



# SUNTEC TECHNICAL MANUAL





*Dear Partner,*

*SUNTEC benefit from more than eighty years of experience of producing fuel units and offer the largest and best selling range of the world.*

*Our commitment is to offer you the best fuel unit in terms of efficiency, reliability and service life.*

*This manual describes the operation and installation of SUNTEC low flow oil pumps. Conversion tables (replacement of models from other pump manufacturers by SUNTEC models), presentation of our Universal AUV pump and a Frequently Asked Question section will give you answers to the questions you face about the maintenance and troubleshooting of your installations.*

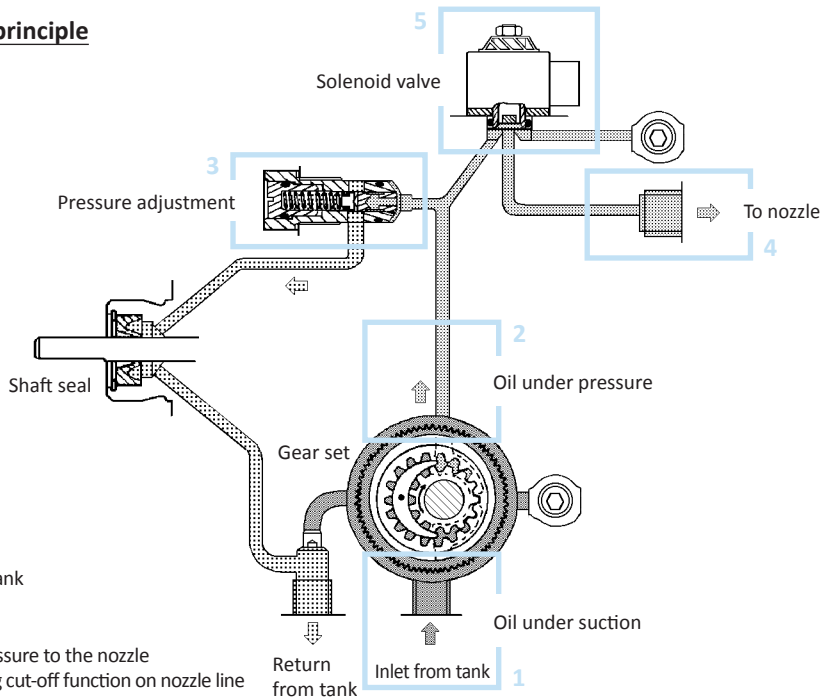
*We hope this manual will help you in your daily service.*

*Your SUNTEC Team*

## TABLE OF CONTENTS

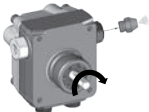
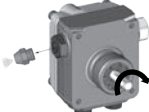
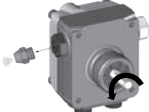
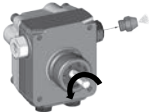
1.	Pump working principle .....	2
2.	SUNTEC pump identification .....	3
3.	Conversion ECKERLE -> SUNTEC .....	5
4.	Conversion DANFOSS -> SUNTEC .....	15
5.	Conversion DELTA -> SUNTEC .....	47
6.	Conversion SUNTEC AS, AL, AE -> SUNTEC AUV .....	53
7.	Spare parts and accessories .....	57
8.	Connections .....	65
9.	One-pipe ↔ two-pipe configuration .....	67
10.	Pipe Dimensions .....	68
11.	FAQs .....	71

# 1. Pump working principle



## 2. SUNTEC pump identification

### 2.1 Choice of SUNTEC pump configuration (shaft rotation and nozzle outlet)

	<p><b>A</b> : Pump seen from shaft end, clockwise rotation, right hand nozzle outlet. Example : AL 35 A 9526 6P 0700</p>
	<p><b>B</b> : Pump seen from shaft end, clockwise rotation, left hand nozzle outlet. Example : AN 67 B 1335 6P</p>
	<p><b>C</b> : Pump seen from shaft end, anti-clockwise rotation, left hand nozzle outlet. Example : AS 47 C 1538 6P 0700</p>
	<p><b>D</b> : Pump seen from shaft end, anti-clockwise rotation, right hand nozzle outlet. Example : AE 47 D 1385 6P</p>

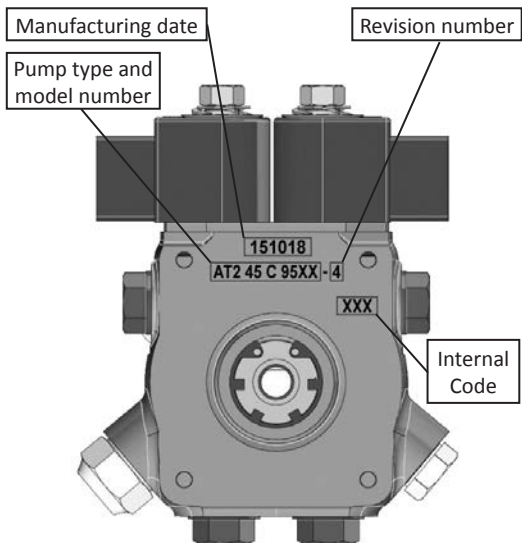
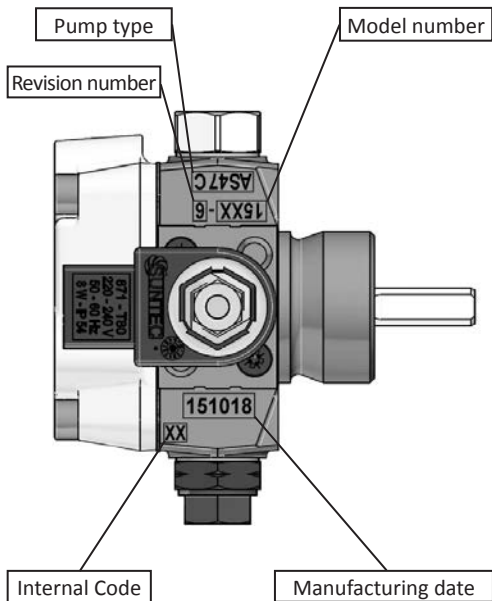
#### Notes :

This codification is valid for any SUNTEC pump except A2L pump.

In this case, the configuration is determined by the shaft rotation and the side pressure gauge port location.

TA, TAR and T pumps exist only in A and C configurations.

## 2.2 Marking



### 3. Conversion ECKERLE -> SUNTEC

ECKERLE Old ref.	ECKERLE New ref.	SUNTEC	Remarks
UNI 1.2 L5 L14-50	UNI 2.12 L1 L14	AL 35 C 9528 6P 0700 AUV 47 L 9857 6P 0700	
UNI 1.2 L1 L64-50	UNI 2.12 L1 L64	AL 35 C 9540 4P 0700 AUV 47 L 9857 6P 0700	<i>AUV: + Inlet and return connections G1/8-G1/4</i>
UNI 1.2 L5 M14-50	UNI 2.12 L1 M14	AL 35 C 9528 6P 0700 AUV 47 L 9857 6P 0700	
-	UNI 2.12 L1 M64	AL 35 C 9540 4P 0700 AUV 47 L 9857 6P 0700	<i>AUV: + Inlet and return connections G1/8-G1/4</i>
UNI 1.2 L5 M64-50-W	UNI 2.12 L1 M64-65	AL 35 C 9540 4P 0700 AUV 47 L 9857 6P 0700	<i>AUV: + Inlet and return connections G1/8-G1/4</i>
-	UNI 2.12 L6 M14	AL 65 C 9589 6P 0700	
UNI 1.2 L62 M14-01-W	UNI 2.12 L6 M14-65	AL 65 C 9589 6P 0700	
UNI 1.72 L62 L14-W	UNI 2.17 L6 M14-65	AL 75 CK 9534 5P 0700	<i>Specific model</i>
-	UNI 2.2 L5 S74-05	AS 47 D 1550 6P 0700 AUV 47 L 9857 6P 0700	<i>AS: G 1/4" Inlet and return</i>
-	UNI 2.4 L5 M2	AP 47 C 7556 4P 0700	



ECKERLE Old ref.	ECKERLE New ref.	SUNTEC	Remarks
UNI 1.42 L6 A64-W	UNI 2.42 L5 L64-65	AT2 45 C 9541 4P 0700	
UNI 2.42 R5 R70-ET	UNI 2.42 R5 R70	AT2 45 A 9574 4P 0700	
UNI 2.1 G22 L1 L10	UNI-E 2.1 G22	AN 47 C 1342 6P	<i>AN: Shaft with one flat (1), no top pressure gauge port</i>
UNI 2.1 G41-21 L1 L10	UNI-E 2.1 G41	AN 47 C 1342 6P	<i>AN: Shaft with one flat (1)</i>
-	UNI-E2.1 G41-13	AE 47 C 1387 6P AUV 47 L 9857 6P 0700	<i>AE: Shaft with one flat (1) AUV: + Kit 991401</i>
-	UNI-E 2.1 L1 L10	AN 47 C 1342 6P	<i>AN: Shaft with one flat (1)</i>
-	UNI-E 2.1 L1 L10-22	AN 47 C 1342 6P	<i>AN: Shaft with one flat (1)</i>
UNI 2.1 L1 L44-H1-21	UNI-E 2.1 L1 L10-30	AN 47 C 1342 6P	<i>AN: Shaft with one flat (1), no top pressure gauge port</i>
UNI 2.1 L1 L44-21	UNI-E 2.1 L1 L14	AN 47 C 1342 6P	
UNI 1.1 L5 L64 -10	UNI-E 2.1 L1 L64	AN 47 C 1342 6P	<i>AN: G1/4" Inlet and return</i>
UNI 1.1 L5 L64-M1	UNI-E 2.1 L1 L64-21	AN 47 C 1342 6P	<i>AN: G1/4" Inlet and return</i>
UNI 2.1 L5 L40-21	UNI-E 2.1 L5 L10	AN 47 C 1342 6P	<i>AN: Shaft with one flat (1)</i>
UNI 2.1 L5 L42-21	UNI-E 2.1 L5 L12	AN 47 C 7228 4P	<i>AN: Shaft with one flat (1)</i>

(1) ECKERLE model with 2 flats on the shaft; change coupling.

