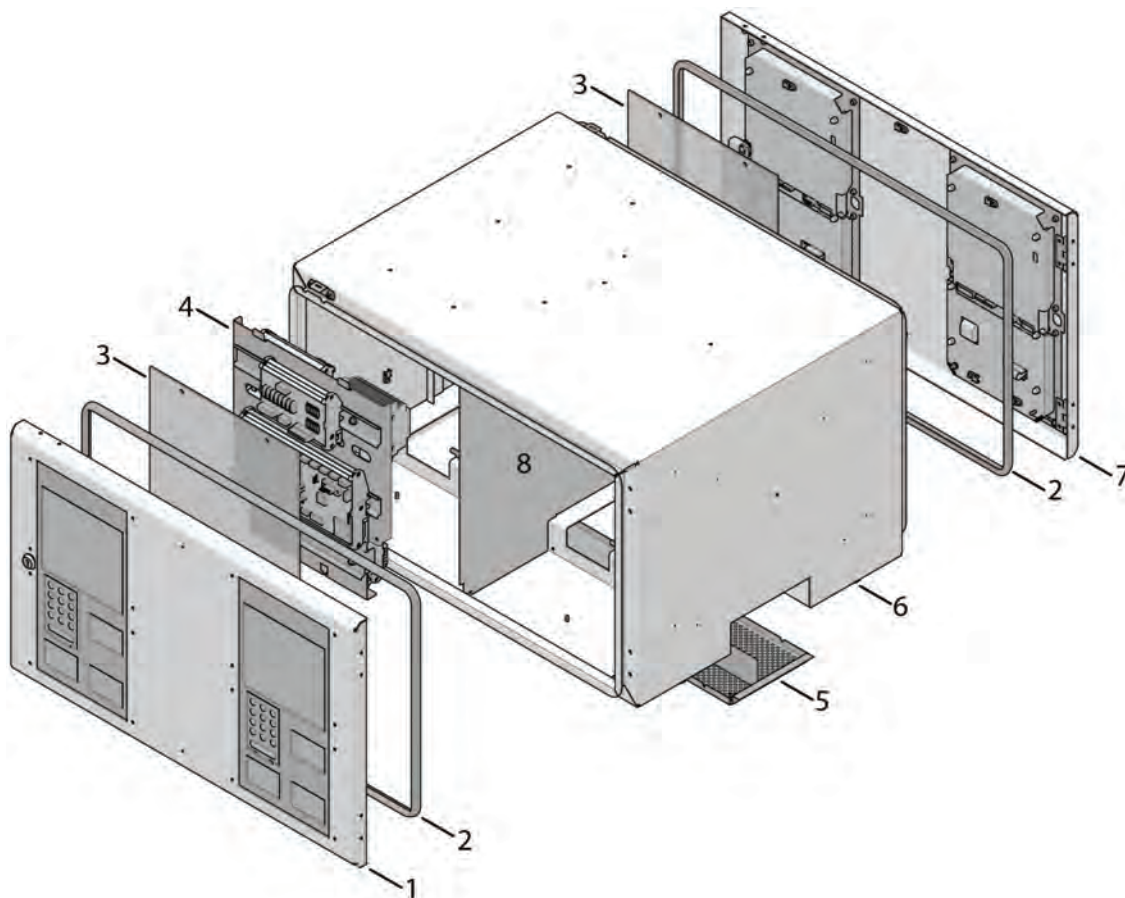
Index	Part No.	Part Description
1	2A95921*	PULSE DGD/DGDS UI Door Front
2	4G00817	Seal Sponge Rubber Anti-Vibration
3	4G95378	Mains Cover
4	Varies	PULSE Generic Control Asm
5	2A95479*	Large Cable Cover Asm L Series
5	2A95184*	Large Cable Cover Asm C/Q Series
6	2A95491*	PULSE Large UI Cabinet Asm
7	2A95911*	PULSE DGD/DGDS UI Door Rear
8	4G95725	Protective Side Cover

* Stipulate panel colour, door graphics and head decals when ordering.

Figure 82.   PULSE Q DGD UI Std/DLU*

HEAD & SPREADER LIGHTING

7   HEAD LIGHTING

7.1 PULSE UI Lighting Assembly (Part # P100442)
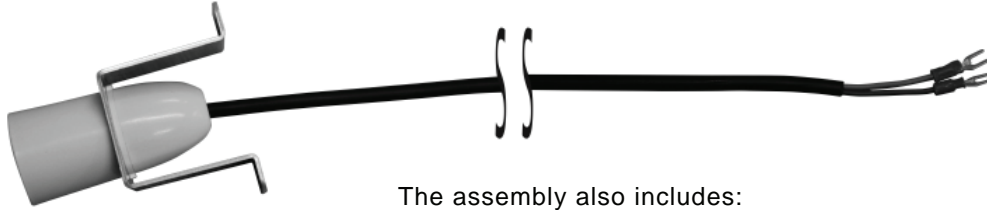
The assembly also includes:

   1 x LED bulb

   2 x M4 nuts

8   USER INTERFACE DOOR ASSEMBLIES

The inside of the User Interface door is fitted with PCB's that read the key pads and drive the LCD displays, backlights and the mechanical totes (where fitted).

The front and rear doors are similar for each model.

NB: Earlier versions will need upgrading when being replaced.

The smaller fuelling doors, front and rear consist of identical parts, the orientation of the assembly is the only variant.

There are many other variants of each door and its model. All doors have large and small LCD displays that can be configured to display fuelling information, messaging or promotions.

The figure below illustrates fittings common to most doors.

NOTE: Keys are supplied with the Cam Lock but may be requested separately.
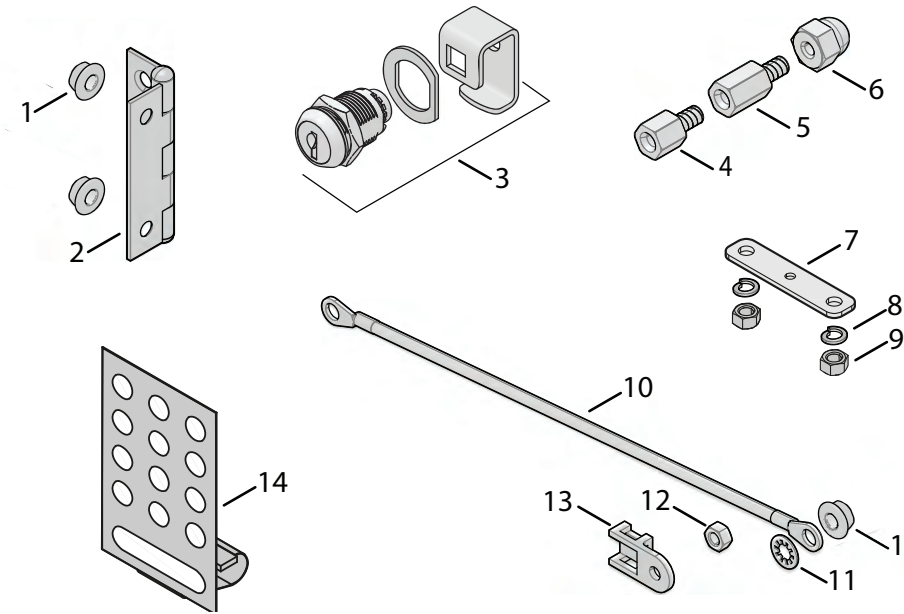
Index	Part No.	Part Description	Index	Part No.	Part Description
1	(x3)	Nut M4 Flanged Serrated ZP	8	(x2)	Washer M4 Spring S/S T304
2	4G00816	Hinge Plated	9	(x2)	Nut M4 ZP
3	P04618	Lock Southco Soucm-2-2C101-2SB	10	2K00778	Cable Asm Earth Bond Door
4	4G66706	Spacer 1/4"Aluminium M+F	11	(x1)	Washer M3 Internal Lock
5	4G66709	Spacer 3/8" Aluminium M+F	12	(x1)	Nut M3 ZP
6	(x1)	Nut Dome Nylon PNN 6-32 C	13	4G66281	Cable Tie Mount Nylon Screw Fix 5mm
7	4G95705	Latch Plate	14	2M95201	Membrane Keypad PULSE

Figure 83.   Common door fittings

USER INTERFACE DOOR ASSEMBLIES

8.1 Fuelling UI Door Front and Rear

Front (Part # 2A100017*)　　　　　　**Rear (Part # 2A100019*)**
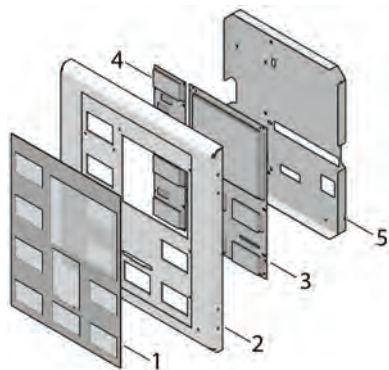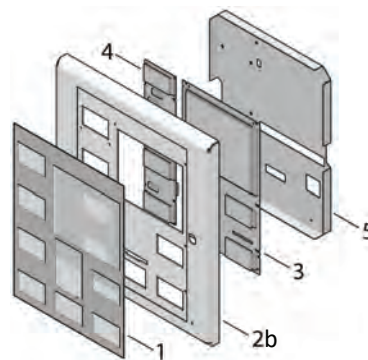
Index	Part No.	Part Description
1	Varies	See SOM for appropriate graphic
2	4G100018*	Door Bezel Fuelling UI Front
2b	4G100020*	Door Bezel Fuelling UI Rear

Index	Part No.	Part Description
3	P98315	PULSE User Interface PCA
4	P98312	PULSE Head Price PCA
5	4G100014	Interface Cover

* Stipulate panel colour, door graphics and head decals when ordering.

