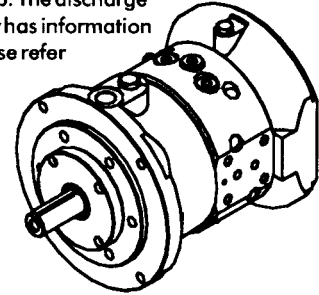


## PFBAA or PFB AE

### General Information

The Oilgear Towler PFBA\* series pump is a fixed displacement, seated valve, axial piston pump. The discharge can be separated into double or combined for single connections (see page 8). This data sheet has information about the separately boosted version. For details of the internally boosted PFBA\* pumps, please refer to data sheet 2P147. Only the internally boosted version is dimensionally interchangeable with Oilgear Towler A-series pumps. PFBAA pumps are designed for use on mineral oil and similar viscosity fluids. PFB AE pumps are for use with low viscosity fluids such as 95/5 HFAe.

This pump is suitable for both directions of rotation. All installation locations are specified as viewed from the drive shaft end. The inlet and discharge positions are independent of the direction of rotation. The inlet must be separately boosted to a minimum pressure of 3 bar, over case pressure. Maximum boost is 50 bar. The inlet flow is nominally 6 litres above the discharge flow at 1500 rpm. These units are designed to run with a case full of fluid at all times. Therefore fill the case before starting and connect the drain accordingly.



All dimensions given on this data sheet are in millimetres unless otherwise stated. Further information on the PFBA\* pump is available. Consult Oilgear Towler Operating and Maintenance Instructions booklet 1480. Alternatively contact Oilgear Towler direct.

#### MAIN PRESSURE AND TORQUE CHARACTERISTICS

Pump	Maximum Working Pressure (bar)	Maximum Case Pressure (bar)	Maximum Input Torque (Nm)	Maximum Through Drive Torque (Nm)	Maximum Shaft Speed (rpm)
PFBAA	1000	2	180	95	1800
PFB AE	345	1	180	95	1500

For details of single discharge relief valves that can be directly mounted on the discharge face of this pump, refer to data sheets A23 and A24. For relief and unloading valves that allow relief on a small section and unload on a larger section, refer to data sheets A25 and A26.

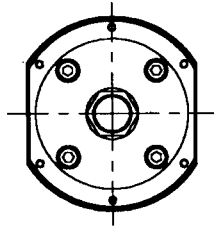
#### GENERAL CHARACTERISTICS

TYPE	Fixed displacement, seated valve, axial piston pump.	
FLUIDS & VISCOSITIES	Mineral Oil	ISO 6743/4 Type HM or HV. Viscosity range is 5 to 100cSt; with cold start is 200 cSt. Maximum inlet temperature is 70°C.
	Fire resistant fluids	HFDR Phosphate Ester, rating as for mineral oil. (NOTE: EPDM seals are required).
		HFC Water Glycol. Pressure rating reduced to 275 bar.
		HFA High water based fluids (80/20), rating as for 95/5 or HFC.
	For 95/5 or similar HFA fluids	HFAe pressures up to 345 bar. HFAs pressures up to 250bar. Viscosity range is 0.5 to 1.5 cSt. Maximum inlet temperature is 40° C
	Aircraft Fluids	Mineral oil & "Skydrol" at mineral oil rating. Above 350 bar consult Oilgear Towler. (NOTE: EPDM seals are required for "Skydrol").
	Other Fluids	Castor Oil ASTM 960-79 100% duty.
		Water & oil emulsion 60/40 HFB 240 bar maximum.
Kerosene and diesel fluid 250 bar maximum.		
(NOTE; Consult Oilgear Towler for details).	Bio-degradable fluids (vegetable & synthetic) HTG, HPG, HE. 100% duty, dependant on fluid limitations.	
FLUID CLEANLINESS	High pressure systems need cleaner fluids and the aim should be to achieve ISO 4406 code 14/11 or cleaner.	

