

Allis Chalmers PWO Pump Range Tuff P Series Paper, Pulp and Process Pumps

The old Allis Chalmers PWO paper / pulp and process pump range was a derivative of the [original CW range](#) and, as such, had a tangential discharge nozzle and had a commonality of drive end parts. There were two distinct bearing frame styles within the USA design ~ these being the F8 and F9 units. The F8 was more or less the same as the F6 bearing frames used on the CW type pumps, whilst the F9 was more akin to the frame used on the larger CSO style pumps. Very confusing for the uninitiated and less conversant among us. To add even more confusion to the above, the Allis Chalmers Canadian operation utilised the basic hydraulic design of the older US style PWO in order to produce a more modern and commonly requested "European Style" PWO pump; with this having a top centreline discharge nozzle and a completely redesigned drive end. Over and above the design changes, the Canadian designs altered the pump size structure slightly and produced units that did not derive solely from the US designs.

The pump sizing will become clear later and it should be noted that although hydraulic design was similar in both the US and Canadian pumps, the parts generally did not interchange; although impellers in some sizes can be made to fit.

As previously and commonly stated within this website, neither [Allis](#)

Please refer to Tuff Pumps and its [P Series range](#) for further information and PDF literature downloads



**Typical P10/8-17 Pump
equivalent to 10x8x17 PWO
with indirect v-belt drive**



**Typical P10/8-17 Pump
equivalent to 10x8x17 PWO
with standard direct drive
system**

[Chalmers Pumps](#) nor [Tuff Pumps](#) are manufacturers of the original Allis Chalmers pumps and/or parts. Tuff Pumps clearly manufactures "equivalent" and/or "interchangeable" pumps and parts that are 100% suitable for and compatible with the old Allis Chalmers models and, with this in mind, Tuff Pumps can supply current end users with its new [Tuff Pumps P Series](#) pumps and parts; noting that the current [P Series pump range](#) is equivalent and interchangeable with the younger "Canadian Style" of PWO.

However, should an end user require the old "US Style" of PWO equivalent, Tuff Pumps can oblige and will happily do so by utilising and/or altering its [H Series pumps](#) and/or parts it commonly keeps in stock.

The [P Series range of pumps](#); as manufactured and supplied by Tuff Pumps, is available in a wide variety of material combinations; these being hydraulic ends in all ductile iron; ductile iron (casings and stuffing box covers) with 316SS or 317SS or Duplex Stainless Steel impellers and suction wear plates; or all 316SS or 317SS or Duplex Stainless Steel (CD4Mcu or 20SS) construction. All bearing frames and bearing housings are in SG/Ductile Iron, shafts in SAE 1045 Steel or 316SS or Duplex Stainless Steel, shaft sleeves in hardened or non-hardened Stainless or Duplex Stainless Steel, and bearing frames can be supplied with grease or oil mist lubrication systems.



**Typical P Series Pump Parts
casings, impellers,
drive end bearing frame**



**Typical P12/10-17
equiv. to 12x10x17 PWO
pump with spacer type
coupling and all duplex
stainless steel construction**



Pump Sizes

Canadian Style Construction

Top Centreline Discharge Nozzle:

Group 1 Bearing Frame:

P6/3-14 = 6x3x14 PWO

P6/4-14 = 6x4x14 PWO

Group 2 Bearing Frame:

P8/4-17 = 8x4x17 PWO

P8/5-17 = 8x5x17 PWO

P8/6-17 = 8x6x17 PWO

P10/8-17 = 10x8x17 PWO

P12/10-17 = 12x10x17 PWO

Group 3 Bearing Frame:

P8/6-21 = 8x6x21 PWO

P10/8-21 = 10x8x21 PWO

P12/10-21 = 12x10x21 PWO

P14/12-21 = 14x12x21 PWO

P16/14-21 = 16x14x21 PWO

USA Style Construction

Tangential Discharge Nozzle:

Group 1 Bearing Frame:

P4/3-12 = 4x3x11.5 PWO

P5/4-12 = 5x4x11.5 PWO

Group 2 Bearing Frame:

P8/4-17 = 8x4x17 PWO

P8/5-17 = 8x5x17 PWO

P8/6-17 = 8x6x17 PWO

P10/8-17 = 10x8x17 PWO

P12/10-17 = 12x10x17 PWO

Group 3 Bearing Frame:

P8/6-21 = 8x6x21 PWO

P10/8-21 = 10x8x21 PWO

P12/10-21 = 12x10x21 PWO

P14/12-21 = 14x12x21 PWO

P16/12-21 = 16x14x21 PWO



**Typical P8/6-17
equivalent to 8x6x17 PWO
Pump with
150 kW x 1000 rpm engine
and priming tank fitted**

**Please refer to Tuff Pumps
and its [P Series range](#)
for further information and
PDF literature downloads**

For those that do not know, the first number in the above pump designation refers to the suction nozzle nominal bore, the second to the discharge nominal bore, and the third to the full impeller diameter.

As with the original range, the [Tuff Pumps P Series](#) equivalents can be supplied with standard gland packed stuffing boxes, mechanical seals, or dynamic/expeller type sealing arrangements.

Identification of the US Style H/PWO can be made by looking at the [Tuff Pumps H Series range](#) (equivalent to old Allis-Chalmers [CW type](#)) as the pumps are more or less identical in looks. The main noticeable difference in the two is the fact that the P/PWO has a semi-open style impeller and profiled suction wear plate, where the H/CW has a closed impeller and a flat style suction wear plate.