Figure 84.　　Fuelling UI Door Front and Rear

8.2 Advert UI Door Front and Rear

Front (Part # 2A100159*)　　　　　　**Rear (Part # 2A100160*)**
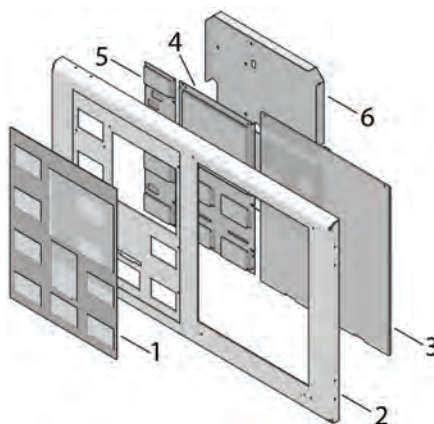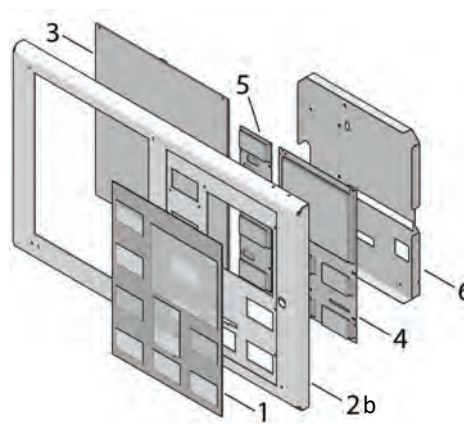
Index	Part No.	Part Description
1	Varies	See SOM for appropriate graphic
2	P05154*	Door Bezel Advert UI Front
2B	P05155*	Door Bezel Advert UI Rear
3	4G95471	Ad Window Large Head

Index	Part No.	Part Description
4	P98315	PULSE User Interface PCA
5	P98312	PULSE Head Price PCA
6	4G100014	Interface Cover

* Stipulate panel colour, door graphics and head decals when ordering.

Figure 85.　　Advert UI Door Front and Rear

8.3 Enhanced UI Door Front and Rear

Front (Part # 2A100157*)   **Rear (Part # 2A100158*)**

Index	Part No.	Part Description
1	Varies	See SOM for appropriate graphic
2	4G100000*	Door Bezel Enhanced UI Front
2b	4G100027*	Door Bezel Enhanced UI Rear

Index	Part No.	Part Description
3	P98315	PULSE User Interface PCA
4	P98312	PULSE Head Price PCA
5	4G100014	Interface Cover

* Stipulate panel colour, door graphics and head decals when ordering.

Figure 86.   Enhanced UI Door Front and Rear

8.4 Payment UI G6 Door Front and Rear

Front (Part # 2A100163*)   **Rear (Part # 2A100164*)**

Index	Part No.	Part Description
1	Varies	See SOM for appropriate graphic
2	4G100005*	Door Bezel Payment UI G6 Front
2b	4G100004*	Door Bezel Payment UI G6 Rear

Index	Part No.	Part Description
3	P98315	PULSE User Interface PCA
4	P98312	PULSE Head Price PCA
5	4G100014	Interface Cover

*** Stipulate panel colour, door graphics and head decals when ordering.**

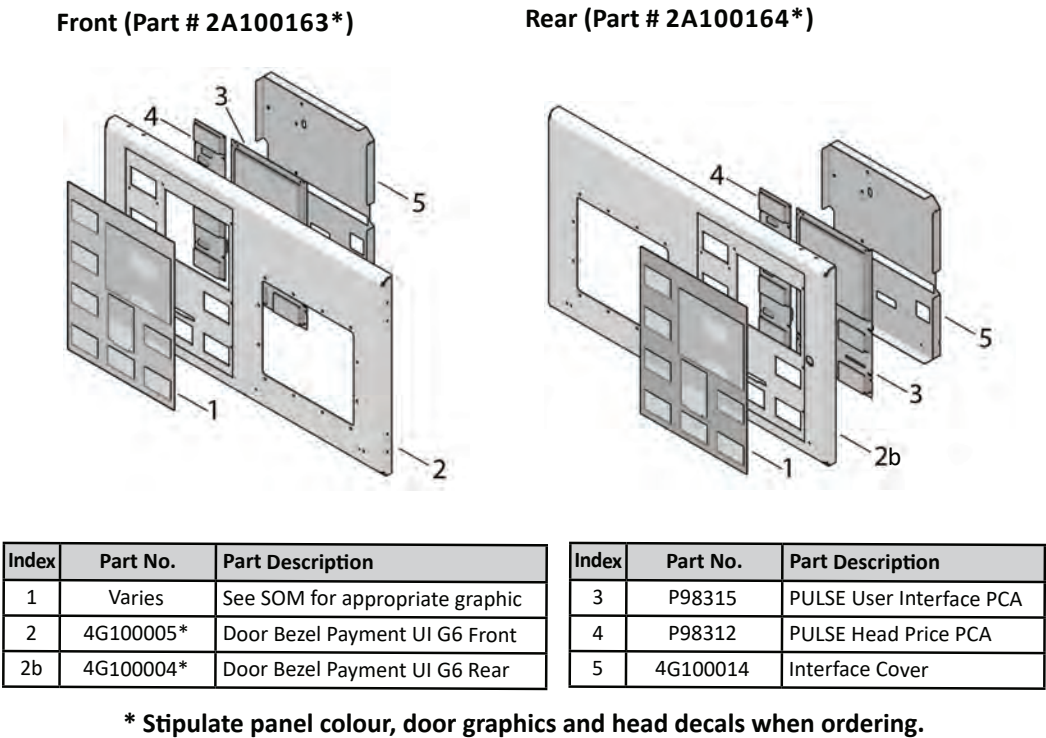**Figure 87.   Payment UI G6 Door Front and Rear**

9   PULSE CONTROL ASSEMBLY

Most of the PULSE Control Assembly components are mounted to the gear plate located inside the head. This is the central processing hub of the entire dispenser. The Multiplexer Module is usually located within the hydraulic cabinet. Where Ultra Diesel is used the Multiplexer may reside within the Head Cabinet.

The arrangement of the PCA's mounted on the gear plate can vary depending on the functionality of the dispenser. For example extra boards and components are required for Vapour Recovery, LPG, High flow diesel and DEF. These are just some variant examples.

The following PCA assemblies and their functions are described individually.

- PSU DIN Rail 24V 7.5A 180W (P04944)

- PULSE DCE Central Controller (New - Part # P95996B or P95996BC)

- PULSE Central Control Module (Obsolete - Part # P95996)

- PULSE Stack Control Module (Part # P95995)

- PULSE Valve Drive Module 24V (Part # P95993)

- PULSE AC Solenoid Drive PCA (Part # P98318)

- PULSE Motor Drive Module (Part # P95992)

- PULSE Stack Control Module DC (Part # P95995DC)

- PULSE Stack Control Module AC (Part # P95995AC)

- PULSE IS Barrier Module (Part # P95994)

- PULSE MUX Module (Part # P95989)

- PULSE LPG Coriolis Meter Module (Part # P95987)

- PULSE User Interface PCA (Part # P98315)

- PULSE Head Price PCA (Part # P98312)

- PULSE Auxiliary PSU PSA In Housing (Part # P02880)

NOTE:

Individual components on PCA's must not be replaced or repaired with the exception of fuses. The fuses that are replaceable and their respective part numbers are described in the subsequent diagrams and their relevant tables.

9.1 Standard PULSE Control Assembly

The illustration below represents an example of a standard PULSE Control Assembly and the main PCA components. The example does not include extra components for functionality such as Vapour Recovery or LPG.

Control Board Front   Control Board Rear
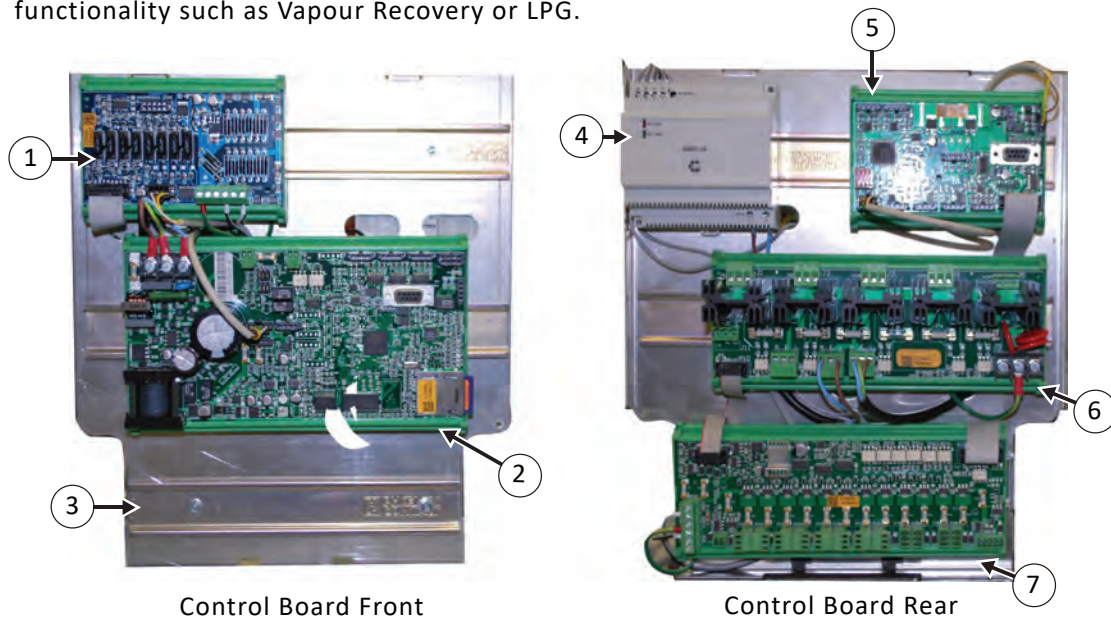
Index	Part No.	Part Description
1	P95994	PULSE IS Barrier Module
2	P95996	PULSE Central Control Module (Obsolete - Replaced by P95996B or P95996BC)
3	4G95382	Centre Plate (Mounting Plate)
4	P2M00724	PSU DIN Rail 24V 100VA AMR5-24
4a	P04944	PSU DIN Rail 24V 7.5A 180W
5	P95995	PULSE Stack Control Module
6	P95992	PULSE Motor Drive Module
7	P95993	PULSE Valve Drive Module 24V

Figure 88.   Example of a Standard PULSE Control Assembly

Alternative Power Supply Unit (PSU)

Simultaneous deliveries using six or more DC valves can require more power than the standard factory fitted PSU (P2M00724) is able to provide.

This standard PSU is rated at 100W with a plastic moulded body and only requires a two-core mains cable.