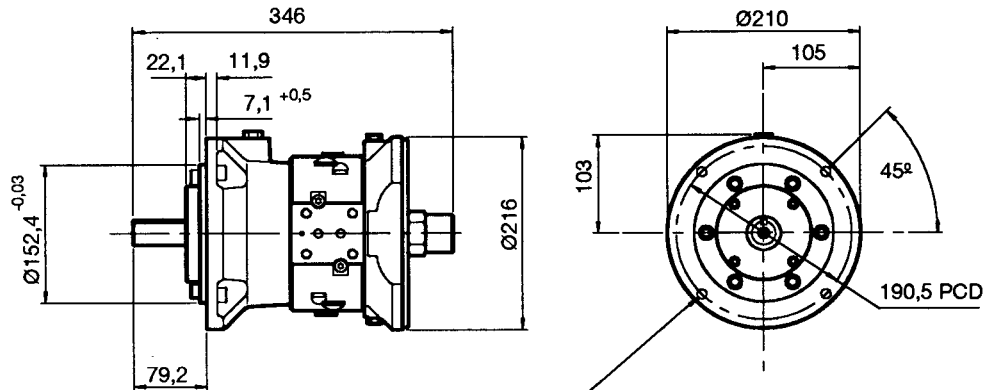
## PFBAA or PFBAE

Installation Drawing

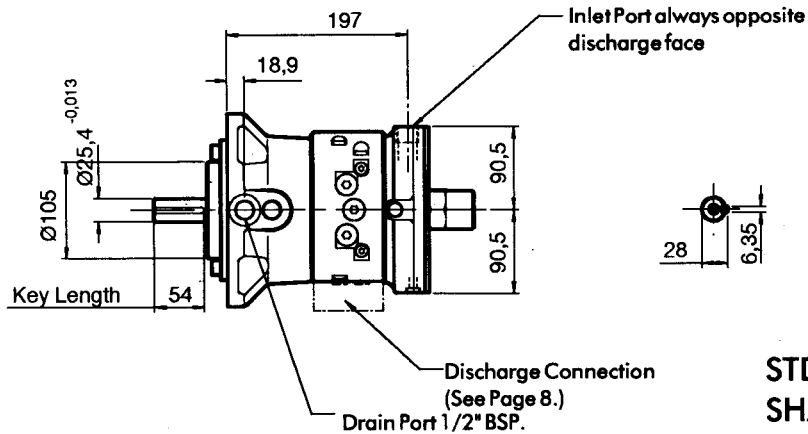
REAR VIEW



MOUNTING FACE



Four Mounting Holes  $\varnothing 10,3$



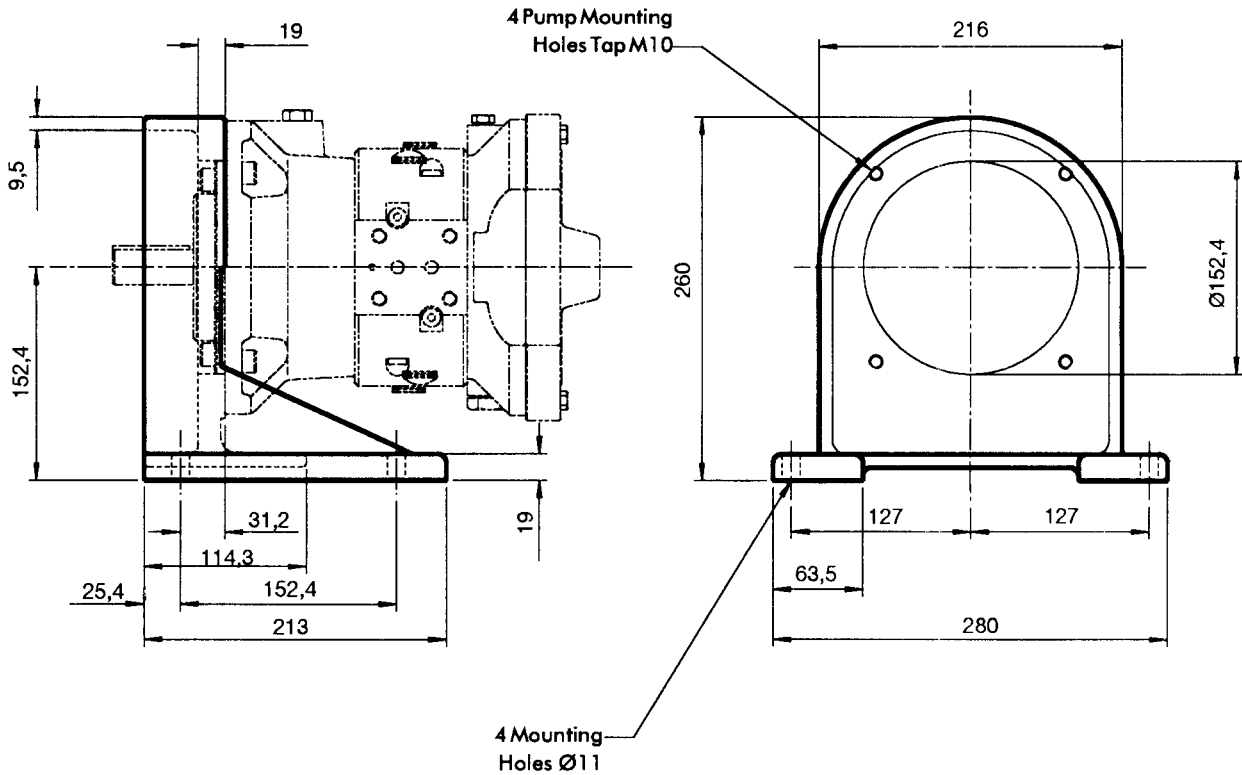
**STD KEYED  
SHAFT**

Unit mass is 41,5kg.