ECKERLE Old ref.	ECKERLE New ref.	SUNTEC	Remarks
UNI 2.1 L5 L44-21-05	UNI-E 2.1 L5 L14	AN 47 C 1342 6P	
-	UNI-E 2.1 L5 L14-13	AE 47 C 1387 6P AUV 47 L 9857 6P 0700	<i>AUV: + Kit 991401</i>
UNI 2.1 L5 R44-21	UNI-E 2.1 L5 R14	AN 47 D 1339 6P	
-	UNI-E 2.1 L5 R14-13	AE 47 D 1385 6P AUV 47 L 9857 6P 0700	
UNI 2.1 L5 R94-05	UNI-E 2.1 L5 R74	AN 47 D 1339 6P	<i>AN: G1/4" Inlet and return, Pressure range 7 - 14 bars</i>
-	UNI-E 2.1 L6 L16-11	AE 67 C 7285 4P	
UNI 2.1 L6 L54-05	UNI-E 2.1 L6 L24	AN 67 C 1336 6P	<i>AN: Pressure range 7 - 14 bars</i>
UNI 2.1 R1 L40	UNI-E 2.1 R1 L10	AN 47 B 7327 4P	<i>AN: Shaft with one flat (1)</i>
UNI 2.1 R1 L44-21	UNI-E 2.1 R1 L14	AN 47 B 7327 4P	
UNI 2.1 R5 L42-UI-21	UNI-E 2.1 R5 L12-80	AN 47 BK 7227 4P	<i>AN: Shaft with one flat (1)</i>
UNI 2.1 R5 L43-UI-21	UNI-E 2.1 R5 L13-80	AN 47 B 7217 4P	<i>AN: Shaft with one flat (1)</i>
UNI 2.1 R5 L44-21	UNI-E 2.1 R5 L14	AN 47 B 7327 4P	
UNI 2.1 R5 L54	UNI-E 2.1 R5 L24	AN 47 B 1395 6P	

ECKERLE Old ref.	ECKERLE New ref.	SUNTEC	Remarks
UNI 2.1 R5 R44-21-05	UNI-E 2.1 R5 R14	AN 47 A 1326 6P	
UNI 2.1 R5 R45-21	UNI-E 2.1 R5 R15	AN 47 A 7226 4P	
UNI 2.1 R5 R80-05	UNI-E 2.1 R5 R60	AN 47 A 1326 6P	<i>AN: Shaft with one flat (1), G1/4" Inlet and return</i>
UNI 2.1 R6 L54-05	UNI-E 2.1 R6 L24	AN 67 B 1335 6P	
UNI 2.1 R6 L25	UNI-E 2.1 R6 L25	AN 67 B 7287 4P	
-	UNI-E 2.2 L1 L10	AS 47 C 1538 6P 0700 AUV 47 L 9857 6P 0700	<i>AS: Shaft with one flat (1)</i>
UNI 2.2 L1 L14-21	UNI-E 2.2 L1 L14	AS 47 C 1538 6P 0700 AUV 47 L 9857 6P 0700	
UNI 2.2 L1 L16-K1-21	UNI-E 2.2 L1 L16-10	AS 47 C 7434 4P 0700 AUV 47 L 9857 6P 0700	<i>AUV: + Flange adaptor Ø32-Ø54 (Ref. 3719003)</i>
UNI 2.2 L1 R14-C1-21	UNI-E 2.2 L1 R14-12	AS 47 D 1539 6P 0700 AUV 47 L 9857 6P 0700	
UNI 2.2 L5 L42	UNI-E 2.2 L5 L12	AS 47 C 7438 4P 0700 AUV 47 L 9857 6P 0700	<i>AS: Shaft with one flat (1) AUV: + Hub adaptor Ø32-Ø54 (Ref. 3759833)</i>

(1) ECKERLE model with 2 flats on the shaft; change coupling.

ECKERLE Old ref.	ECKERLE New ref.	SUNTEC	Remarks
UNI 2.2 L5 L14-21-05	UNI-E 2.2 L5 L14	AS 47 C 1538 6P 0700 AUV 47 L 9857 6P 0700	
UNI 2.2 L5 L14-Q-21	UNI-E 2.2 L5 L14-92	AS 47 C 1538 6P 0700 AUV 47 L 9857 6P 0700	<i>AUV: + Hub adaptor Ø32-Ø54 (Ref. 3759833)</i>
UNI 2.2 L5 L15-21-05	UNI-E 2.2 L5 L15	AS 47 C 7438 4P 0700 AUV 47 L 9857 6P 0700	<i>AUV: + Hub adaptor Ø32-Ø54 (Ref. 3759833)</i>
-	UNI-E 2.2 L5 L60	AS 47 C 1538 6P 0700 AUV 47 L 9857 6P 0700	<i>AS: Shaft with one flat (1), G1/4" Inlet and return</i>
UNI 2.2 L5 M14-C1	UNI-E 2.2 L5 M14-12	AS 47 C 1538 6P 0700 AUV 47 L 9857 6P 0700	
UNI 2.2 L5 S20-21	UNI-E 2.2 L5 S20	AS 47 D 1557 6P 0700 AUV 47 L 9857 6P 0700	<i>AUV: Shaft with one flat (1)</i>
UNI 2.2 L5 S20-21-BUD	UNI-E 2.2 L5 S20-BUD	AS 47 D 1557 6P 0700 AUV 47 L 9857 6P 0700	<i>AUV: Shaft with one flat (1)</i>
-	UNI-E 2.2 L5 S74	AS 47 D 1550 6P 0700 AUV 47 L 9857 6P 0700	<i>AS: G 1/4" Inlet and return</i>
-	UNI-E 2.2 L6 L14	AS 67 C 1570 6P 0700	<i>AS: Pressure range 10 - 15 bars</i>

ECKERLE Old ref.	ECKERLE New ref.	SUNTEC	Remarks
UNI 2.2 L6 L16-K1	UNI-E 2.2 L6 L16-10	AS 67 C 7456 4P 0700	<i>AS: pressure range 10 - 15 bars</i>
UNI 2.2 L6 L24-05	UNI-E 2.2 L6 L24	AS 67 C 1570 6P 0700	<i>AS: pressure range 10 - 15 bars</i>
-	UNI-E 2.2 L6 LR14-61	A2L 65 D 9703 4P 0700	
-	UNI-E 2.2 L7 L26	AL 95 C 9412 4P 0700	
-	UNI-E 2.2 L7 LR14-61	A2L 95 D 9702 4P 0700	
UNI 2.2 R1 L40	UNI-E 2.2 R1 L10	AS 47 B 1537 6P 0700 AUV 47 L 9856 6P 0700	<i>AS: Shaft with one flat (1)</i>
UNI 2.2 R1 M14-21-05	UNI-E 2.2 R1 M14	AS 47 B 1537 6P 0700 AUV 47 L 9856 6P 0700	
UNI 2.2 R1 R24	UNI-E 2.2 R1 R24	AS 47 A 1536 6P 0700 AUV 47 L 9856 6P 0700	<i>AS: pressure range 7 - 14 bars</i>
-	UNI-E 2.2 R1 S14	AS 47 A 1536 6P 0700 AUV 47 L 9856 6P 0700	

(1) ECKERLE model with 2 flats on the shaft; change coupling.

ECKERLE Old ref.	ECKERLE New ref.	SUNTEC	Remarks
UNI 2.2 R5 L14-21-05	UNI-E 2.2 R5 L14	AS 47 B 1537 6P 0700 AUV 47 L 9856 6P 0700	
-	UNI-E 2.2 R5 M14	AS 47 B 1537 6P 0700 AUV 47 L 9856 6P 0700	
UNI 2.2 R5 M45	UNI-E 2.2 R5 M15	AS 47 B 1537 6P 0700 AUV 47 L 9856 6P 0700	<i>AS: Flange mounting <math>\varnothing</math>32mm</i>
UNI 2.2 R5 R14-21	UNI-E 2.2 R5 R14	AS 47 A 1536 6P 0700 AUV 47 L 9856 6P 0700	
UNI 2.2 R5 R60-21	UNI-E 2.2 R5 R60	AS 47 A 1536 6P 0700 AUV 47 L 9856 6P 0700	<i>AS: Shaft with one flat (1), G1/4" Inlet and return</i>
-	UNI-E 2.2 R5 S14	AS 47 A 1536 6P 0700 AUV 47 L 9856 6P 0700	
UNI 2.2 R5 S60	UNI-E 2.2 R5 S60	AS 47 A 1536 6P 0700 AUV 47 L 9856 6P 0700	<i>AS: Shaft with one flat (1), G1/4" Inlet and return</i>
UNI 2.2 R6 M24-05	UNI-E 2.2 R6 M24	AS 67 B 1575 6P 0700	<i>AS: pressure range 10 - 15 bars</i>