An alternative PSU (P04944) is now available which is able to provide sufficient power (180W) to run simultaneously deliveries using six or more DC valves. It is larger in size, has a metal body, and requires a three-core mains cable.
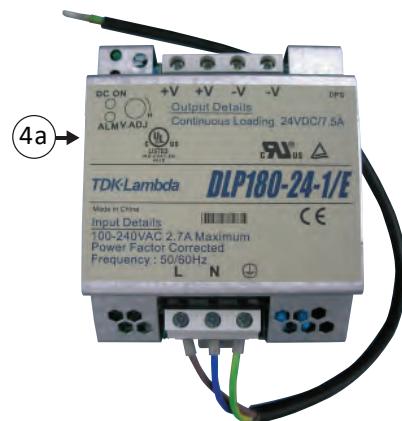

Figure 89.   PSU DIN Rail 24V 7.5A 180W (P04944)

9.2 PULSE DCE Central Controller (Part # P95996B/P95996BC)

The DCE (Data Centre Enabled) Central Controller coordinates the dispensing of fuel, communicating with the Point of Sale and the Vapour Recovery system if present. It also provides power for the head cabinet modules and manages communication between the Stack Control and Display modules.

As from April 2017 the DCE Central Controller is factory fitted to all PULSE units. It uses a Micro SD Card.

Instructions for fitting the DCE Central Controller are provided in the Install Note 2A04434 PULSE Central Controller Module DCE.

The main differences between the two available DCE Central Contollers are:

P95996B - Suitable for any PULSE unit but requires additional steps to load the config file.

P95996BC - Ordered for a specific PULSE unit and comes with the correct config file already loaded. Please provide the correct serial number for a unit when ordering.
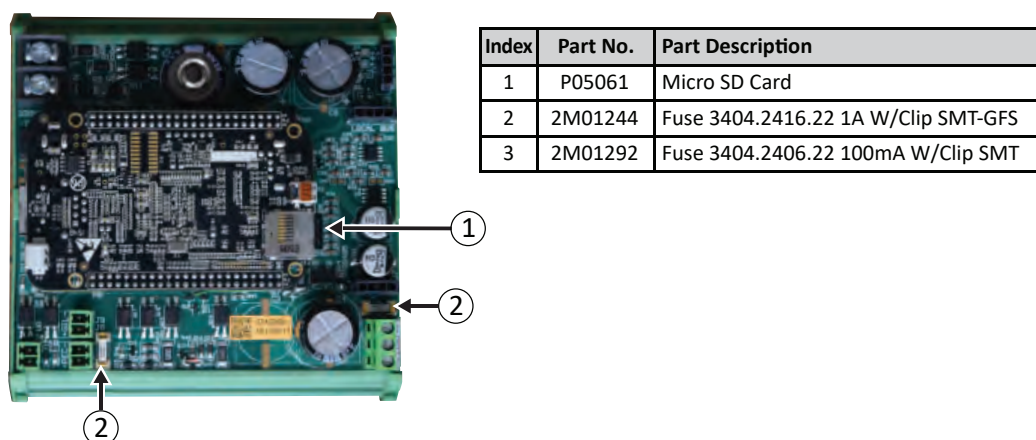
Index	Part No.	Part Description
1	P05061	Micro SD Card
2	2M01244	Fuse 3404.2416.22 1A W/Clip SMT-GFS
3	2M01292	Fuse 3404.2406.22 100mA W/Clip SMT

Figure 90.   PULSE DCE Central Controller

9.3 PULSE Central Control Module- Obsolete (Part# P95996)

Replacement parts are available as follows:

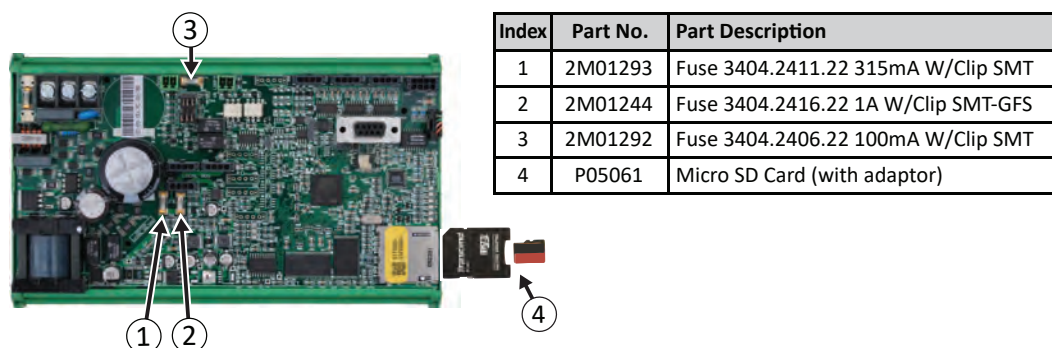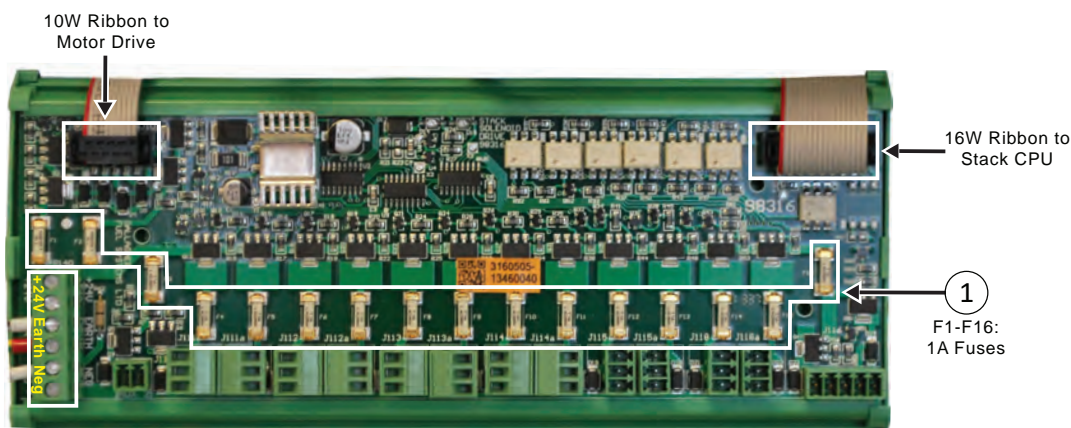| Index	Part No.	Part Description
1	2M01293	Fuse 3404.2411.22 315mA W/Clip SMT
2	2M01244	Fuse 3404.2416.22 1A W/Clip SMT-GFS
3	2M01292	Fuse 3404.2406.22 100mA W/Clip SMT
4	P05061	Micro SD Card (with adaptor)

Figure 91.   Obsolete PULSE Central Control Module

9.4 PULSE Valve Drive Module 24V (Part # P95993)

The Solenoid Drive provides the 24V PWM drive to all proportional solenoid valves in the dispenser, as well as the control signals for the Motor Drive Module.
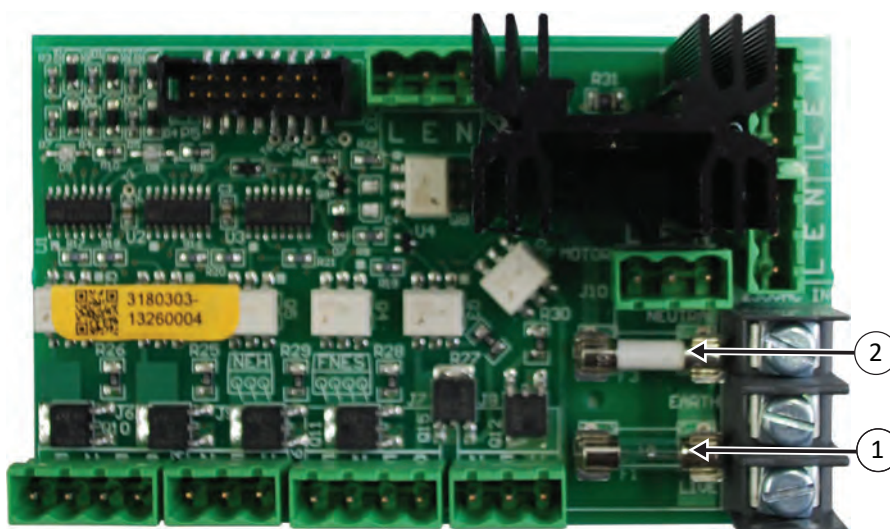

Index	Part No.	Part Description
1	2M01244	Fuse 3404.2416.22 1A W/Clip SMT-GFS

Figure 92.   PULSE Valve Drive Module

9.5 PULSE AC Solenoid Drive PCA (Part # P98318)

Allows the switching of 230VAC solenoid valves. It replicates the required DC solenoid switches as AC switches, so that LPG or +Blue can be dispensed from a multi-product dispenser.
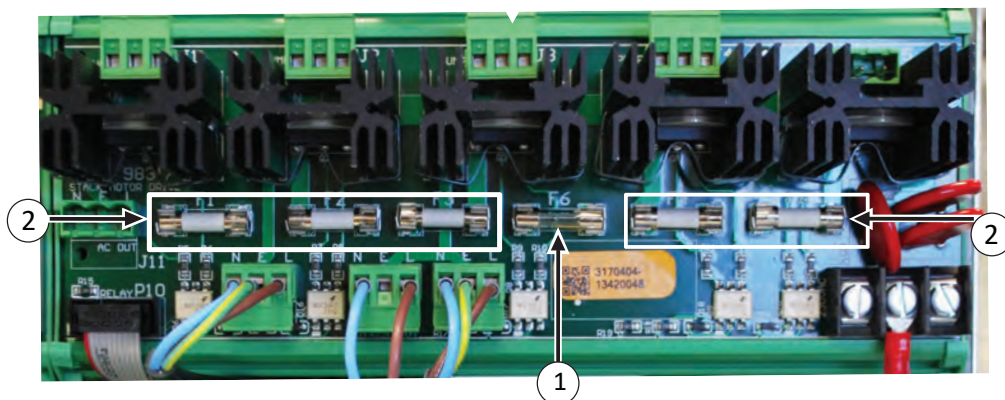

⚠ F1 must use 1.5kA breaking capacity rated fuse

Index	Part No.	Part Description
1	2M06360	Fuse 1A SLO BLO (20x5) 1.5kA
2	2M66085	Fuse 10A SLO BLO HBC (20x5)