P01022G

**PFBAA or PFBAE**

Installation Drawing - Foot Mounting

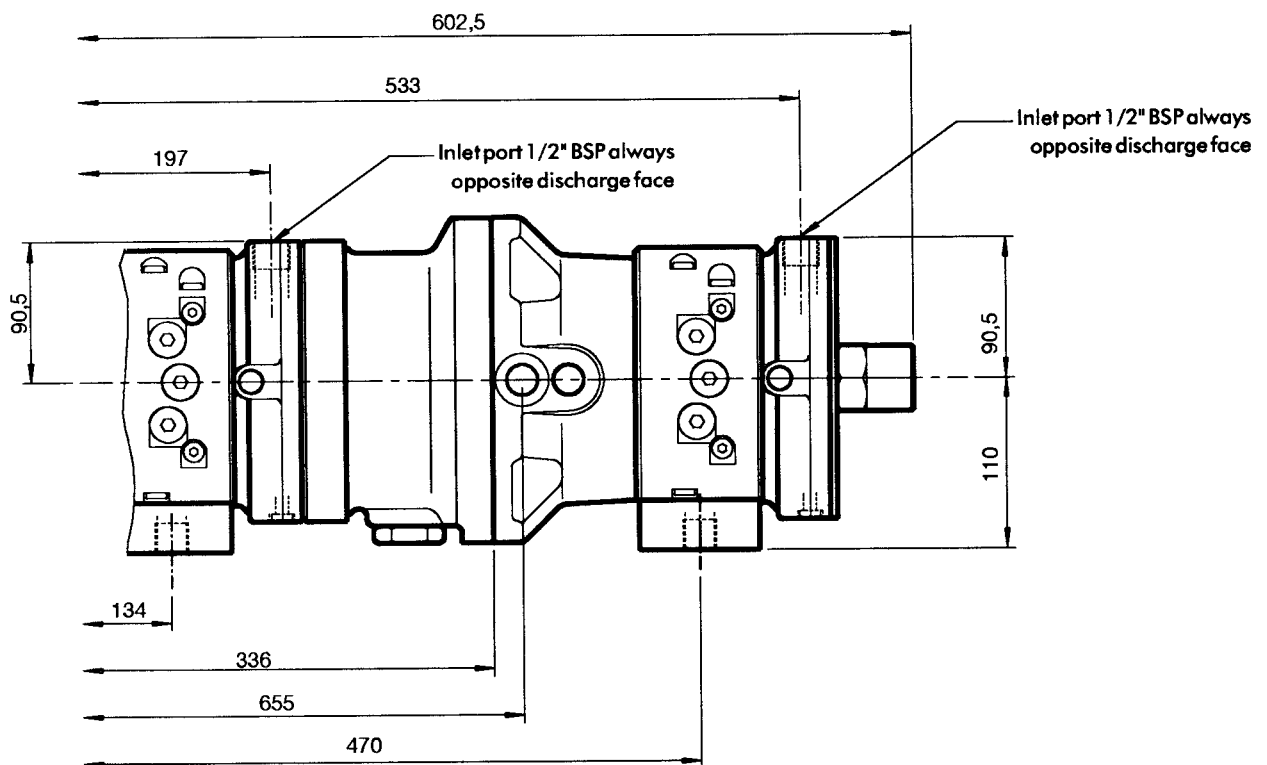


Additional mass of  
foot mounting 9kg.

**PFBAA or PFBAE**

Installation Drawing - Tandem Mounting with other PFBA\* Pumps

## PFBA\* - PFBA\* PUMPS

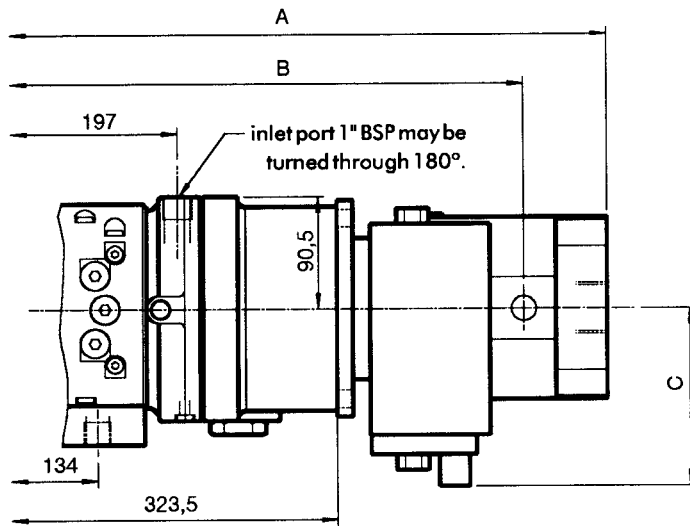


Additional mass of  
intermediate housing 12,2kg.

