FLOWSERVE®

POLYCHEM S-SERIES

ANSI AND ISO NON-METALLIC CHEMICAL PROCESS PUMPS

Product Reference Manual

FPD-1138

Experience In Motion

PolyChem S-Series

ANSI and ISO Non-Metallic Chemical Process Pumps

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Product Summary and Description

Product Description

The Durco PolyChem Pump family consists of the following:
M-Series: Magnetically coupled sealless pump (ANSI and ISO) configurations – PFA lined metal
S-Series: Mechanically sealed (ANSI and ISO) configurations – PFA lined metal
GRP: Mechanically sealed (ANSI) configuration – engineered polymer composite

This manual is designed to provide detailed information for the following pumps.

Durco PolyChem S-Series Pumps
PolyChem S-Series pumps are available in three groups:
- ANSI Group 1 / ISO Group A (Group 1/A)
- ANSI Group 2 / ISO Group B (Group 2/B)
- ISO Group C

General Overview

- Models designed to conform to both ASME (ANSI) B73.1M and ISO 2858 dimensional standards
- Rated to 300°F (150°C). (Refer to temperature/pressure curve located in section 4, General Engineering Data)
- Wide range of mechanical sealing options
- Fluoropolymer lined (PFA compatibility) throughout
- Available in a wide range of sizes

Pump Designation

The S-Series pumps are designated by a two letter prefix (PS) which identifies the pump line. ANSI sizes then include the suction, discharge and nominal impeller diameter in U.S. customary units as listed below:

Typical ANSI pump size identifier: PS3x2-10 Alloy: DIPA (only)

ISO pumps list the discharge and the nominal impeller diameter in metric units as listed below:

Typical ISO pump size identified: PS50-250 Alloy: DIPA (only)

Operating Parameters

- Flows to 420 m^3/h (1860 gpm)
- Heads to 145 m (480 ft)
- Pressures to 17 bar (250 psi)
- Temperature: -30°C to 150°C (-20°F to 300°F)
- Viscosity: 1000 cP
- Solids: 3000 micron size

Components

Descriptions of key components of the S-Series design follow. Component names are followed by a part number that is consistent with the cross sectional sales prints located in the “spare parts” section of this binder. Item numbers follow in parenthesis for additional reference. Format is ANSI/ISO where applicable.

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Standard and Optional Construction

Casing (1100)

S-Series casings are constructed of ductile cast iron. ANSI casings are certified to meet requirements of ASTM A395 60-40-18 (E3020). ISO casings are certified to meet requirements of EN1563 JS1025 (E2025). Casings are lined with a non-reinforced pigmented PFA fluoropolymer. Liner thickness is minimum 3.18 mm (0.125 in). Liner is locked in place with a combination of locking grooves and perforated metal strips. Both pigment and PFA fluoropolymer are FDA approved. (Alloy code: DIPA)

The casing is the same as that used for the PolyChem M-Series pumps except a TFE pin (562.1/241) and thrust bearing (544.1/211) are NOT pressed in the suction area.

Standard flange drillings accept through bolts with the exception of the following, which use tapped flanges:

- 32-160: Suction / Discharge
- 32-250: Suction / Discharge
- 50-250: Suction / Discharge
- 65-315: Suction / Discharge
- 100-315: Discharge
- 2x1-10: Suction / Discharge
- 3x2-10: Suction / Discharge
- 4x3-10: Suction / Discharge
- 3x2-13: Suction / Discharge
- 4x3-13: Suction / Discharge
- 6x4-13: Suction

Standard foot drilling is 2 locations for ANSI and 4 for ISO.

A casing drain is the only planned tapped location, but it is not available at this time. Please contact factory for availability.

Jacketing options have not been pre-engineered.

All flanges are raised faced. ASME (B73.1): 150# ISO (2858): 16PN

Optional flange drillings are available. Please consult the factory for lead times when quoting these options.

- ISO 2858 pumps with ANSI flange drilling (ASME B73.1)
- ISO 2852 pumps with JIS flange drilling (JIS B2210)

Impeller (2200)

The impeller is constructed of PFA and reinforced by a carbon steel or stainless steel insert.

S-Series pumps utilize fully enclosed impellers for all sizes up to and including 10 inch ANSI and 250 mm ISO pumps. The impeller is a single-piece design and utilizes a carbon steel insert. No welding is required during manufacturing. The fully enclosed impeller is fully trimmable from maximum to minimum diameter, so only one part number is required to cover the entire range of trims for each pump size.

S-Series pumps utilize fully open impellers for 13 inch ANSI and 315 mm ISO pumps. The manufacturing technique used to produce enclosed impellers was not viable for making these larger impellers. In addition, because there are no 315 mm or 13 inch M-Series pumps, interchangeable hydraulics between the S-Series and M-Series product lines was not required. The open impeller design utilizes a stainless steel insert that fully supports the impeller vanes, similar to the L-Series design. Different part numbers exist for specific trim ranges for each pump size. Refer to price pages for details.