Figure 93.   PULSE AC Solenoid Drive PCA

9.6 PULSE Motor Drive Module (Part # P95992)

The Motor Drive Module provides high power switching to pump motors and is the primary 230VAC connection to the control system.
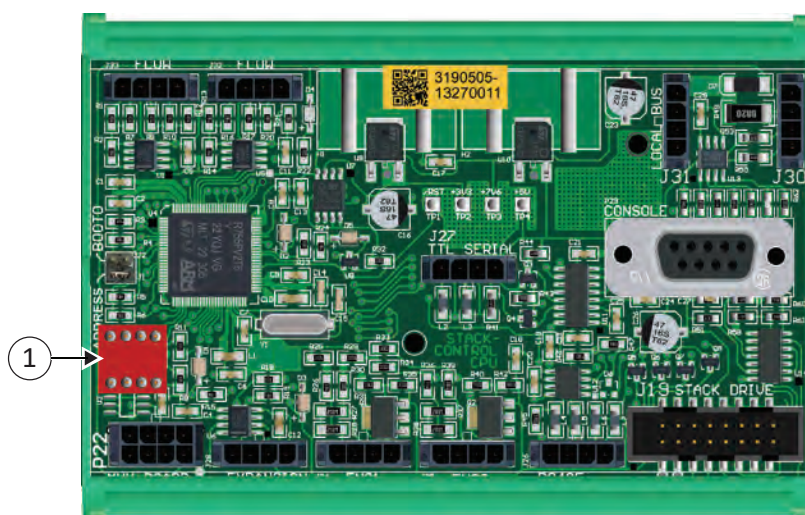

Index	Part No.	Part Description
1	2M66690	Fuse 2A SLO BLO (20x5)
2	2M66085	Fuse 10A SLO BLO HBC (20x5)

Figure 94.   PULSE Motor Drive Module

9.7 PULSE Stack Control Module (Part # P95995)

The Stack Control manages the delivery in real time performing all sensing and measurement functions. It controls pump motors and solenoid valves via the Solenoid Drive and Motor Drive Modules. The Stack Control also senses nozzle activity via the multiplexer module.

The only replaceable part on the Stack Control is the FRAM module.

Index	Part No.	Part Description
1	P00727	Fram SO8 To Dip Adapter PCA

Figure 95.   PULSE Stack Control Module

9.8 PULSE Stack Control Module DC (Part # P95995DC)

The Integrated Stack Control Module combines the functionality of 3 modules into one: the Stack Control Module: the Solenoid Drive Module and the Motor Control Module. There are two variants. One switches the 230VAC solenoid valves and the other drives 24VDC proportional solenoid valves. The Integrated Stack Control Module connects to the Multiplexer Module via the Barrier Module.
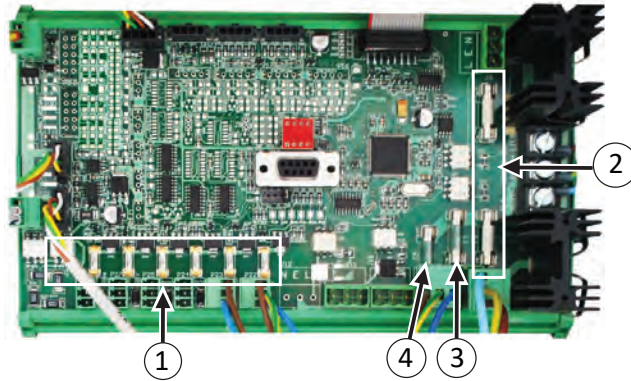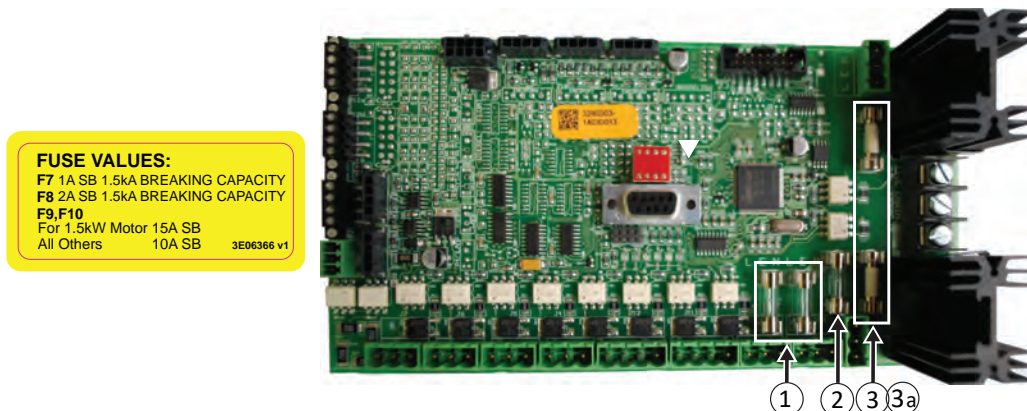

F7, F8 must use 1.5kA breaking capacity rated fuses

Index	Part No.	Part Description
1	2M01244	Fuse 3404.2416.22 1A W/Clip SMT-GFS
2	2M66085	Fuse 10A SLO BLO HBC (20x5)
3	2M06361	Fuse 2A SLO BLO (20x5) 1.5kA
4	2M06360	Fuse 1A SLO BLO (20x5) 1.5kA

Figure 96.   PULSE Stack Control Module DC Spare

9.9 PULSE Stack Control Module AC (Part # P95995AC)

The Integrated Stack Control Modules combine the functionality of 3 modules into one: the Stack Control Module, the Solenoid Drive Module and the Motor Control Module. There are two variants of the Integrated Stack Control Module, one for switching 230VAC Solenoid Valves and one for driving 24VDC proportional solenoid valves. The control connects to the Multiplexer Module via the Barrier Module.

FUSE VALUES:
F7 1A SB 1.5kA BREAKING CAPACITY
F8 2A SB 1.5kA BREAKING CAPACITY
F9,F10
For 1.5kW Motor 15A SB
All Others   10A SB   **3E06366 v1**

F1, F2, F4 must use 1.5kA breaking capacity rated fuses

Index	Part No.	Part Description
1	2M06360	Fuse 1A SLO BLO (20x5) 1.5kA
2	2M06361	Fuse 2A SLO BLO (20x5) 1.5kA
3	2M66085	Fuse 10A SLO BLO HBC (20x5)
3a*	2M01092	Fuse 15A Slo Blo Glass (20x5)

*Use a 15A fuse where a 1.5kW motor is present.

Figure 97.   PULSE Stack Control Module AC

9.10 PULSE IS Barrier Module (Part # P95994)

The IS Barrier Module may not be modified or field repaired. It provides necessary isolation between the electronics in the head (non-hazardous zone) and the electronics in the hydraulic cabinet (hazardous zone). It also provides an intrinsically safe power supply for the Multiplexer Module and the flow sensors.
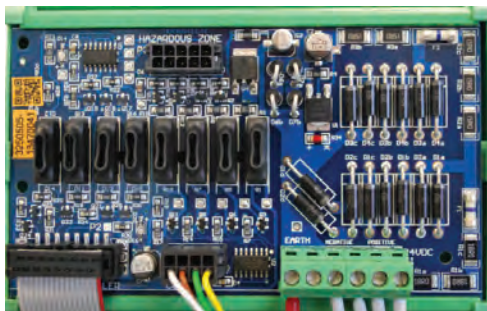
Figure 98.   PULSE IS Barrier Module

9.11 PULSE MUX Module (Part # P95989)

The Muliplexer Module is a non serviceable item and therefore may not be modified or repaired. It combines the switch signals and sensors so that they can be read by the Stack Control via the Barrier Module. It also switches power to the required flow sense encoders and diesel flow rate indication LEDs.

In June 2016 the Multiplexer was upgraded to Version 4 which can be identified by the v04 (circled). The part number has remained the same.

Figure 99.   PULSE MUX Module

9.12 PULSE LPG Coriolis Meter Module (Part # P95987)
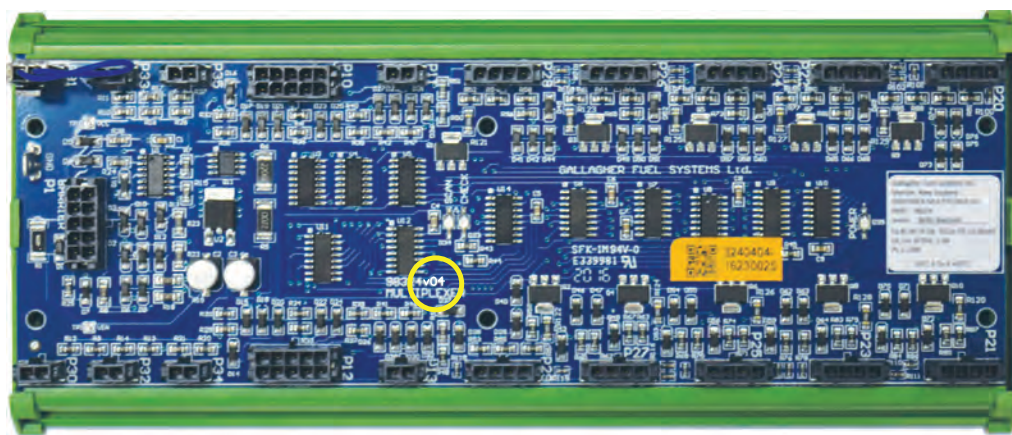
Combines the RS-485 Modbus and 24VDC power onto a single cable for the Stack Control to connect to the LPG mass flow meters (coriolis meters).
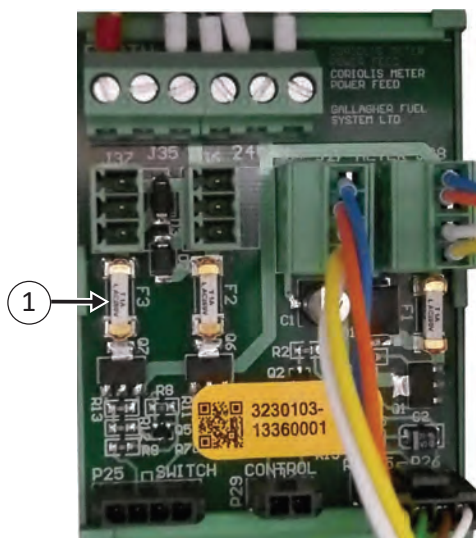
Index	Part No.	Part Description
1	2M01244	Fuse 3404.2416.22 1A W/Clip SMT-GFS

Figure 100.   **PULSE LPG Coriolis Meter Module**

9.13 PULSE User Interface PCA (Part # P98315)

The User Interface Module displays values and messages on the LCD screen received from keypad presses and the Central Control. It communicates with the Central Control over the Local Bus. There are no serviceable components on the User Interface.