## PFBAA or PFBAE

Installation Drawing - Tandem Mounting with other pumps

### PFBA\* - PVWH PUMPS



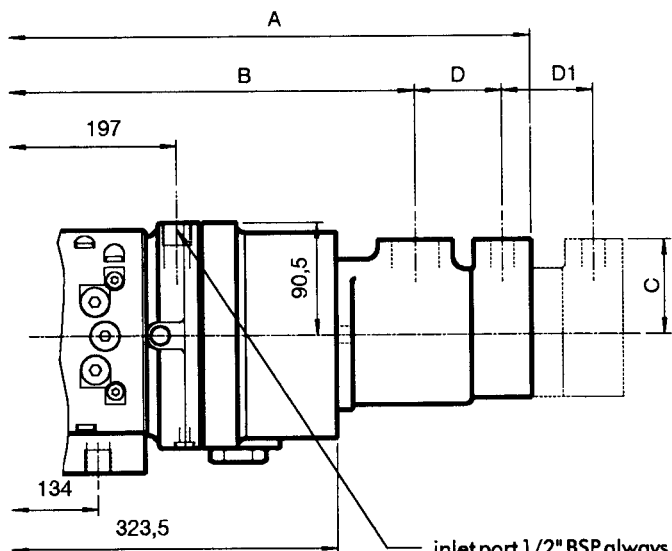
Additional mass of intermediate housing 10,7 kg.

DIMENSIONS (mm)			
SIZE	A	B	C
04	506,5	454,5	123,2
06/10	506,5	454,5	123,2
11/15/20	539,5	473,0	144,0

Note:- for full installation data and dimensions for PVWH pumps, see Oilgear Towler PVWH pump bulletins 47015, 47016 and 947015.