The impeller is threaded to the shaft and tightens with correct rotation (similar to standard Mark 3 design). An O-ring gasket (#3) is required to seal the threads. Material options are Viton (VA), ethylene propylene (EPR) or Kalrez® (KAL).

Adjustment of the impeller is required and made with a threaded micrometer adjuster. Enclosed impellers are set off the rear cover plate. Open impellers are set off the casing. Refer to the S-Series User Instructions (UI) for details, available in section 15.

Shaft (2100)

A solid end-to-end steel BB hook type shaft is standard. No interchangeability exists with other Mark 3 shafts. ANSI and ISO shafts are unique. Solid shaft arrangements are also available (see price sheets in section 12). Shafts are designed to accept silicon carbide or metal sleeve. Shaft diameters under the sleeves are as follows:

- Group 1/A – Approximately 25 mm (1.0 in)
- Group 2 – Approximately 38.1 mm (1.5 in)
- Group B – Approximately 33.0 mm (1.3 in)
- Group 2 HD – Approximately 44.4 mm (1.75 in)
- Group C – Approximately 42.9 mm (1.69 in)

Note: shaft sleeve butts against shoulder on shaft by design.

Sleeve (shaft) (2400)

A shaft sleeve is provided as standard to contact the process fluid. Self-sintered silicon carbide (SC3) is standard material for the sleeve. Optional sleeve materials are available as listed below.

Outer diameter:

- ANSI Group 1: 1.375 in
- ANSI Group 2: 1.875 in
- ANSI Group 2 HD: 2.125 in
- ISO Group A: 35 mm
- ISO Group B: 43 mm
- ISO Group C: 53 mm

Note: ISO (DIN) and ANSI sleeves are unique to accommodate mechanical seal requirements.

Material options:

- Silicon carbide – self sintered (SC3)
- Hastelloy® C276 (C276)
- Titanium (TIW)

Rear Cover Plate (1220)

The rear cover plate is a ductile cast iron component lined with a pigmented PFA fluoropolymer.

The standard configuration is an oversized tapered bore with flow modifiers similar to the FML or E design. The bolt circle conforms to the ASME (ANSI) and DIN standards for a large bore style box.

Inside dimensions allow for the mounting of most common cartridge mechanical seals.

A gasket is required to insure a proper seal between the rear box bore and a gland or other mating device.

An optional non-metallic canister (1220.2) may be installed to create an inboard seat for a double component mechanical seal.

Please refer to the mechanical seal information located in section 15 for details on mechanical seal packages.

Canister (1220.2)

An optional carbon reinforced fluoropolymer canister can be installed into the rear cover plate (1220) to create an inboard seat for double component mechanical seals. The canister is a re-useable component designed to provide an economical double seal arrangement. Consult factory for applications greater than 121°C (250°F).

A gasket (4590.3) is required on either side of the canister mounting flange. A gland (4120) designed for the canister must be utilized.

Unique canisters exist for both DIN and ANSI arrangements to allow for both seal dimensions.

Glands / Follower Flanges (4120)

Four types of glands / follower flanges are available for S-Series pumps:

1. Clamped	Alloy:	CN-7M	
2. O-ring / pinned	Alloys:	CN-7M	CW-6M
3. O-ring / pinned V&D	Alloys:	CN-7M	CW-6M
4. Double-canister	Alloy:	CN-7M	

Please refer to the mechanical seal information located in section 15 for details on mechanical seal packages and glands / follower flanges.

Fasteners (#ALL)

The table below shows all fasteners in the pump by location, material and dimensional standard:

S-Series Fastener Identification

Item #	Description	ASME (ANSI)	ISO	Location	Material ANSI/ISO
6572.2	Stud – gland	U.S. Customary	Metric	External	B8CT/A270
6580.2	Hexnut – gland	U.S. Customary	Metric	External	E8/A270
6572.1	Stud – Casing	U.S. Customary	Metric	External	B7TF/A270
6580.1	Hexnut – Casing	U.S. Customary	Metric	External	SRTF/A270
6569.1	Plug – Housing drain	U.S. Customary	U.S. Customary	External	SR/88
6570.4	Fastener – Foot/Brg Hsg	U.S. Customary	Metric	External	SR/88
6570.2	Fastener – Cover/Brg Hsg	U.S. Customary	Metric	External	SR/88
6570.3	Set screw – brg carrier (1/A)	U.S. Customary	U.S. Customary	External	SR/88
6570.3	Set screw – brg carrier (2/B)	U.S. Customary	Metric	External	SR/88

Oil Seals (4310.1, 4310.2)

ANSI: S-Series pumps utilize the same exclusive double row lip seals as found on Durco Mark 3A power ends. Upgrade options include any of the seals available to the Mark 3A. Note that the Group 2 HD design (2.125 inch shaft diameter) utilizes an Inpro labyrinth oil seal on the inboard side as standard.