Figure 101.   **PULSE User Interface PCA**

9.14 PULSE Display Side Select Jumpers

Index	Part No.	Part Description
1	4E63290	Berg 66464 102 2W S/R M/Jumper
2	2A02948	Jumper Door ID 2100
3	2A02949	Jumper Door ID 3100
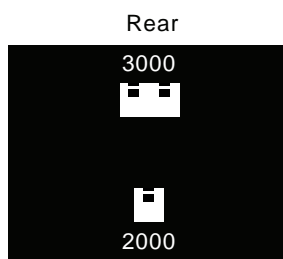
Single Grade Display
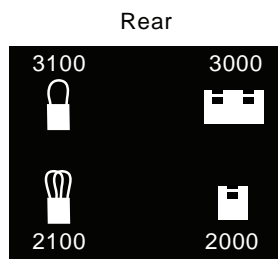
Dedicated Grade Display
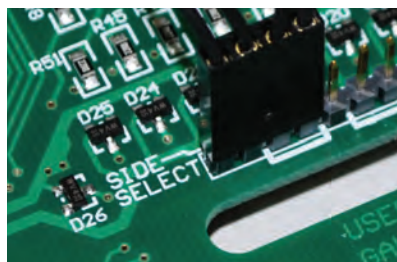
Rear 3100 (Part # 2A02949)
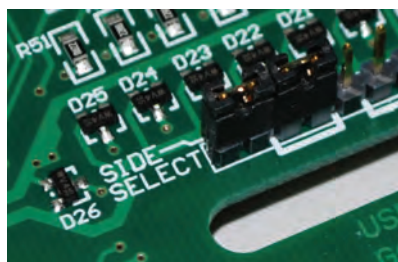
Rear 3000 (Part # 4E63290) x2

Front 2100 (Part # 2A02948)
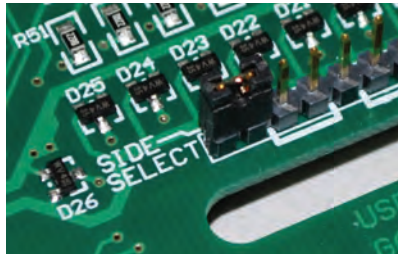
Front 2000 (Part # 4E63290)

9.15 PULSE Head Price PCA (Part # P98312)

This module provides four additional price displays and is controlled by the User Interface Module.
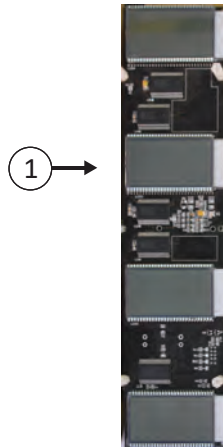
Index	Part No.	Part Description
1	P98312	PULSE Head Price PCA

Figure 102.   PULSE Head Price PCA

9.16 PULSE Auxiliary PSU PCA in Housing (Part # P02880)

Provides increased power to drive additional display modules, as the Power Supply integrated into the Central Control is only sufficient to power systems with up to two display modules.
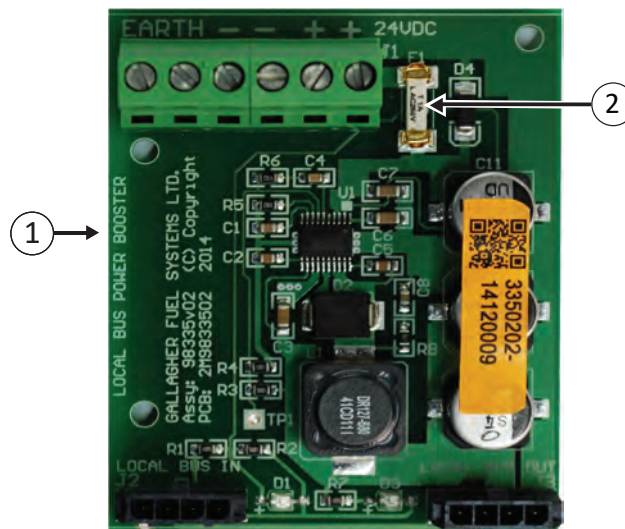
Index	Part No.	Part Description
1	P02880	PULSE Auxillary PSU PCA in Housing
2	2M01244	Fuse 3404.2416.22 1A W/Clip SMT-GFS

Figure 103.   PULSE Auxilary PSU PCA in Housing

9.17 Cables

This section describes the cables within the head cabinet and their associated part numbers. The cables vary depending on some variants such as LPG.

The valve cables and the motor drive cables are supplied with the valves and motor.

The following diagrams of the front and rear Central Control Board show the cables as they are connected before dispatch. Therefore some of the connecting cables are threaded through the mounting plate in order to connect relevant board assemblies on the opposite side of the mounting plate.

9.17.1 Central Control Board Front
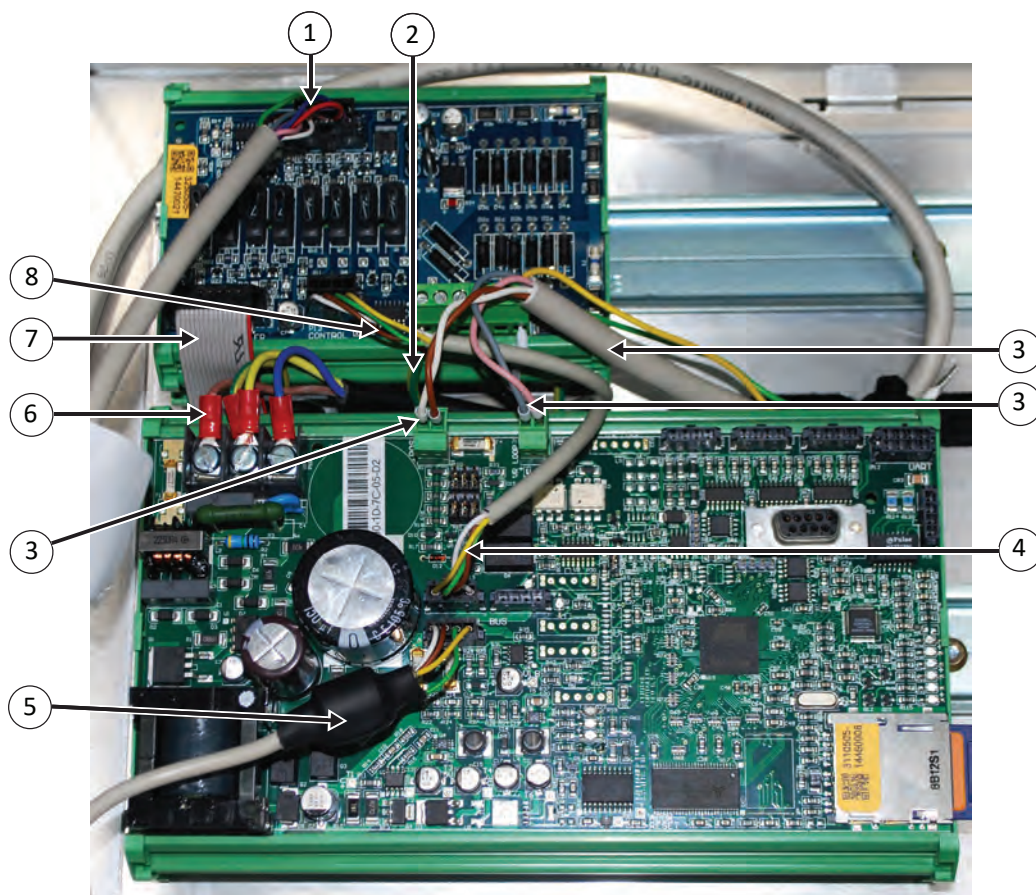
Index	Part No.	Part Description	Index	Part No.	Part Description
1	2A00795	Cable Asm Barrier MPX Data 2m	5	2K00779	Cable Asm Local BUS Display 2.1m
2	2K02166	Cable Asm Earth 140mm in House	6	2K00786	Cable Asm Mains Mtr Drv To Cntrl Ctl
3	2A00777	Cable Asm POS/Data Head 3XTP 0.5mm	7	2K00780	Cable Asm Stack Ctl Sol Drv 500mm
4	2K00779	Cable Asm Local BUS Display 2.1m	8	2K00781	Cable Asm Stack Ctl Barrier Data

Figure 104.   Cable locations on Central Control Board Front

9.17.2 Central Control Board Rear
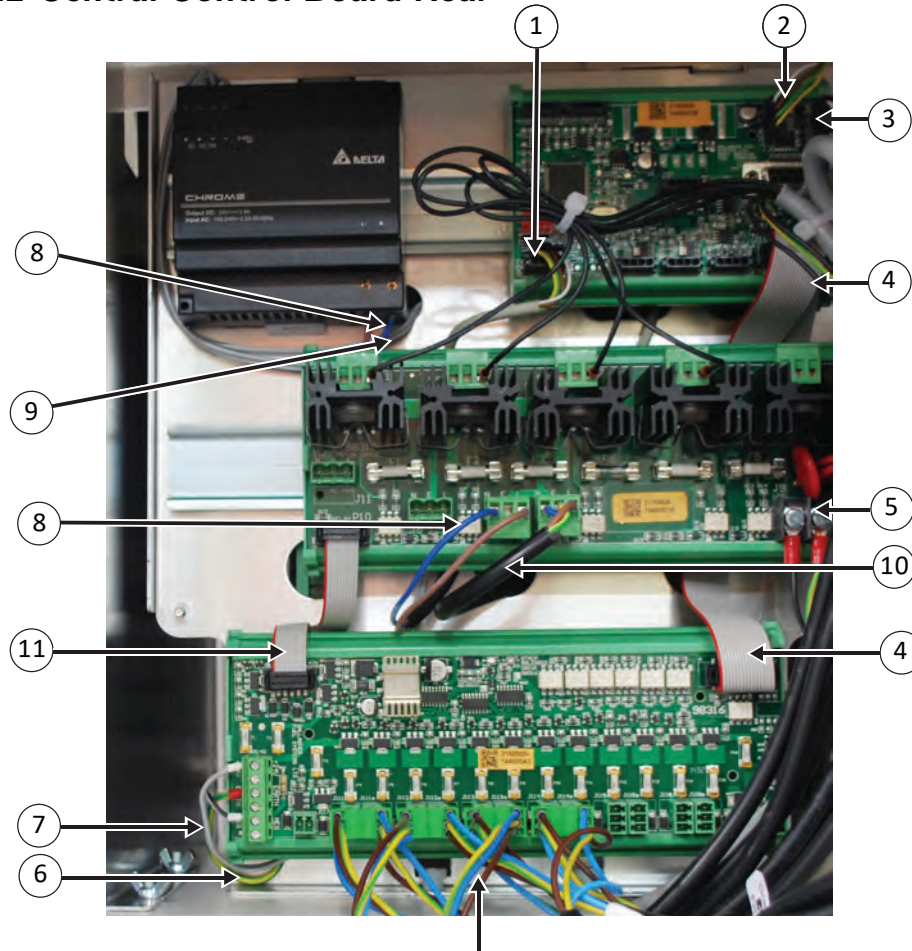
Valve Cables are supplied attached to the valve