Mountings can be supplied suitable for other pumps using SAE2 - bolt fixings type A, B, B - B.

### PFBA\* - VICKERS VANE PUMPS



Additional mass of intermediate housing 10,7 kg.

DIMENSIONS (mm)					
	A	B	C	D	D1
V10	450,3	347,9	63,0	78,8	—
V20	463,5	354,3	69,0	86,0	—
V2010	556,2	350,2	76,0	94,8	87,3
V2020	556,7	350,2	74,7	95,5	85,1
20V	479,3	386,8	76,0	69,5	—
25V	485,3	361,3	76,2	83,0	—

Vickers vane pumps can be rotated in 90° increments.

Note:- for full installation data and dimensions for Vickers vane pumps see Vickers catalogue.

6

ENGINEERING

Pump, Fixed Delivery  
(Separately Boosted)**Oilgear  
Towler****PFBAA or PFBAB**

## Pump Sizes and Data

PUMP SIZES AND DISCHARGE DATA		
Pump Size	Single Discharge (cc/rev)	Double Discharge (cc/rev)
001	0,75	N/A
01-	1,5	N/A
02-	3,0	N/A
1--	2,25	N/A
2--	4,5	2,25/2,25
3--	6,75	2,25/4,5
2/2	9,0	4,5/4,5
4--	9,25	N/A
5--	11,5	2,25/9,25
6--	13,75	4,5/9,25
8--	18,5	9,25/9,25

Case drain flow 9 L/min

Minimum pipe size 16OD x 2mm wall

Further structural limitations should be taken into consideration:

Discharge block screws	1200 bar
Thrust plate Size 8	375 bar (mineral oil ISO 32 HM)
Housing screw Size 8	1000 bar
Shaft Power Input @ 1500 rpm	28kW (38HP)
Maximum Input Torque	180Nm (133 lbf. ft.)
Maximum Through Drive Torque	95Nm (70 lbf. ft.)
Minimum Shaft Speed	700 RPM



Pump, Fixed Delivery  
(Separately Boosted)

ENGINEERING

7

PFBA or PFBAE

Coding

PUMP CODE

Block Number	1	2	3	4	5	6	7		8	9	10	11	12A	12B	13	14	
Explanation																	
Pump Example	P	F	BA	*	***	A1	B	—	*	*	*	*	*	*	1	*	

15
*

4 CONSTRUCTION

- E** 95/5 low viscosity fluids separate boost
- A** mineral oil viscosity fluids separate boost

5 NOMINAL SIZE

- 001** 0,75 cc/rev
- 01-** 1,5 cc/rev
- 02-** 3,0 cc/rev
- 2/2** 9,0 cc/rev
- 1--** 2,25 cc/rev
- 2--** 4,5 cc/rev
- 3--** 6,75 cc/rev
- 4--** 9,25 cc/rev
- 5--** 11,5 cc/rev
- 6--** 13,75 cc/rev
- 8--** 18,5 cc/rev

8 MAXIMUM DESIGN PRESSURE

- 3** PFBAE Pumps
- A** PFBA Pumps

9 ROTATION

- L** Anti-clockwise
- R** Clockwise

10 MOUNTING PATTERN

- S** Spigot / Flange
- F** Foot

11 INLET POSITION

- L** Left
- R** Right

12A DISCHARGE POSITION

- L** Left
- R** Right

12B DISCHARGE CONNECTION BLOCK

- N** None
- Up To 500 bar**
- S** Single
- D** Double
- R** Relief Valve
- Z** Special
- U** Relief & Unloading Valve
- Up To 1000 bar**
- A** Single Stainless Steel Tube Ø16 x 4 wall.
- B** Double Stainless Steel Tube Ø16 x 4 wall