ECKERLE Old ref.	ECKERLE New ref.	SUNTEC	Remarks
UNI 2.3 L1 L56-I	UNI-E 2.3 L1 L26-80	D 45 C 7389 3PF	<i>Specific model</i>
UNI 2.3 L5 L54-S-05	UNI-E 2.3 L5 L24-13	D 45 C 7374 3P	
UNI 2.3 L5 L56-I	UNI-E 2.3 L5 L26-80	D 45 C 7389 3PF	<i>Specific model</i>
-	UNI-E 2.3 L5 L64	D 45 C 7374 3P	<i>D: G1/4" Inlet and return</i>
UNI 2.3 R5 L54-05	UNI-E 2.3 R5 L24	D 45 B 7347 3P	
UNI 2.3 R5 R54-L	UNI-E 2.3 R5 R24-93	D 47 A 7383 3P	
UNI 2.4 L1 M10-V2	UNI-E 2.4 L1 M10-22	AP 47 C 7556 4P 0700	<i>AP: Shaft with one flat (1)</i>
UNI 2.4 L1 M14-C1	UNI-E 2.4 L1 M14-12	AP 47 C 7556 4P 0700	
UNI 2.4 L1 R44	UNI-E 2.4 L1 R14	AP2 45 D 9566 4P 0700	
UNI 2.4 L1 R14-C1-21	UNI-E 2.4 L1 R14-12	AP2 45 D 9566 4P 0700	
-	UNI-E 2.4 L5 L20	AP2 45 C 9569 4P 0700	<i>Specific model</i>
UNI 2.4 L5 L24	UNI-E 2.4 L5 L24	AP 47 C 7556 4P 0700	
UNI 2.4 L5 M20-21	UNI-E 2.4 L5 M20	AP2 45 C 9569 4P 0700	<i>Specific model</i>
-	UNI-E 2.4 L5 M24	AP 47 C 7556 4P 0700	

(1) ECKERLE model with 2 flats on the shaft; change coupling.

ECKERLE Old ref.	ECKERLE New ref.	SUNTEC	Remarks
UNI 2.4 L5 S24	UNI-E 2.4 L5 S24	AT2 45 D 9544 4P 0700	
UNI 2.4 L6 L24-05	UNI-E 2.4 L6 L24	AP 67 C 7559 4P 0700	
UNI 2.4 L6 M24-C1	UNI-E 2.4 L6 M24-12	AP 67 C 7559 4P 0700	
-	UNI-E 2.4 L7 L22	AP2 95 C 9590 4P 0700	<i>AP2: Flange mounting <math>\varnothing</math> 32 mm, Shaft with one flat (1)</i>
UNI 2.4 L7 L24-05	UNI-E 2.4 L7 L24	AP2 95 C 9590 4P 0700	
UNI 2.4 L7 L56	UNI-E 2.4 L7 L26	AP2 95 C 9590 4P 0700	<i>AP2: Flange mounting <math>\varnothing</math> 32 mm</i>
-	UNI-E 2.4 L7 L26-05	AP2 95 C 9590 4P 0700	<i>AP2: Flange mounting <math>\varnothing</math> 32 mm</i>
UNI 2.4 L7 M25	UNI-E 2.4 L7 M25	AP2 95 C 9590 4P 0700	<i>AP2: Flange mounting <math>\varnothing</math> 32 mm</i>
UNI 2.4 R5 L24-05	UNI-E 2.4 R5 L24	AP 47 B 7561 4P 0700	
UNI 2.4 R5 R24	UNI-E 2.4 R5 R24	AP 47 A 7555 4P 0700	
UNI 2.4 R5 S70-ET	UNI-E 2.4 R5 S70	AP 47 A 1593 4P 0700	
UNI 2.4 R6 S24-ET	UNI-E 2.4 R6 S24	AP 67 A 1594 6P 0700	
-	UNI-E 2.42 R5 R70	AT2 45 A 9574 4P 0700	
-	UNI-E 2.6 L5 L14	AN 47 C 1342 6P	<i>AN: Pump for two-pipe operation, to be converted to one-pipe operation</i>



ECKERLE Old ref.	ECKERLE New ref.	SUNTEC	Remarks
UNI 2.6 L6 L44	UNI-E 2.6 L6 L14	AN 67 C 1336 6P	<i>AN: Pump for two-pipe operation, to be converted to one-pipe operation</i>
-	UNI-E2.91 L5 L14	AN 47 C 1342 6P	<i>+ Low pressure kit 991500</i>
UNI 2.91 L7 L44-05	UNI-E 2.91 L7 L14	AE 97 C 7390 2P	
UNI 2.96 L5 L44-05	UNI-E 2.96 L5 L14	AN 47 C 1342 6P	<i>+ Low pressure kit 991500</i>

(1) ECKERLE model with 2 flats on the shaft; change coupling.

#### 4. Conversion DANFOSS -> SUNTEC

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 10 L6 071N0272	AE 57C 7373 4P		
BFP 10 L6 071N0276	AE 57C 7373 4P		<i>DANFOSS: Pump in one-pipe configuration</i>
BFP 10 L8 071N6111	AE 67C 7361 4P		
BFP 10 L11 071N6107	AE 77C 7380 2P		
BFP 10 L13 071N6103	AE 97C 7390 2P		<i>+ Kit 991492</i>
BFP 10 R3 071N0177	AUV 47 R 9856 6P 0700 + Kit 991401 AN 47B 1395 6P   AN 47A 1326 6P		
BFP 10 R3 071N0288	AUV 47 R 9856 6P 0700 + Kit 991401 AN 47B 1395 6P   AN 47A 1326 6P		<i>DANFOSS: Pump in one-pipe configuration</i>

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 10 R5 071N0166	AUV 47 R 9856 6P 0700 + Kit 991401 AN 47B 1395 6P   AN 47A 1326 6P		
BFP 10 R6 071N0273	AN 57A 7351 4P		<i>SUNTEC pump has an hydraulic cut-off, 14 bars max.</i>
BFP 10 R6 071N0277	AN 57A 7351 4P		<i>SUNTEC pump has an hydraulic cut-off, 14 bars max. DANFOSS pump in one-pipe configuration</i>
BFP 10 R8 071N6112	AN 67A 7345 4P		<i>SUNTEC pump has an hydraulic cut-off</i>
BFP 10 R11 071N6108	AN 77A 7346 2P		<i>SUNTEC pump has an hydraulic cut-off</i>
BFP 10 R13 071N6104	AN 97A 7391 2P		<i>SUNTEC pump has an hydraulic cut-off</i>
BFP 11 L3 071N0101	AUV 47 L 9857 6P 0700		
BFP 11 L3 071N0114	AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	<i>SUNTEC: Shaft with one flat DANFOSS: Shaft with two flats</i>

\*seen from shaft end.

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 11 L3 071N0141	AUV 47 L 9857 6P 0700		<i>DANFOSS: Pump in one-pipe configuration</i>
BFP 11 L3 071N0142	AUV 47 L 9857 6P 0700		<i>DANFOSS: Pump in one-pipe configuration</i>
BFP 11 L3 071N0144	AUV 47 L 9857 6P 0700		
BFP 11 L3 071N0146	AUV 47 L 9857 6P 0700		
BFP 11 L3 071N0152	AUV 47 L 9857 6P 0700		
BFP 11 L3 071N0153	AUV 47 L 9857 6P 0700		<i>Change Suntec pump coil (new 24V coil ref. 3713823)</i>
BFP 11 L3 071N0184	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 11 L3 071N0210	AUV 47 L 9857 6P 0700		
BFP 11 L3 071N0213	AUV 47 L 9857 6P 0700		

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 11 L5 071N0105	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 11 L5 071N0178	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 11 L6 071N1270	AS 57C 1583 6P 0700		<i>SUNTEC: 14 bars max.</i>
BFP 11 L6 071N1274	AS 57C 1583 6P 0700		<i>SUNTEC: 14 bars max. DANFOSS: Pump in one-pipe configuration</i>
BFP 11 L8 071N6109	AL 65C 9589 6P 0700		<i>SUNTEC: 15 bars max.</i>
BFP 11 R3 071N0143	AUV 47 R 9856 6P 0700		
BFP 11 R3 071N0145	AUV 47 R 9856 6P 0700		
BFP 11 R3 071N0155	AUV 47 R 9856 6P 0700		

\*seen from shaft end.

DANFOSS	SUNTEC	Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*
BFP 11 R3 071N0181	AUV 47 R 9856 6P 0700	
BFP 11 R3 071N0183	AUV 47 R 9856 6P 0700	
BFP 11 R6 071N0271	AS 57A 7591 4P 0700	
BFP 11 R6 071N0275	AS 57A 7591 4P 0700	<i>DANFOSS: Pump in one-pipe configuration</i>
BFP 11 R6 071N1271	AS 57A 7591 4P 0700	<i>SUNTEC: 14 bars max.</i>
BFP 11 R6 071N1275	AS 57A 7591 4P 0700	<i>SUNTEC: 14 bars max. DANFOSS: Pump in one-pipe configuration</i>
BFP 11 R8 071N6110	AL 65B 9532 6P 0700	
BFP 11 R11 071N6106	AL 75B 9539 6P 0700	<i>SUNTEC: 15 bars max. and left nozzle outlet DANFOSS: Right nozzle outlet</i>
BFP 12 L6 071N6217	A2L 65 CK 9704 4P 0700	
BFP 12 L8 071N6210	A2L 65 CK 9704 4P 0700	

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 12 L11 071N6202	A2L 75 CK 9701 4P 0700		
BFP 12 L13 071N6203	A2L 95 D 9702 4P 0700		<i>SUNTEC: Right nozzle outlet DANFOSS: Left nozzle outlet</i>
BFP 12 R6 071N6218	A2L 65 A 9708 4P 0700		
BFP 12 R8 071N6219	A2L 65 A 9708 4P 0700		
BFP 12 R11 071N6214	A2L 95 B 9711 4P 0700		<i>SUNTEC: Right nozzle outlet DANFOSS: Left nozzle outlet</i>
BFP 12 R13 071N6220	A2L 95 B 9711 4P 0700		
BFP 20 L3 071N0108	AUV 47 L 9857 6P 0700 + Kit 991401		
	AN 47 C 1342 6P	AN 47 D 1339 6P	
BFP 20 L3 071N0125	AUV 47 L 9857 6P 0700 + Kit 991401		
	AN 47 C 1342 6P	AN 47 D 1339 6P	

\*seen from shaft end.