ISO: Group A S-Series pumps utilize the same inboard seal as the Mark 3A and use a unique outboard seal. Group B and C S-Series pumps utilize the same oil seals as the Chemstar product line. The following upgraded labyrinth type bearing protectors are available as an option:

- Inpro VBXX bearing isolators – BZV and 303V alloys
- Flowserve – BBV alloy

Bearing Housing (3200)

Group 1/A: Both ANSI and ISO S-Series pumps use a bearing housing or power-end designed with Mark 3A features. Both the ISO and ANSI are unique from a standard 1K power-end.

The ANSI bearing housing has a bearing span equal to our Mark 3A pump. The ISO bearing span is longer as depicted in the cross sectional drawings.

All features / options found on the Mark 3A pump are available on both the ANSI and ISO S-Series pumps including Ultralign. Ultralign with IEC motors has not been pre-engineered but can be provided at special request.

Please note ISO pumps have a unique inboard oil seal – please refer to “Oil seals” above.

ANSI bearing housings are constructed from ductile cast iron which meets ASTM A536 65-32-12 (E3035). ISO bearing housings are constructed from ductile cast iron which meets DIN EN1563 JS1030 (E2008).

Group 2/B/C: ANSI pumps use the Mark 3A, Group 2 bearing housing. All Mark 3A features and options apply.

ISO pumps are designed similar to the Chemstar bearing housing with one major exception. The Group B and C, ISO bearing housings utilize a separate adapter (1340) as opposed to the integral adapter design normally used in the Chemstar product line. The Group B and C, Chemstar bearing carrier (3240) is utilized in the S-Series design, and all Chemstar bearing housing options are available on the S-Series product line.

ANSI and ISO bearing housings are constructed from cast iron which meets ASTM A48 25A (E3006) for ANSI and EN1561 JL1040 (E2004) for ISO.

Adapter (1340)

Group 2 ANSI and Group B and C ISO pumps utilize an adapter to bridge the bearing housing to the wet end of the pump. This component is pressure retaining and is made from ductile cast iron. The ANSI castings are certified to meet A536 65-42-12 (E3035). The ISO castings are certified to meet EN1563 JS1030 (E2008).

When an HD (2.125 inch shaft diameter) power end is specified, the adapter is modified to accommodate a larger, inboard labyrinth oil seal.

Miscellaneous / Accessories:

Group 2 HD Power End

The 6x4-13 pump size has been designed with a 54 mm (2.125 inch) shaft diameter through the seal chamber. Design calculations indicated this pump would exhibit higher than acceptable shaft deflection with a 47.6 mm (1.875 inch) shaft diameter. The 2.125 inch shaft diameter was selected to ensure a wide variety of mechanical seals would be available at economical prices. As a result, the pump figure number is PS6x4-13HD. The "HD" designation stands for "Heavy Duty".

The HD power end is nearly identical to the standard Mark 3A power end that is utilized on standard Group 2 S-Series pumps. The following parts are substituted on the HD power end.

- single row, inboard roller bearing (fits standard Mark 3A bearing housing)
- labyrinth, inboard oil seal is standard (Inpro VBXX)
- modified adapter to accept larger, inboard oil seal
- larger carbon steel shaft for sleeve (solid, composite shafts available in ZH, ZC20, EHC, EHB)
- 54 mm (2.125 inch) shaft sleeve in SC3 silicon carbide or variety of metallic options (C276, etc.)

The creation of the HD power end for the PS6x4-13 HD afforded Flowserve the ability to offer this optional power end for all Group 2 PolyChem S-Series Pumps. Simply by changing out the parts noted above, and Group 2 pump can be supplied with a larger, more robust shaft and sleeve. Standard rear cover plates are utilized in spite of the larger than normal shaft diameter since the FML style seal chamber provides sufficient room for a complete offering of mechanical seals. The new pump would carry an HD suffix similar to the PS6x4-13HD. Due to the larger shaft / sleeve diameter, two other items must be considered.

- larger impeller O-ring required for 2.125 inch (54 mm) sleeve (in stock)
- different impeller part number required due to larger O-ring groove (not stocked – consult factory for delivery)

Many customers may prefer this optional power end for high specific gravity services such as bromine. List price adders for this option are provided in the new price pages.

Material Certifications

Certifications for all cast components can be achieved with similar procedures as standard Mark 3 pumps. Certificates of compliance can be provided on all components. Specific testing and documentation may not be readily available on all components because many items are out sourced. Contact pricing group prior to quoting pumps with special test/documentation requirements.