Index	Part No.	Part Description
1	2K00781	Cable Asm Stack Stl Barrier Data
2	2K00787	Cable Asm Local Bus Stk Ctl Cntrl Ctl
3	2K00779	Cable Asm Local Bus Display 2.1m
4	2K00780	Cable Asm Stack Ctl Sol Drv 500mm
5	2K02166	Cable Asm Earth 140mm in House
6	2K90544	Cable Asm Earth in House

Index	Part No.	Part Description
7	2K00791	Cable Sndflex 550mm
8	2A00785	Cable Asm Mains Mtr Drv PSU 250mm
9	2K00783	Cable Sndflex 450mm
10	2K00786	Cable Asm Mains Mtr Drv to Cntrl Ctl
11	2K00782	Cable Asm 10Way Flat 150mm

Figure 105.   Cable locations on Central Control Board Rear

9.17.3 Multiplexer Board

The Multiplexer Board uses the appropriate connecting cables from the table below:

Index	Part No.	Part Description
1	2A95787	Cable Harness Nozzle SW 1PD/2PD
2	2A95788	Cable Harness Nozzle SW 3PD/4PD
3	2A02077	Cable Asm Diesel Switch LED Cable
4	2A00796	Cable Asm Diesel Switch 2C 1880mm
5	2A04964	Cable Harness Asm 3PD/4PD/5PD

9.18 Mains Entry Box

The single Mains Entry Box is fixed to the frame within the Hydraulic Cabinet. The part number for each Mains Entry Box is displayed on a decal adhered to the side of the box.

Variations of Mains Entry Box assemblies depend on the particular PULSE model:

- Pump or Dispenser

- Pump and Dispenser (e.g. LPG)

- Vapour Recovery

Part Number Decal
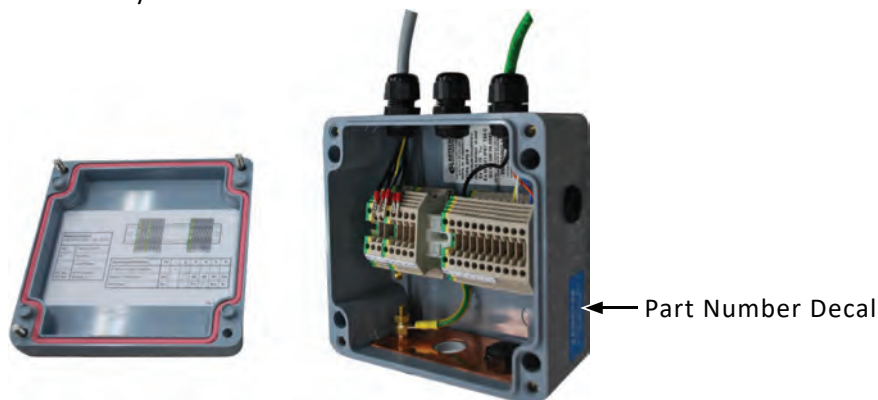
Part No.	Description
2A95798	PULSE Entry Box Dispenser
2A95796	PULSE Entry Box Dispenser VR
2A95799	PULSE Entry Box Pump
2A95797	PULSE Entry Box Pump VR
2A03147	PULSE Entry Box Bennett
2A101122	PULSE Entry Box 5PD Nested

Figure 106.   Part Number Decal location on Mains Entry Box

9.19 Mechanical Tote

The Mechanical Tote is optional and is assembled and fitted prior to dispatch. It resides just inside the front door of the UI making it easily visible from the outside.

The Mechanical Tote is available for one to four product Fuel Dispensers as a complete kit, or as individual parts. The amount of Tote Counters will vary depending on how many are present.

The complete kit consists of:

- Mounting bracket

- Tote counter(s) with built in cable

- 6 x 5D00530 screws to attach the kit to the inside of the cabinet

- PCB Tote Connection PCA
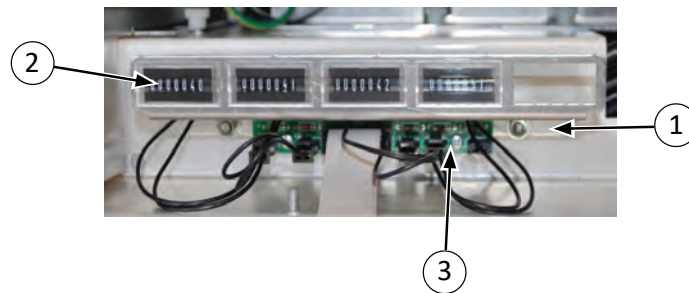
Figure 107.   Mechanical Tote

Index	Part No.	Part Description
1	4G95470	Tote Brkt
2	2A92200	Tote Counter Asm ENMCO
3	P9832602	PULSE Tote Connection PCA - Prd Ver (Varies on number of products)
	P9573901	Tote Asm 1 Totes (Complete Kit)
	P9573902	Tote Asm 2 Totes (Complete Kit)
	P9573903	Tote Asm 3 Totes (Complete Kit)
	P9573904	Tote Asm 4 Totes (Complete Kit)

PULSE CONTROL ASSEMBLY

9.20 PULSE Float Switch Kit (Part # 2A02199)

This section describes individual components supplied with the PULSE Float Switch Kit.

Figure 108. Float Switch

Index	Part No.	Part Description
1	2A92069	Float Switch Ext Cable Asm
2	2A92067	Float Switch Asm Mk2
3	(x1)	Nut M12 ZP
4	4G02198	Float Switch Brkt PULSE

Figure 109. PULSE Float Switch Kit (Part # 2A02199)

9.21 PULSE Battery BUP 4XAA PACK ASM (Part # 2A03110)

Figure 110. PULSE Battery BUP 4xAA Pack Assembly

10 VAPOUR RECOVERY COMPONENTS

This section describes the hydraulic and electrical components for Vapour Recovery within the entire PULSE range.

Some assemblies will vary depending on the number of hoses and dispenser model, for example an LX or a CS.

VR Electronic Components within the head

Fafnir Vaporix PCM Module

Bürkert Valve Control

Fafnir Vaporix Control

VR Hydraulic Components

Splitter

Bürkert Valve

Fafnir Flow Sensor

VR Pump

Vapour Return Line

Shear Valve
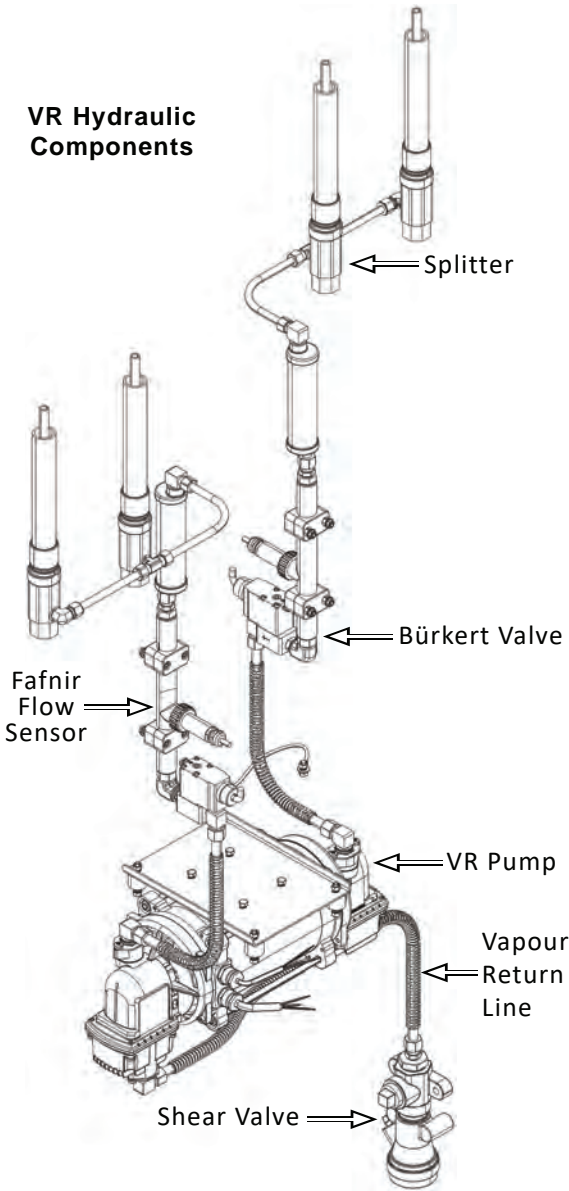
Figure 111.   VR Hydraulic Components

VAPOUR RECOVERY COMPONENTS

10.1 Hydraulics

10.1.1 PULSE Retro Vapour Pump/Dispenser Assembly (Part # P95582)

PULSE Retro Vapour Pump/Dispenser
Assembly (Part # P95582)