14 SEALS

- B** Buna-N
- V** Viton
- E** EPDM
- Z** Special

/

15 ENDS

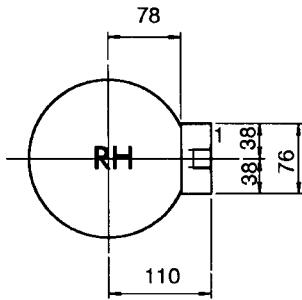
- C** Closure
- F** Tandem PFBA
- J** JorHVane V20
- A** SAEA/PVW 06/10
- K** K Vane 20V, 25V
- B** SAEB/PVW 15/20

/REAR OR TANDEM PUMP CODE

## PFBAA or PFBAE

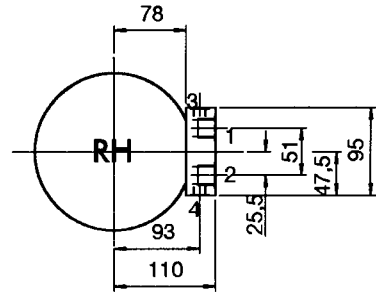
Installation Drawing - Discharge Blocks viewed from Drive Shaft End

### UP TO 500 BAR DISCHARGE

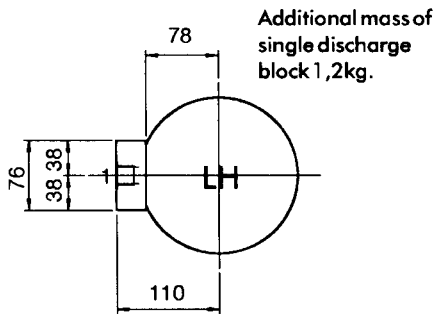


RH = Right Hand  
LH = Left Hand

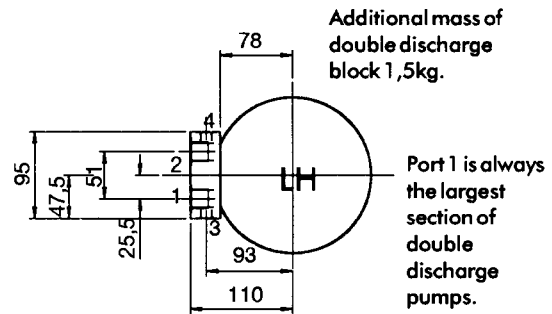
CONNECTION SIZES	
CONN	SIZE
1	1/2" BSP
2	1/2" BSP
3	1/4" BSP
4	1/4" BSP



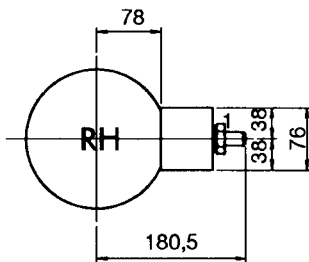
#### SINGLE DISCHARGE



#### DOUBLE DISCHARGE

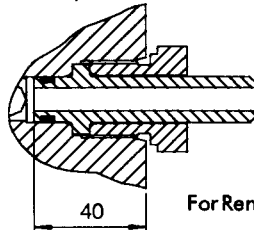


### UP TO 1000 BAR DISCHARGE

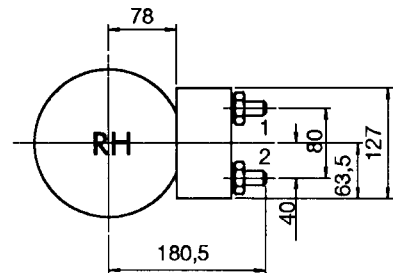


#### Assembly

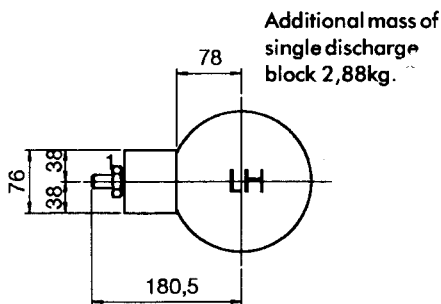
Pipe is stainless steel  
Ø16x4 wall, 304, 316 or  
321 hydraulic tube.



For Removal



#### SINGLE DISCHARGE



#### DOUBLE DISCHARGE