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 20 L3 071N0127	AUV 47 L 9857 6P 0700 + Kit 991401 AN 47C 1342 6P	AN 47D 1339 6P	
BFP 20 L3 071N0161	AUV 47 L 9857 6P 0700 + Kit 991401 AN 47C 1342 6P	AN 47D 1339 6P	
BFP 20 L3 071N0168	AUV 47 L 9857 6P 0700 + Kit 991401 AN 47C 1342 6P	AN 47D 1339 6P	
BFP 20 L3 071N0212	AUV 47 L 9857 6P 0700 + Kit 991401 AN 47C 1342 6P	AN 47D 1339 6P	<i>SUNTEC: Shaft with one flat DANFOSS: Shaft with two flats</i>
BFP 20 L3 071N0267	AUV 47 L 9857 6P 0700 + Kit 991401 AN 47C 1342 6P	AN 47D 1339 6P	



DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 20 L3 071N0295	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 20 L5 071N0126	AUV 47 L 9857 6P 0700 + Kit 991401 AN 47C 1342 6P		AN 47D 1339 6P
BFP 20 R3 071N0118	AUV 47 R 9856 6P 0700 + Kit 991401 AN 47B 1395 6P	AN 47A 1326 6P	
BFP 20 R3 071N0128	AUV 47 R 9856 6P 0700 + Kit 991401 AN 47B 1395 6P	AN 47A 1326 6P	
BFP 20 R3 071N0162	AUV 47 R 9856 6P 0700 + Kit 991401 AN 47B 1395 6P	AN 47A 1326 6P	

\*seen from shaft end.

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 20 R3 071N0169	AUV 47 R 9856 6P 0700 + Kit 991401 AN 47B 1395 6P	AN 47A 1326 6P	
BFP 20 R3 071N0229	AUV 47 R 9856 6P 0700 + Kit 991401 AN 47B 1395 6P	AN 47A 1326 6P	
BFP 20 R3 071N0298	AUV 47 R 9856 6P 0700 + Kit 991401 AN 47B 1395 6P	AN 47A 1326 6P	<i>DANFOSS: Pump in one-pipe configuration</i>
BFP 20 R5 071N0129	AUV 47 R 9856 6P 0700 + Kit 991401 AN 47B 1395 6P	AN 47A 1326 6P	
BFP 20 R5 071N0180	AUV 47 R 9856 6P 0700 + Kit 991401 AN 47B 1395 6P	AN 47A 1326 6P	

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 21 L2 071N2123	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AL 35D 9529 6P 0700 AS 47D 1539 6P 0700	
BFP 21 L3 071N0102	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0103	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0104	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	

\*seen from shaft end.

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 21 L3 071N0111	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0113	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0119	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0122	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 21 L3 071N0123	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	<i>Change Suntec pump coil (new 110V coil ref. 3713824)</i>
BFP 21 L3 071N0130	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0132	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0147	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	

\*seen from shaft end.

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 21 L3 071N0148	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0150	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0151	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0156	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	<i>DANFOSS: Pump in one-pipe configuration</i>

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 21 L3 071N0164	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0170	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0175	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0176	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	<i>Change Suntec pump coil (new 110V coil ref. 3713824)</i>

\*seen from shaft end.

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 21 L3 071N0179	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0182	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0185	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0189	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	<i>Change Suntec pump coil (new 24V coil ref. 3713823)</i>



DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 21 L3 071N0193	AUV 47 L 9857 6P 0700		
	AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0197	AUV 47 L 9857 6P 0700		
	AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0204	AUV 47 L 9857 6P 0700		
	AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0209	AUV 47 L 9857 6P 0700		
	AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	

\*seen from shaft end.

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 21 L3 071N0217	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0226	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N0228	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N1214	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	<i>DANFOSS: Pump in one-pipe configuration</i>

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 21 L3 071N1217	AUV 47 L 9857 6P 0700		
	AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 071N1219	AUV 47 L 9857 6P 0700		
	AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L3 LE 071N2103	ALE 35C 9324 6P 0700		
BFP 21 L3 LE 071N2104	ALE 35C 9324 6P 0700		
BFP 21 L3 LE 071N2108	ALE 35C 9324 6P 0700		
BFP 21 L3 LE 071N2110	ALE V35D 9337 6P 0700		
BFP 21 L3 LE 071N2112	ALE 35C 9324 6P 0700		
BFP 21 L3 LE 071N2113	ALE 35C 9324 6P 0700		

\*seen from shaft end.

DANFOSS	SUNTEC	Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*
BFP 21 L3 LE 071N2114	ALE 35C 9324 6P 0700	
BFP 21 L3 LE 071N2118	ALE V35D 9337 6P 0700	
BFP 21 L3 LE 071N2119	ALE 35C 9324 6P 0700	
BFP 21 L3 LE 071N4105	ALE V35D 9337 6P 0700	
BFP 21 L3-LE-S 071N0233	ALE 35C 9324 6P 0700	<i>SUNTEC: Shaft with one flat DANFOSS: Shaft with two flats</i>
BFP 21 L3-LE-S 071N0264	ALE 35C 9324 6P 0700	
BFP 21 L3-LE-S 071N2116	ALE 35C 9324 6P 0700	
BFP 21 L3-LE-S 071N2125	ALE 35C 9324 6P 0700	
BFP 21 L3-LE-S 071N2225	ALE 35C 9324 6P 0700	
BFP 21 L3-LE-S 071N2303	ALE 35C 9324 6P 0700	<i>SUNTEC: Shaft with one flat DANFOSS: Shaft with two flats</i>

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 21 L5 071N0107	AUV 47 L 9857 6P 0700		
	AS 47C 1538 6P 0700	AS 47D 1539 6P 0700	
	AL 35C 9528 6P 0700	AL 35D 9529 6P 0700	
BFP 21 L5 071N0116	AUV 47 L 9857 6P 0700		
	AS 47C 1538 6P 0700	AS 47D 1539 6P 0700	
	AL 35C 9528 6P 0700	AL 35D 9529 6P 0700	
BFP 21 L5 071N0158	AUV 47 L 9857 6P 0700		
	AS 47C 1538 6P 0700	AS 47D 1539 6P 0700	
	AL 35C 9528 6P 0700	AL 35D 9529 6P 0700	
BFP 21 L5 071N0172	AUV 47 L 9857 6P 0700		
	AS 47C 1538 6P 0700	AS 47D 1539 6P 0700	
	AL 35C 9528 6P 0700	AL 35D 9529 6P 0700	

\*seen from shaft end.

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 21 L5 071N0194	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L5 071N0202	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L5 071N0227	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 21 L5 071N0292	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 21 R3 071N0109	AUV 47 R 9856 6P 0700 AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700	
BFP 21 R3 071N0112	AUV 47 R 9856 6P 0700 AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700	
BFP 21 R3 071N0136	AUV 47 R 9856 6P 0700 AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700	
BFP 21 R3 071N0154	AUV 47 R 9856 6P 0700 AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700	

\*seen from shaft end.

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 21 R3 071N0157	AUV 47 R 9856 6P 0700  AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700	<i>DANFOSS: Pump in one-pipe configuration</i>
BFP 21 R3 071N0167	AUV 47 R 9856 6P 0700  AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700	
BFP 21 R3 071N0171	AUV 47 R 9856 6P 0700  AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700	
BFP 21 R3 071N0198	AUV 47 R 9856 6P 0700  AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700	



DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 21 R3 071N0208	AUV 47 R 9856 6P 0700 AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700	
BFP 21 R3 071N0214	AUV 47 R 9856 6P 0700 AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700	
BFP 21 R3 071N0215	AUV 47 R 9856 6P 0700 AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700	
BFP 21 R3 071N0231	AUV 47 R 9856 6P 0700 AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700	<i>DANFOSS: Pump in one-pipe configuration</i>

\*seen from shaft end.

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 21 R3 071N1215	AUV 47 R 9856 6P 0700 AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700	<i>DANFOSS: Pump in one-pipe configuration</i>
BFP 21 R5 071N0120	AUV 47 R 9856 6P 0700 AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700	
BFP 21 R5 071N0159	AUV 47 R 9856 6P 0700 AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700	
BFP 21 R5 071N0163	AUV 47 R 9856 6P 0700 AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700	

DANFOSS	SUNTEC	Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*
BFP 21 R5 071N0165	AUV 47 R 9856 6P 0700 AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700
BFP 21 R5 071N0173	AUV 47 R 9856 6P 0700 AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700
BFP 21 R5 071N0195	AUV 47 R 9856 6P 0700 AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700
BFP 21 R5 071N0207	AUV 47 R 9856 6P 0700 AS 47B 1537 6P 0700	AS 47A 1536 6P 0700 AL 35A 9526 6P 0700

\*seen from shaft end.