Vapour Return Line
(Part # 2A95181)
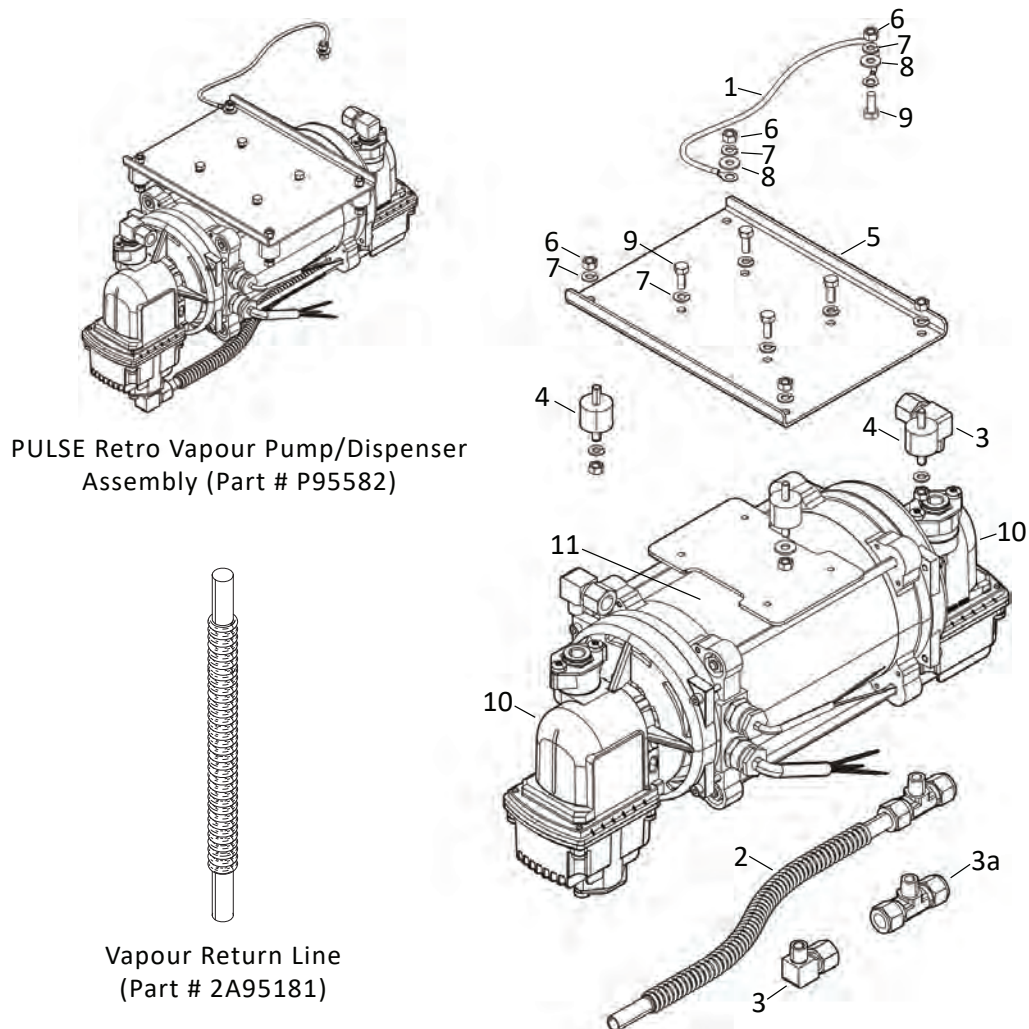
Index	Part No.	Part Description
1	2A90619	VMS Cable Asm Door Earth
2	P95622	V Pump Cross Tube
3	4G23912	Elbow Male 69 x 8 x 4
3a	4G00802	Tee Male Branch 72 x 8 x 4
4	4G29910	Mount Anti-Vibration A25/20
5	4G95581	Dürr Mount Plate
6	(x9)	Nut M6 ZP
7	(x13)	Washer M6 Spring
8	(x2)	Washer M6 x 16 Flat Steel
9	(x5)	Screw M6 x 16 Set Eng ZP
10	P00700BF	Dürr Vacuum Pump Dual Elnor 24V Relay BF
11	P04144	Motor Kit Dürr 0544
12	P05793	Dürr Motor Cap Replacement Kit Spare

Figure 112.   PULSE Retro Vapour Pump/Dispenser Assembly (Dürr)

10.1.2 Piping Assembly C Series - Prior to July 2018

These diagrams represent standard C Series Vapour Recovery Piping including the Fafnir and Bürkert Valve assemblies.

Splitter CS/CX 1LLH ORH
W/O Cross Tube
(Part # 2A95198)

Bürkert Valve Asm
C Series PULSE
(Part # P95662)

Index	Part No.	Part Description
1	2A95663	VR Tube C Series Elbow Bend
2	2A95664	VR Tube C Series Down Bend
3	4G95140	Female Cross
4	4G00805	Male Compression 3/8" Pipe to 1/4" BSPP
5	4G00547	1/4" Brass BSP Plug
6	4G23020	Elbow Male 69 x 6 x 4
7	4V90601	VR2 ZAF 2.1 Petrol Pump Coax Adaptor
8	2A95661	Fafnir Asm PULSE C Series
9	2A95672	VR Tube CX Series Cross Bend
10	2A95677	VR Tube CS Series Cross Bend

Figure 113.   Piping Assembly C Series - Prior to July 2018

10.1.3 Piping Assembly CX Series - After July 2018

There are numerous variations of the CX piping assemblies. The three below are sufficient to show those parts which are common to most assemblies.
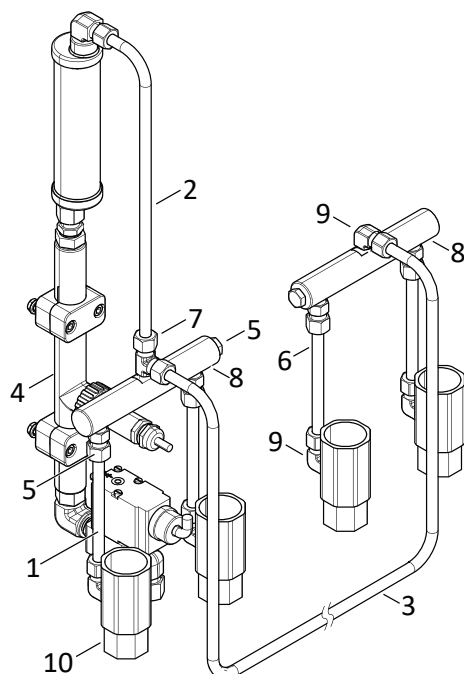
CX 2LH 2RH C/W Cross Tube

CX 0LH 2RH C/W Cross Tube
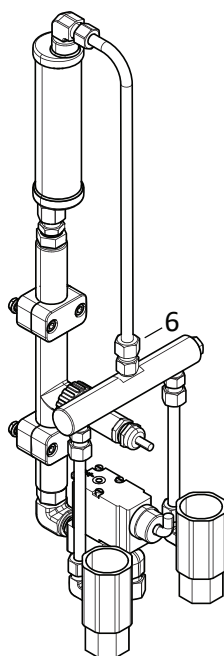
CX 2LH 0RH

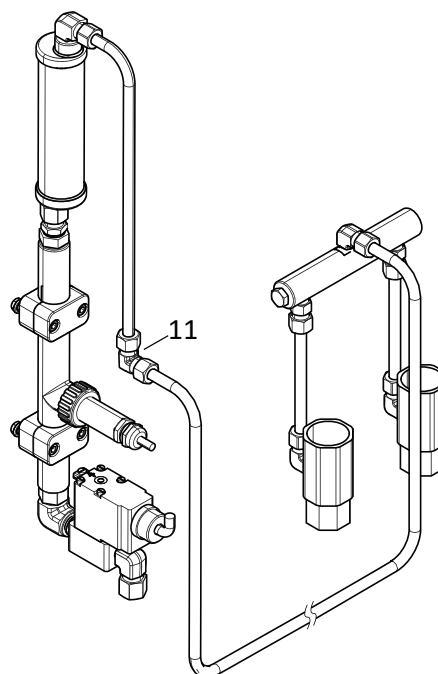| Index	Part No.	Part Description
1	2A101480	Vertical VR Connection Pipe
2	2A101481	Down Pipe CX/CS V.R. II
3	2A101482	Cross Tube CX V.R. II
4	2A95661	Fafnir Assy PULSE
5	4G00547	1/4" Brass Plug
6	4G00805	Male Compression 60 x 6 x 4
7	4G06358	Tee Male 72 x 06 x 04
8	4G101478	C VR Manifold
9	4G23020	Elbow Male 69 x 6 x 4
10	4V90601	VR2 ZAF 2.1 Coax Adaptor
11	4G04304	Double Compression 3/8 Elbow

Figure 114.   Piping Assembly CX Series - After July 2018

10.1.4 Product Splitters L Series

The product splitter arrangement will vary depending on the number of hoses on the dispenser and their position.
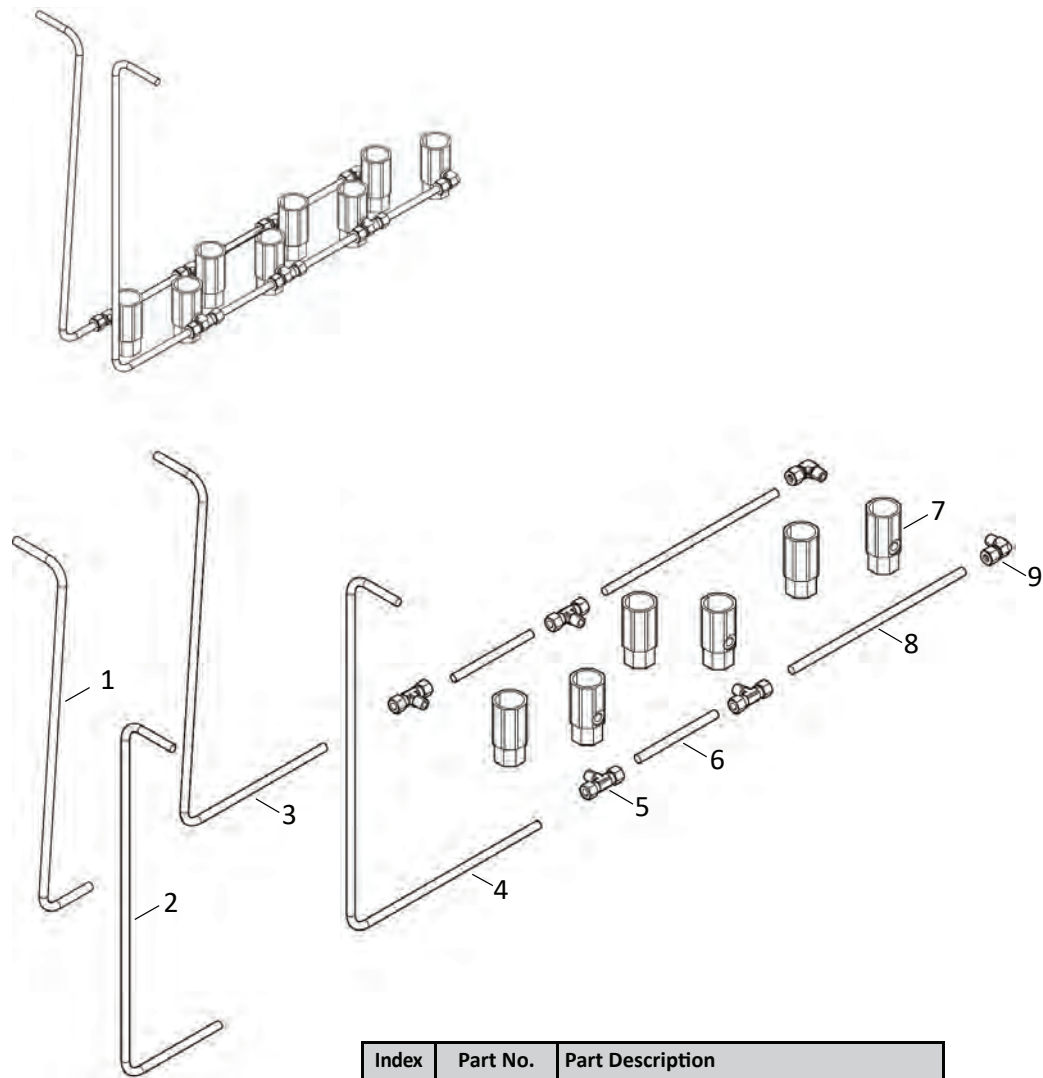
Index	Part No.	Part Description
1	2A95667	VR Tube L Series Bend Left Short
2	2A95666	VR Tube L Series Bend Right Short
3	2A95669	VR Tube L Series Bend Right Long
4	2A95670	VR Tube L Series Bend Left Long
5	4G00808	Union Male Branch Tee
6	2A95668	VR Tube L Series Branch 132mm
7	4V90601	VR2 ZAF 2.1 Petrol Pump Coax Adaptor
8	2A95671	VR Tube L Series Branch 292mm
9	4G23020	Male Elbow 69 x 6 x 4