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 31 L3 071N0115	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 31 L3 071N0133	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	<i>DANFOSS: Pump in one-pipe configuration</i>
BFP 31 L3 071N0149	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 31 L3 071N0190	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 31 L3 071N0191	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 31 L3 071N0192	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 31 L3 071N1201	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 31 L3 071N1203	AUV 47 L 9857 6P 0700 AS 47C 1538 6P 0700 AL 35C 9528 6P 0700	AS 47D 1539 6P 0700 AL 35D 9529 6P 0700	
BFP 31 L3 LE 071N2109	ALE 35C 9324 6P 0700		
BFP 41 L3 071N0135	AUV 47 L 9857 6P 0700		

\*seen from shaft end.

DANFOSS	SUNTEC	Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*
BFP 41 L3 071N0160	AUV 47 L 9857 6P 0700	<i>SUNTEC: Coil on the top DANFOSS: Coil at one side of the body</i>
BFP 41 L3 071N0174	AUV 47 L 9857 6P 0700	
BFP 41 L3 071N0188	AUV 47 L 9857 6P 0700	
BFP 41 L3 071N0224	AUV 47 L 9857 6P 0700	
BFP 41 L3 071N0225	AUV 47 L 9857 6P 0700	
BFP 41 L3 071N1213	AUV 47 L 9857 6P 0700	
BFP 41 R3 071N0137/138	AUV 47 R 9856 6P 0700	<i>SUNTEC: Coil on the top DANFOSS: Coil at one side of the body</i>
BFP 41 R3 071N0196	AUV 47 R 9856 6P 0700	
BFP 41 R3 071N0235	AUV 47 R 9856 6P 0700	
BFP 51 L6 071N6204	AP2 65C 9511 4P 0700	

DANFOSS	SUNTEC		Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*	
BFP 51 L8 071N6222	AP2 65C 9511 4P 0700		
BFP 51 L11 071N6205	AP2 95C 9590 2P 0700		
BFP 51 L13 071N6225	AP2 95C 9590 2P 0700		
BFP 51 R6 071N6221	AP2 65B 9523 4P 0700		
BFP 51 R8 071N6223	AP2 65B 9523 4P 0700		
BFP 52 L6 071N6206	AT2 55C 9549 4P 0700		
BFP 52 L8 071N6207	AT2 65C 9556 4P 0700		
BFP 52 L11 071N6209	AT2 75C 9583 4P 0700		
BFP 52 L13 071N6211	AT2 95C 9585 4P 0700		
BFP 52 R6 071N6227	AT2 55B 9515 4P 0700		
BFP 52 R8 071N6208	AT2 65B 9587 4P 0700		

\*seen from shaft end.

DANFOSS	SUNTEC	Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*
BFP 52 R11 071N6210	AT2 75B 9591 4P 0700	
BFP 52 R13 071N6212	AT2 95B 9592 4P 0700	
BFP 52E L3 071N2201	ATE2 V45 C 9305 6P 0700	
BFP 52E L3 071N2209	ATE2 V45 C 9305 6P 0700	
BFP 52E L3 071N2211	ATE2 V45 C 9305 6P 0700	<i>SUNTEC: Shaft with one flat DANFOSS: Shaft with two flats</i>
BFP 52E L3 071N2213	ATE2 V45 C 9305 6P 0700	
BFP 52E L3 071N2264	ATE2 V45 C 9305 6P 0700	
BFP 52E L5 071N2202	ATE2 V45 C 9305 6P 0700	
BFP 52E L5 071N2205	ATE2 V45 C 9305 6P 0700	
BFP 52E L5 071N2212	ATE2 V45 C 9305 6P 0700	



DANFOSS	SUNTEC	Remarks
	Left-hand nozzle outlet*	Right-hand nozzle outlet*
BFP 52E L5 071N2217	ATE2 V45 C 9305 6P 0700	
BFP 52E L5 071N2220	ATE2 V45 C 9305 6P 0700	
BFP 52E L5 071N2265	ATE2 V45 C 9305 6P 0700	
BFP 52E R3 071N2203	AT2 55B 9515 4P 0700	
BFP 52E R5 071N2204	AT2 55B 9515 4P 0700	
BFP 53 L6 071N6213	AT3 55C 9550 4P 0700	
BFP 53 L8 071N6229	AT3 65C 9561 4P 0700	

\*seen from shaft end.

## 5. Conversion DELTA -> SUNTEC

DELTA		SUNTEC	Remarks
V-, VM- Type	A-, AD- Type		
V1LR2	-	AN 47C 1342 6P	
V1LR1	-	AN 47C 1342 6P	<i>Delta : Pump in one-pipe configuration</i>
V1LL2	-	AN 47D 1339 6P	
V1LL1	-	AN 47D 1339 6P	<i>Delta : Pump in one-pipe configuration</i>
V1RL2	-	AN 47A 1326 6P	
V1RL1	-	AN 47A 1326 6P	<i>Delta : Pump in one-pipe configuration</i>
V1RR2	-	AN 47B 1395 6P	
V1RR1	-	AN 47B 1395 6P	<i>Delta : Pump in one-pipe configuration</i>

DELTA		SUNTEC	Remarks
V-, VM- Type	A-, AD- Type		
V2LR2	-	AN 57C 7349 4P	
V2LR1	-	AN 57C 7349 4P	<i>Delta : Pump in one-pipe configuration</i>
V2LL2	-	AN 57D 1303 6P	
V2LL1	-	AN 57D 1303 6P	<i>Delta : Pump in one-pipe configuration</i>
V2RL2	-	AN 57A 7351 4P	
V2RL1	-	AN 57A 7351 4P	<i>Delta : Pump in one-pipe configuration</i>
V2RR2	-	AN 57B 1330 6P	
V2RR1	-	AN 57B 1330 6P	<i>Delta : Pump in one-pipe configuration</i>

DELTA		SUNTEC	Remarks
V-, VM- Type	A-, AD- Type		
VD1LR2	AD1-L2	AN 47C 1342 6P	
VD1LR1	AD1-L1	AN 47C 1342 6P	<i>Delta : Pump in one-pipe configuration</i>
VD1LL2	AD1-L2	AN 47D 1339 6P	
VD1LL1	AD1-L1	AN 47D 1339 6P	<i>Delta : Pump in one-pipe configuration</i>
VD1RL2	AD1-R2	AN 47A 1326 6P	
VD1RL1	AD1-R1	AN 47A 1326 6P	<i>Delta : Pump in one-pipe configuration</i>
VD1RR2	AD1-R2	AN 47B 1395 6P	
VD1RR1	AD1-R1	AN 47B 1395 6P	<i>Delta : Pump in one-pipe configuration</i>

DELTA		SUNTEC	Remarks
V-, VM- Type	A-, AD- Type		
VD2LR2	AD2-L2	AN 57C 7349 4P	
VD2LR1	AD2-L1	AN 57C 7349 4P	<i>Delta : Pump in one-pipe configuration</i>
VD2LL2	AD2-L2	AN 57D 1303 6P	
VD2RL2	AD2-R2	AN 57A 7351 4P	
VD2RL1	AD2-R1	AN 57A 7351 4P	<i>Delta : Pump in one-pipe configuration</i>
VD2RR2	AD2-R2	AN 57B 1330 6P	
VD2RR1	AD2-R1	AN 57B 1330 6P	<i>Delta : Pump in one-pipe configuration</i>

DELTA		SUNTEC	Remarks
V-, VM- Type	A-, AD- Type		
VM1LR2	A1-L2	AUV 47 L 9857 6P 0700	
VM1LR1	A1-L1	AUV 47 L 9857 6P 0700	<i>Delta : Pump in one-pipe configuration</i>
VM1LL2	A1-L2	AUV 47 L 9857 6P 0700	
VM1LL1	A1-L1	AUV 47 L 9857 6P 0700	<i>Delta : Pump in one-pipe configuration</i>
VM1RL2	A1-R2	AUV 47 R 9856 6P 0700	
VM1RL1	A1-R1	AUV 47 R 9856 6P 0700	<i>Delta : Pump in one-pipe configuration</i>
VM1RR2	A1-R2	AUV 47 R 9856 6P 0700	
VM1RR1	A1-R1	AUV 47 R 9856 6P 0700	<i>Delta : Pump in one-pipe configuration</i>

DELTA		SUNTEC	Remarks
V-, VM- Type	A-, AD- Type		
VM2LR2	A2-L2	AUV 47 L 9857 6P 0700	
VM2LR1	A2-L1	AUV 47 L 9857 6P 0700	<i>Delta : Pump in one-pipe configuration</i>
VM2LL2	A2-L2	AUV 47 L 9857 6P 0700	
VM2LL1	A2-L1	AUV 47 L 9857 6P 0700	<i>Delta : Pump in one-pipe configuration</i>
VM2RL2	A2-R2	AUV 47 R 9856 6P 0700	
VM2RL1	A2-R1	AUV 47 R 9856 6P 0700	<i>Delta : Pump in one-pipe configuration</i>
VM2RR2	A2-R2	AUV 47 R 9856 6P 0700	
VM2RR1	A2-R1	AUV 47 R 9856 6P 0700	<i>Delta : Pump in one-pipe configuration</i>

## 6. Conversion SUNTEC AS, AL, AE -> SUNTEC AUV

AS	AUV	Remarks
AS 47 A 1536 xP 0500/0700	AUV 47 R 9856 6P 0700	
AS 47 A 1564 xP 0500/0700	AUV 47 R 9856 6P 0700	
AS 47 A 1589 xP 0500/0700	AUV 47 R 9856 6P 0700	
AS 47 A 1602 xP 0500/0700	AUV 47 R 9856 6P 0700	
AS 47 A 7432 xP 0500/0700	AUV 47 R 9856 6P 0700	+ Flange adaptor $\varnothing 32\text{-}\varnothing 54$ (Ref. 3719003)
AS 47 A 7436 xP 0500/0700	AUV 47 R 9856 6P 0700	+ Hub adaptor $\varnothing 32\text{-}\varnothing 54$ (Ref. 3759833)
AS V 47 A 1636 xP 0500/0700	AUV 47 R 9856 6P 0700	
AS 47 B 1537 xP 0500/0700	AUV 47 R 9856 6P 0700	
AS 47 BK 1551 xP 0500/0700	AUV 47 R 9856 6P 0700	
AS 47 B 7445 xP 0500/0700	AUV 47 R 9856 6P 0700	
AS 47 C 1538 xP 0500/0700	AUV 47 L 9857 6P 0700	
AS 47 CK 1554 xP 0500/0700	AUV 47 L 9857 6P 0700	
AS 47 C 1569 xP 0500/0700	AUV 47 L 9857 6P 0700	
AS 47 C 1578 xP 0500/0700	AUV 47 L 9857 6P 0700	
AS 47 CK 1582 xP 0500/0700	AUV 47 L 9857 6P 0700	



AS	AUV	Remarks
AS 47 C 1603 xP 0500/0700	AUV 47 L 9857 6P 0700	
AS 47 C 1604 xP 0500/0700	AUV 47 L 9857 6P 0700	
AS 47 C 7434 xP 0500/0700	AUV 47 L 9857 6P 0700	+ Flange adaptor $\varnothing 32\text{-}\varnothing 54$ (Ref. 3719003)
AS 47 C 7438 xP 0500/0700	AUV 47 L 9857 6P 0700	+ Hub adaptor $\varnothing 32\text{-}\varnothing 54$ (Ref. 3759833)
AS 47 C 7444 xP 0500/0700	AUV 47 L 9857 6P 0700	+ Flange adaptor $\varnothing 32\text{-}\varnothing 54$ (Ref. 3719003)
AS 47 CK 7451 xM 0500/0700	AUV 47 L 9857 6P 0700	+ Flange adaptor $\varnothing 32\text{-}\varnothing 54$ (Ref. 3719003) AUV in two-pipe configuration
AS 47 C 7461 xP 0500/0700	AUV 47 L 9857 6P 0700	+ Flange adaptor $\varnothing 32\text{-}\varnothing 54$ (Ref. 3719003)
AS V 47 C 1627 xP 0500/0700	AUV 47 L 9857 6P 0700	
AS 47 D 1539 xP 0500/0700	AUV 47 L 9857 6P 0700	
AS 47 D 1550 xP 0500/0700	AUV 47 L 9857 6P 0700	
AS 47 D 1557 xP 0500/0700	AUV 47 L 9857 6P 0700	One flat shaft (1)
AS 47 DK 1562 xP 0500/0700	AUV 47 L 9857 6P 0700	
AS 47 D 7435 xP 0500/0700	AUV 47 L 9857 6P 0700	+ Flange adaptor $\varnothing 32\text{-}\varnothing 54$ (Ref. 3719003)
AS 47 D 7439 xP 0500/0700	AUV 47 L 9857 6P 0700	+ Hub adaptor $\varnothing 32\text{-}\varnothing 54$ (Ref. 3759833)
AS V 47 D 1696 xP 0500/0700	AUV 47 L 9857 6P 0700	

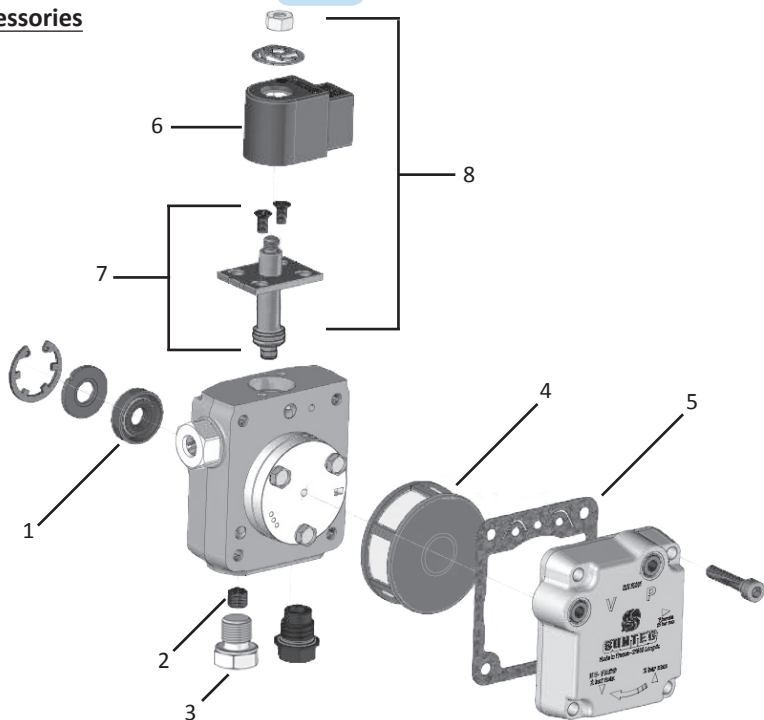
(1) AS Model with 2 flats on the shaft, change coupling.

AL	AUV	Remarks
AL 35 A 9526 xP 0500/0700	AUV 47 R 9856 6P 0700	
AL 35 A 9570 xP 0500/0700	AUV 47 R 9856 6P 0700	
AL 35 A 9596 xP 0500/0700	AUV 47 R 9856 6P 0700	
AL V 35 A 9626 xP 0500/0700	AUV 47 R 9856 6P 0700	
AL 35 B 9580 xP 0500/0700	AUV 47 R 9856 6P 0700	
AL 35 C 9528 xP 0500/0700	AUV 47 L 9857 6P 0700	
AL 35 C 9540 xP 0500/0700	AUV 47 L 9857 6P 0700	<i>+ Inlet and return connections G1/8-G1/4</i>
AL 35 C 9542 xP 0500/0700	AUV 47 L 9857 6P 0700	
AL 35 C 9578 xP 0500/0700	AUV 47 L 9857 6P 0700	
AL V 35 C 9628 xP 0500/0700	AUV 47 L 9857 6P 0700	
AL 35 D 9529 xP 0500/0700	AUV 47 L 9857 6P 0700	





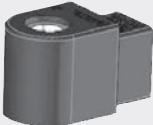
AE	AUV	Remarks
AE 35 C 9850 xP	AUV 47 L 9857 6P 0700	+ Kit 991401
AE 47 A 1384 xP	AUV 47 R 9856 6P 0700	+ Kit 991401
AE 47 B 1366 xP	AUV 47 R 9856 6P 0700	+ Kit 991401
AE 47 B 7267 xP	AUV 47 R 9856 6P 0700	+ Kit 991401 + Hub adaptor $\varnothing 32\text{-}\varnothing 54$ (Ref. 3759833)
AE 47 C 1360 xP	AUV 47 L 9857 6P 0700	+ Kit 991401
AE 47 C 1386 xP	AUV 47 L 9857 6P 0700	+ Kit 991401
AE 47 C 1387 xP	AUV 47 L 9857 6P 0700	+ Kit 991401
AE 47 C 1394 xP	AUV 47 L 9857 6P 0700	+ Kit 991401 / One flat shaft (1)
AE 47 C 1397 xP	AUV 47 L 9857 6P 0700	+ Kit 991401
AE 47 C 7274 xM	AUV 47 L 9857 6P 0700	+ Kit 991401 + Flange adaptor $\varnothing 32\text{-}\varnothing 54$ (Ref. 3719003) AUV in two-pipe configuration
AE 47 C 7368 xP	AUV 47 L 9857 6P 0700	+ Kit 991401
AE 47 D 1378 xM	AUV 47 L 9857 6P 0700	AUV in two-pipe configuration
AE 47 D 1385 xP	AUV 47 L 9857 6P 0700	








(1) AS Model with 2 flats on the shaft, change coupling.






## 7. Spare parts and accessories







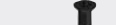

- 1 Shaft seal
- 2 By-pass plug
- 3 G 1/4 steel plug
- 4 Filter
- 5 Cover gasket
- 6 Coil
- 7 Solenoid tube
- 8 Solenoid valve

Description	Pump type	Reference	
Shaft seal (1)	AN, AE, AS, AL, AUV, A2L, ALE, AR, AP, AT	991552	
By-pass plug (2)	AN, AE, AS, AL, AUV, A2L, ALE, AR, AP, AT	3779858	
Plug (3)	AN, AE, AS, AL, AUV, A2L, ALE, AR, AP, AT G 1/4 steel plug	3779191	
	AN, AE, AS, AL, AUV, A2L, ALE, AR, AP, AT G 1/8 steel plug	3779835	
Coil (6)	AS, AL, AUV, A2L, ALE, AR, AP, AT 220-240 V ; 50/60 Hz	3713871SAV	
	AS, AL, AUV, A2L, ALE, AR, AP, AT 110-120 V ; 50/60 Hz	3713824	
	AS, AL, AUV, A2L, ALE, AR, AP, AT 24 V ; 50/60 Hz	3713823	



Description	Pump type	Reference	
<b>Filter (4)</b>	<b>AN/AE/AS/AP 47/57/67</b> Series 7000 - Rev. 3, 4, 5, 6 Series 1000 - Rev. 1, 4, 5, 6	991530 (Height 20 mm)	
	<b>AN/AE/AS/AP 47/57/67</b> Series 7000 - Rev. 2	3715732 (Height 28 mm) (only for pumps manufactured after 1988)	
	<b>AN/AE 77/97</b> Series 7000 - Rev. 3, 4 Series 1000 - Rev. 1, 6	3715750 (Height 23 mm)	
	<b>AN/AE 77/97</b> Series 7000 - Rev. 2	3715732 (Height 28 mm) (only for pumps manufactured after 1988)	
	<b>AL/ALE/A2L/AR 35/55/65</b>	991530 (Height 20 mm)	
	<b>AP2/AP3/AT2/AT3 45/55/65</b>		
	<b>AL/ALE/A2L/AR 75/95</b>	3715750 (Height 23 mm)	
	<b>AP2/AT2 75/95</b>		
	<b>AUV</b>	991530 (Height 20 mm)	