Figure 115.   Product Splitters L Series

VAPOUR RECOVERY COMPONENTS

10.1.5 Fafnir Assembly PULSE L Series (Part # 2A95691)

The diagrams below represent typical Fafnir and Bürkert Valve assemblies for the L Series.

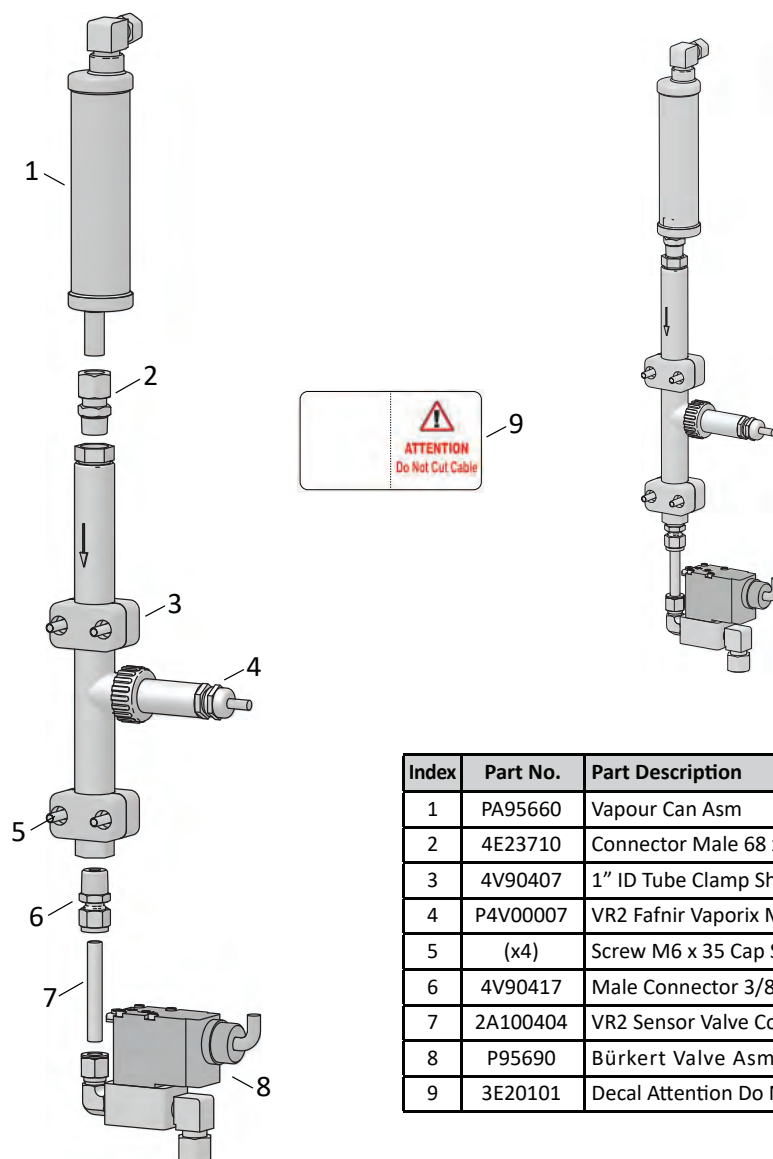| Index	Part No.	Part Description
1	PA95660	Vapour Can Asm
2	4E23710	Connector Male 68 x 8 x 6
3	4V90407	1" ID Tube Clamp Shell
4	P4V00007	VR2 Fafnir Vaporix MPD Sensor
5	(x4)	Screw M6 x 35 Cap SKT HD S/S
6	4V90417	Male Connector 3/8" - 3/8" BSP
7	2A100404	VR2 Sensor Valve Con Pipe 78mm
8	P95690	Bürkert Valve Asm L Series PULSE
9	3E20101	Decal Attention Do Not Cut

**Figure 116.   Fafnir Assembly PULSE L Series**

10.2 Electrical Components

The electrical hardware components consist of the Bürkert Valve Control, Fafnir Vaporix PCM Module and the Fafnir Vaporix Control. These modules are mounted to the Gear Plate within the Head Cabinet and are all non serviceable components.

10.2.1 VR2 Fafnir Vaporix PCM Module (Part # P00006)

The Fafnir Vaporix PCM Module (PULSE Correction Module) corrects physically caused drift effects of the vapour recovery rate. For example, this may occur due to a temperature variation.

Figure 117.   VR2 Fafnir Vaporix PCM Module
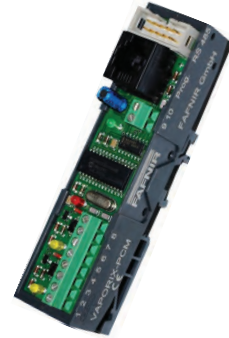
10.2.2 VR2 Bürkert Control Spare for Central (Part # P4V00203)

Calibrated to control the operation of the VR2 Proportional Valves in a Central System. Receives communication from the Fafnir Vaporix PCM Module.

Figure 118.   VR2 Bürkert Controller for Central

10.2.3 VR2 Bürkert Control Spare for Integral (Part # P4V00204)

Calibrated to control the operation of the VR2 Proportional Valves in an Integral System. Receives communication from the Fafnir Vaporix PCM Module.

Figure 119.   VR2 Bürkert Controller for Integral

10.2.4 VR2 Fafnir Vaporix Controller (Part # P4V00008)

The Fafnir Vaporix Control receives encoder pulses from the Stack Control and the vapour flow rate data from the Vapour Sensors. It uses this information to calculate and record the vapour/liquid (V/L) ratio.

Figure 120.   VR2 Fafnir Vaporix Controller

11 ACCESSORIES LIST (SCREWS, NUTS & WASHERS)

Whereas the description of these accessories has been included in this manual, the omission of part numbers indicates that it may be more practical to source such accessories locally.

However, the table below does contain part numbers so that these accessories may be ordered from Gallagher should the need arise.

Part No.	Description	Part No.	Description
5D01660	Screw M4 x 12 PHIL HD S/S	5B03140	Nut M3 ZP
5D00515	Screw M5 x 20 Cap SKT HD S/S	5B03160	Nut M4 ZP
5D00596	Screw M6 x 10 Button SKT HD S/S	5B00023	Nut M4 Flange Serrated ZP
5D00485	Screw M6 x 12 Cap ZP	5B03510	Nut M6 Dome S/S T304
5D00060	Screw M6 x 12 Set Eng ZP	5B03470	Nut M6 Nyloc
5D00960	Screw M6 x 16 Set Eng ZP	5B03230	Nut M6 ZP
5D01650	Screw M6 x 16 Button SKT HD S/S	5B00022	Nut M6 Flange Serrated ZP
5D00030	Screw M6 x 20 Cap SKT HD	5B03040	Nut M8 Nyloc
5D00040	Screw M6 x 25 Cap SKT HD S/S	5B03515	Nut M8 Dome S/S T304
5D01030	Screw M6 x 30 Cap SKT HD S/S	5B03898	Nut M8 Flange Serrated ZP
5D00067	Screw M6 x 35 Cap SKT HD S/S	5B03240	Nut M8 ZP
5D00175	Screw M6 x 40 Cap SKT HD S/S	5B03520	Nut Dome Nylon PNN 6-32 C
5D02130	Screw 6G x 12 Self Tapper PAN S/S T305	5B03260	Nut M12 ZP
5D00597	Screw M8 x 12 Button SKT HD S/S	5C04490	Washer M3 Internal Lock
5D00090	Screw M8 x 16 Set Eng ZP	5C04185	Washer M4 Spring S/S T304
5D01035	Screw M8 x 16 Cap SKT HD	5C04460	Washer M6 x 16 Flat Steel
5D01810	Screw M8 x 16 Button SKT HD S/S	5C04200	Washer M6 Spring
5D00100	Screw M8 x 20 Set Eng ZP	5C04210	Washer M8 Spring
5D00105	Screw M8 x 20 Set Eng S/S T304	5C04205	Washer M8 Spring S/S T304
5D00110	Screw M8 x 25 Set Eng ZP	5C00022	Washer M8 x 17 Flat S/S T316
5D00120	Screw M8 x 30 Set Eng ZP	5C04440	Washer M8 x 19 x 1.6 Flat Steel
5D04112	Screw 8G x 3/8" 304 BLK CSK	5C04520	Washer M12 x 28 Flat Steel
5D01380	Screw M12 x 50 Set Eng ZP	5C04111	Washer Cup 4mm Black Nylon
5D01100	Screw 1/4 x 3/4" Cap SKT S/S	4G00811	Washer 1" Flat Elaflex Blue
5D01691	Grubscrew 1/4 x 1/4" HEX S/S T304		

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