Description	Pump type	Reference	
Cover gasket (5)	<b>AN/AE/AS/AP 47/57/67/77/97</b> Series 7000 - Rev. 4, 6 Series 1000 - Rev. 4, 6	991524	
	<b>AN/AE/AS/AP 47/57/67/77/97</b> Series 7000 - Rev. 2, 3, 5 Series 1000 - Rev. 1, 5	991523	
	<b>AL/ALE/A2L/AR/AP2/AT2/AP3/AT3 35/45/55/65/75/95</b> Series 9000 - Rev. 4, 6	991524	
	<b>AL/ALE/A2L/AR/AP2/AT2/AP3/AT3 35/45/55/65/75/95</b> Series 9000 - Rev. 1, 2, 5	991523	
	<b>AUV</b>	991524	




Service kit	<b>AN, AE, AS, AL, AUV, A2L, ALE, AR, AP, AT - Low cover</b>	991533	
	<b>AN, AE, AS, AL, AUV, A2L, ALE, AR, AP, AT - High cover</b>	991510	

Description	Pump type	Reference	
Solenoid tube (7)	AS/AP2/AP3	991430	
	AL rev. 2, 4, 5, 6	991502	
	AUV, AR, A2L		
ALE	991600		



Description	Pump type	Reference	
Solenoid tube (7)	AP	991430	
	AT2/AT3 rev. 2, 4, 6	991503	

Description	Pump type	Reference	
<b>Solenoid valve (8)</b>	<b>AS</b> 220-240 V ; 50/60 Hz	991435	
	<b>AS</b> 110-120 V ; 50/60 Hz	991431	
	<b>AS</b> 24 V ; 50/60 Hz	991432	
	<b>AL/AUV/A2L/AR</b> 220-240 V ; 50/60 Hz	3713871SAV + 991502	
	<b>AL/AUV/A2L/AR</b> 110-120 V ; 50/60 Hz	3713824 + 991502	
	<b>AL/AUV/A2L/AR</b> 24 V ; 50/60 Hz	3713823 + 991502	

Description	Pump type	Reference	
	<b>AP</b> 220-240 V ; 50/60 Hz	991455	
<b>Solenoid valve (8)</b>	<b>AP2/AP3</b> 220-240 V ; 50/60 Hz	991488	
	<b>AT2/AT3</b> 220-240 V ; 50/60 Hz	3713871SAV + 991503	

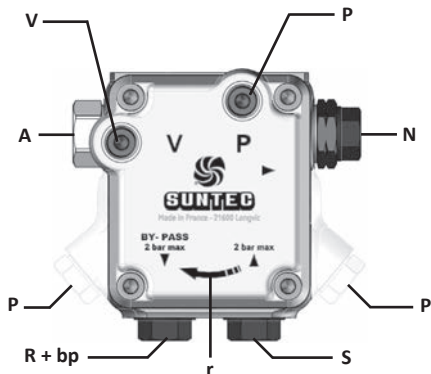
## 8. Connections

### AN/AE/AS/AL/ALE pumps

**S** : Suction G 1/8 or G 1/4  
**N** : Nozzle outlet G 1/8  
**R** : Return G 1/8 or G 1/4  
**V** : Vacuum gauge port G 1/8  
**P** : Pressure gauge port G 1/8  
**A** : Pressure adjustment  
**r** : Rotation direction  
**bp** : By-pass plug for 2-pipe operation

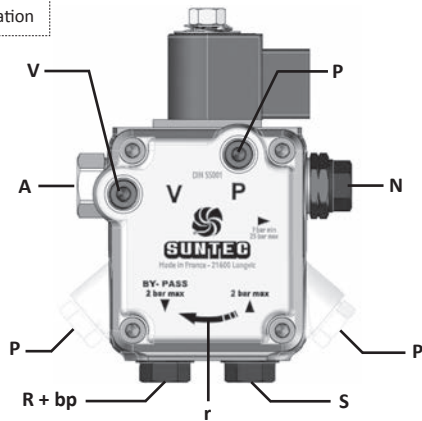
#### AN/AE

Figures are for "C" shaft rotation and nozzle outlet.



#### AS/AL/ALE

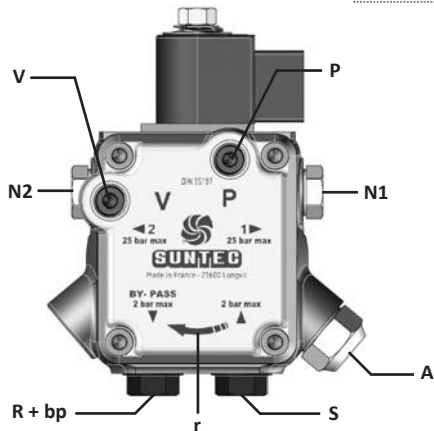
Figures are for "C" shaft rotation and nozzle outlet.



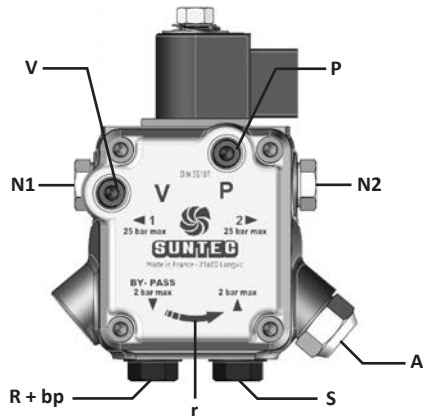
## AUV universal pump

- S : Suction G 1/4
- R : Return G 1/4
- N1 : Nozzle outlet G 1/8
- N2 : Optional nozzle outlet G 1/8
- V : Vacuum gauge port G 1/8
- P : Pressure gauge port G 1/8
- A : Pressure adjustment
- r : Rotation direction
- bp : By-pass plug for 2-pipe operation

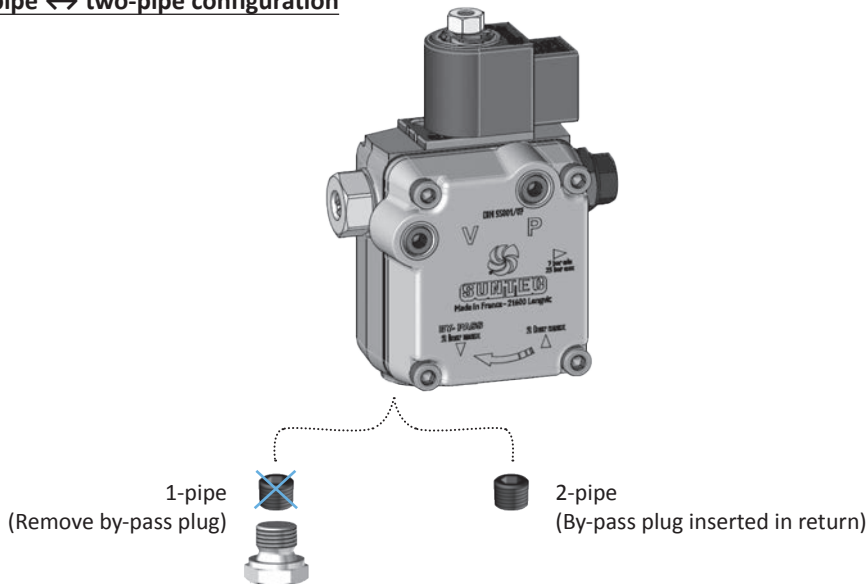
**AUV 47 L 9857 6P 0700**



**AUV 47 R 9856 6P 0700**



## 9. One-pipe ↔ two-pipe configuration



Most SUNTEC pumps are delivered prepared for two-pipe installations. They can be converted to one-pipe operation by removing the internal by-pass plug and fitting a plug and a washer to the return port thus creating an internal recirculation circuit.

## 10. Pipe Dimensions

Rated speed: 2850 rpm - Viscosity: 5 mm<sup>2</sup>/s (cSt) - Pressure: 9 bars

The annexed charts give the maximum length (in meters) of suction line as a function of 3 variables: lift between fuel unit and tank (H), nozzle capacity or pump type, pipe diameter (d), for an altitude of 200m above sea level and 0,45 bars vacuum. The length indicated (intersection of horizontal lines and columns) assumes the fitting of 4 right angle bends, 1 stop valve, 1 non return valve; if additional restrictions exist (particularly the filter of the suction line), the length must be reduced accordingly.

Only mentioned diameters can be used, bigger pipes are not suitable.

**Altitude correction:** if X is the altitude (different from 200m),

- *Lift system:* add the value  $(X-200)/1000$  to the real lift height "H", to obtain the equivalent lift, then determine the maximum length with the annexed charts.

- *Siphon feed system:* reduce the real head height "H" by  $(X-200)/1000$ .

E.g.: AS 47 pump in two-pipe lift system, with lift height = 1,5m, altitude = 700m, pipe diameter = 8mm.

Equivalent lift height:  $1,5+(700-200)/1000 = 2\text{m}$ , maximum pipe length = 26m.

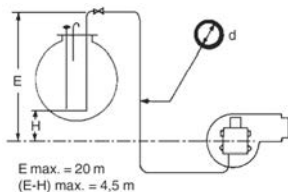
**Pressure correction:** only for one-pipe system.

If P is the pressure (different from 9 bars), use the theoretical equivalent nozzle capacity =  $(\sqrt{P}/3) \times$  real nozzle capacity.

E.g.: one-pipe lift system, with nozzle = 0,60 GPH, pressure = 22 bars, pipe diameter = 4mm, suction height = 3m.

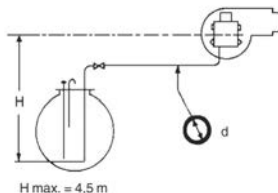
Equivalent nozzle capacity =  $(\sqrt{22} / 3) \times 0,60 = 0,94$  GPH. The maximum pipe length is comprised between 17m (corresponding to 0,80 GPH) and 14m (corresponding to 1,00 GPH), that means around 15m.

One-pipe siphon feed system



Nozzle (US GPH)	0,50		0,60		0,80		1,00		1,50		2,00		4,00			6,00				9,50			
	d (mm)																						
H (m)	4	4	4	4	4	6	4	6	4	6	8	4	6	8	4	6	8	4	6	8	10		
0	90	75	56	45	30	150	22	113	11	56	150	7	37	119	4	23	74	150					
0,5	100	83	63	50	33	150	25	126	12	63	150	8	41	133	4	26	83	150					
1	110	92	69	55	37	150	27	139	13	69	150	8	46	146	5	28	92	150					
2	131	109	82	65	44	150	33	166	16	82	150	10	55	150	6	34	109	150					
3	152	126	95	76	50	150	38	192	18	96	150	12	63	150	7	39	127	150					
4	172	144	108	86	57	150	43	218	21	109	150	14	72	150	8	45	144	150					

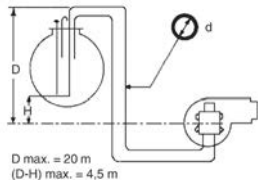
One-pipe lift system



Nozzle (US GPH)	0,50		0,60		0,80		1,00		1,50		2,00		4,00			6,00				9,50			
	d (mm)																						
H (m)	4	4	4	4	4	6	4	6	4	6	8	4	6	8	4	6	8	4	6	8	10		
0	90	75	56	45	30	150	22	113	11	56	150	7	37	119	4	23	74	150					
0,5	79	66	50	40	26	134	20	100	9	50	150	6	33	105	3	20	66	150					
1	69	57	43	34	23	116	17	87	8	43	138	5	28	91	2	17	57	141					
2	48	40	30	24	16	81	12	61	6	30	96	3	20	64		12	40	98					
3	28	23	17	14	9	47	7	35	3	17	55		11	36		6	22	56					
4	7	6	4			12		9		4	14			9			5	13					

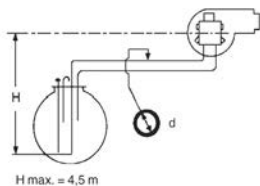


### Two-pipe siphon feed system



Pump $Q^*$ (l/h)	35/45/47 60				55/57 77				65/67 102				75/77 130				95/97 150			
	H (m)		d (mm)		H (m)		d (mm)		H (m)		d (mm)		H (m)		d (mm)		H (m)		d (mm)	
0	2	15	50	124	11	38	96	150	7	27	71	150	20	54	116	150	16	46	100	150
0,5	2	16	56	138	12	42	107	150	8	31	79	150	23	61	130	150	19	52	112	150
1	2	18	61	150	13	47	118	150	9	34	88	150	26	68	144	150	21	57	124	150
2	3	22	73	150	16	56	141	150	11	41	105	150	31	81	150	150	26	69	148	150
3	4	26	85	150	19	66	150	150	13	48	122	150	36	94	150	150	31	81	150	150
4	4	30	97	150	22	75	150	150	16	55	139	150	42	108	150	150	36	92	150	150

### Two-pipe lift system



Pump $Q^*$ (l/h)	35/45/47 60				55/57 77				65/67 102				75/77 130				95/97 150			
	H (m)		d (mm)		H (m)		d (mm)		H (m)		d (mm)		H (m)		d (mm)		H (m)		d (mm)	
0	15	50	124	150	11	38	96	150	7	27	71	150	20	54	116	150	16	46	100	150
0,5	13	44	109	150	9	33	84	150	6	24	62	132	17	48	103	150	14	40	88	150
1	11	38	95	150	8	29	73	150	4	20	54	115	15	41	89	150	12	34	76	144
2	7	26	66	138	5	19	51	107	2	13	37	80	9	28	61	116	7	23	52	100
3	3	14	37	79		10	28	60		6	20	44	4	14	33	65		11	28	55
4			8	19			5	14				9		6	14			4	11	

\* $Q$  = pump capacity @ 0 bar

## 11. FAQs

### 11.1 Pump is not running

<i>Check if...</i>	<i>Probable explanation</i>	<i>Solution</i>
<b>...the motor is turning.</b>		
<b>YES</b>	Motor coupling is defective or has come loose	Check coupling and repair or replace as appropriate.
<b>NO</b>	Pump has seized	Remove pump cover and check pump. If rust and / or an abnormal amount of dirt are found, check tank for water and check condition of filters. Replace pump.
	Motor does not work	Test motor and connections and repair or replace if necessary, having first examined the pump.

## 11.2 Pump is running but does not deliver oil

<i>Check if...</i>	<i>Probable explanation</i>	<i>Solution</i>
...oil flows out of the high-pressure port when it is loosened.		
YES	Nozzle or in-line solenoid valve is blocked	Inspect nozzle and valve for blockage (dirt, grit, fuel,...)
	Solenoid valve or pressure regulator is defective	Switch on the coil and check for magnetic pull. If there is no pull, check the current. If the current is OK, change the coil.  When the coil is in order, check the pressure regulating valve or replace the pump.

<i>Check if...</i>	<i>Probable explanation</i>	<i>Solution</i>
<b>...no oil flows from the high-pressure port when it is loosened.</b>		
<b>NO</b>	Oil level in tank is low	Check tank and refill.
	Inlet pipe valve is closed	Open the valve.
	On a new installation, the check valve is the wrong way round	Check that all valves are facing the right way.
<b>...and vacuum gauge shows a high vacuum.</b>		
<b>YES</b>	Blockage up-stream	Check in-line filter and non-return valve.
	Pipe is undersized	Check pipe dimensions.

<i>Check if...</i>	<i>Probable explanation</i>	<i>Solution</i>
...no oil flows from the high-pressure port when it is loosened.		
...and vacuum gauge shows a low vacuum.		
<b>YES</b>	Pump filter is plugged	Remove pump cover and check filter condition.
	Air leak	Check the tightness of pump cover (especially if the filter has recently been changed/cleaned) and check the cover gasket.
	Pipe is oversized	Very important for one-pipe systems. Check pipe diameter.
	Pump rotates in a wrong way	If the installation is new, be sure that motor and pump rotation are the same. A pump turning in the wrong direction can not draw oil.
	By-pass plug is missing in two-pipe installation	Check if the by-pass plug is installed.

<i>Check if...</i>	<i>Probable explanation</i>	<i>Solution</i>
...no oil flows from the high-pressure port when it is loosened.		
...and vacuum gauge shows a low vacuum.		
YES	Suction and return lines have been swapped	Check they have been correctly fitted.
	Pump is worn out	Check this by carrying out a pressure test.

### 11.3 Nozzle pressure is too high / too low

<i>Check if...</i>	<i>Probable explanation</i>	<i>Solution</i>
...the pressure can be adjusted.		
...and pressure gauge shows a low pressure.		
YES	Pump is not properly sized for the nozzle performance (remembering fuel viscosity) or any hydraulic attachments i.e. hydraulically opened air flap	Change pump or nozzle as appropriate.
	Pump is worn out	Check this by carrying out a pressure test. Replace pump.
...and pressure gauge shows a high pressure.		
YES	Dirt in regulating valve	Dismantle pressure regulator or replace pump.

<i>Check if...</i>	<i>Probable explanation</i>	<i>Solution</i>
<b>...the pressure can be adjusted.</b>		
<b>...and the pump pressure oscillates.</b>		
<b>YES</b>	Air in the oil	Check vacuum does not exceed 0,45 bars. Check suction line for leaks.
	Pressure regulating valve is defective or clogged	Dismantle pressure regulator or replace pump.
	Motor coupling is slipping	Check coupling and check for speed variations.
<b>...the pressure can not be adjusted.</b>		
<b>...and the pressure is constantly too high or too low.</b>		
<b>YES</b>	Pressure regulating valve is defective or clogged	Dismantle pressure regulator or replace pump.
<b>NO</b>	Pressure gauge is defective or incorrectly installed	Check pressure gauge. Bleed when fitting.



## 11.4 The oil pump makes noise

<i>Check if...</i>	<i>Probable explanation</i>	<i>Solution</i>
<b>...an increasingly loud whine is coming from the pump.</b>		
<b>YES</b>	Vacuum is too high (check with a vacuum gauge)	Check for closed valves, blocked filters, check valves that are stuck.
<b>...the pump generates a cracking noise and the pressure gauge oscillates.</b>		
<b>YES</b>	Air bubbles in the suction line	Check suction line for leaks. Bleed pump if installation is one-pipe.

## 11.5 Excessive pump temperature

<i>Check if...</i>	<i>Probable explanation</i>	<i>Solution</i>
<b>...a small nozzle flow is used with a one-pipe installation.</b>		
<b>YES</b>	Heat build-up from recirculation in pump plus heat radiated from motor etc.	Convert to two-pipe or fit filter upstream from pump with return from pump to filter. This circulation outside of the burner will help to cool the system.