Power Monitor (KW941)

Power monitors are probably the most widely used and least expensive device to install. Our KW941 Pump Power Monitor' is designed to detect low and no flow conditions after a pump has started. It will not provide much protection for a pump that is started dry. Power monitors can also detect overload conditions that can be an indication of excessive wear, rubbing, or a clogged impeller. Dual trip points and corresponding trip delays for both high and low power readings provide maximum flexibility. Start-up delays allow for full protection of self-priming pump applications.

Power monitors are set directly from the pump performance curve and eliminate the need to run the pump in an adverse condition to set the high or low trip points.

Flowserve offers four models – refer to Pricing in section 12 for additional details.

DurcoShield

DurcoShields are available for all pump sizes.

ANSI	ISO
Group 1: DY57953A	Group A, 132 CL: DY57954A
Group 2, 10 inch: DY56447B	Group A, 160 CL: DY57955A
Group 2, 13 inch: DY58871A	Group B, 180 CL: DY58092A
Group 2, 13 inch HD: DY58872A	Group B, 200 CL: DY56446C
	Group B, 315 mm: DY58871B
	Group C, 315 mm: DY58871D

"C" Flange Adapter (CI) with guard and/or "C" plus features

Ultralign is available on S-Series pumps. Ultralign with IEC motors has not be pre-engineered but can be provided at special request.

Pump Features and Benefits

Flowserve has been a leader in non-metallic pump and materials development for over four decades. Under the Durco trade name, we introduced the first epoxy resin known as the E-Series in 1957. In 1969 we introduced the T-Line Teflon lined pump which was another first of the industry. In 1975 the F-Series pump offered the industry a fiberglass reinforced plastic pump which did not require metal framework for reinforcements. The L-Pump line was introduced in an effort to satisfy the market needs of both the F and T-Line pump and thereby aid in the consolidation of the product lines.

Durco was left with a fragmented product line which had become outdated both technically and in terms of cost. The current product line was also void of the fastest growing non-metallic pump product, a sealless mag drive design. During the mid-90s, the sealless lined mag drive pumps began to enjoy growth rates at a rapid pace. With the introduction of the PolyChem M-Series pump, Flowserve has answered the call of both our customers and our global sales force.

Features	Benefits
Complies dimensionally to global standards: • ANSI B73.1 • ISO 2858 • JIS Drilling	The PolyChem S-Series pump can fit into any pipeline found throughout the global process industries. • Uses existing piping and pump foundations • Simplifies retrofitting • Lower installation costs
PFA material	PFA is globally accepted as the preferred fluoropolymer for corrosive process media. PFA offers temperature capabilities 149°C (300°F) not found in other non-metallic pumps.
Impeller	High efficiency design is fully trimmable, fully enclosed, single piece design through 250 mm (10 in) sizes. Carbon steel core for reinforcement. 315 mm (13 in) sizes utilize fully open design, with full vane support provided by steel core.
Rugged metal armor	Offers durability not found in solid plastic pumps. The Ductile Cast Iron armor is certified to meet material specifications of ASTM A395 (ANSI models) and GGG40.3 (ISO models).
Oversized FML / E style seal chamber	An industry first in non-metallic sealed pump design. Allows Flowserve to build on the success of the Seal Sentry product already available in metallic designs. Seal life is extended due to superior purging of heat, solids and vapors. • Self-flushing, self-venting, self-draining
Multiple seal accommodation	Accepts “off-the-shelf” seals from multiple seal vendors, thereby, meeting customers’ preferences in terms of seal selection. Seal options are readily available from multiple sources, therefore, customers will enjoy commercial benefits of a competitive situation.
Advanced non-metallic cartridge seal technology	State-of-the-art seal technology offers the simplicity of a cartridge design, with all non-metallic, corrosion resistant wetted components.
Innovative seal canister attachment device	A simple addition to the FML / E rear cover that allows for traditional double component seals. Eliminates the need for stocking additional rear covers.
Rugged power end with Mark 3A features	• Micrometer adjustment accurately sets impeller clearance in seconds while in the shop or field • Large 25 mm (1.0 in) diameter sight glass for quick and accurate check of oil level • Spot drill points for hand held horizontal and vertical vibration monitor • Clean Room assembly assures optimum lubrication environment
Power end Ooptions	• ANSI 3A power end featuring a three-year performance guarantee • Labyrinth oil seals • Magnetic drain plug • Regreasible or double-shielded bearings • Oil Slinger
Optional casing drain	Contact factory for availability.

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FLOWSERVE

PolyChem™ Non-Metallic Chemical Process Pumps

ASME and ISO

M-Series

S-Series

GRP

VGRP

Bulletin PS-10-17g (E)

FLOWSERVE

Pump Supplier To The World

Flowserve is the driving force in the global industrial pump marketplace. No other pump company in the world has the depth or breadth of expertise in the successful application of pre-engineered, engineered, and special purpose pumps and systems.

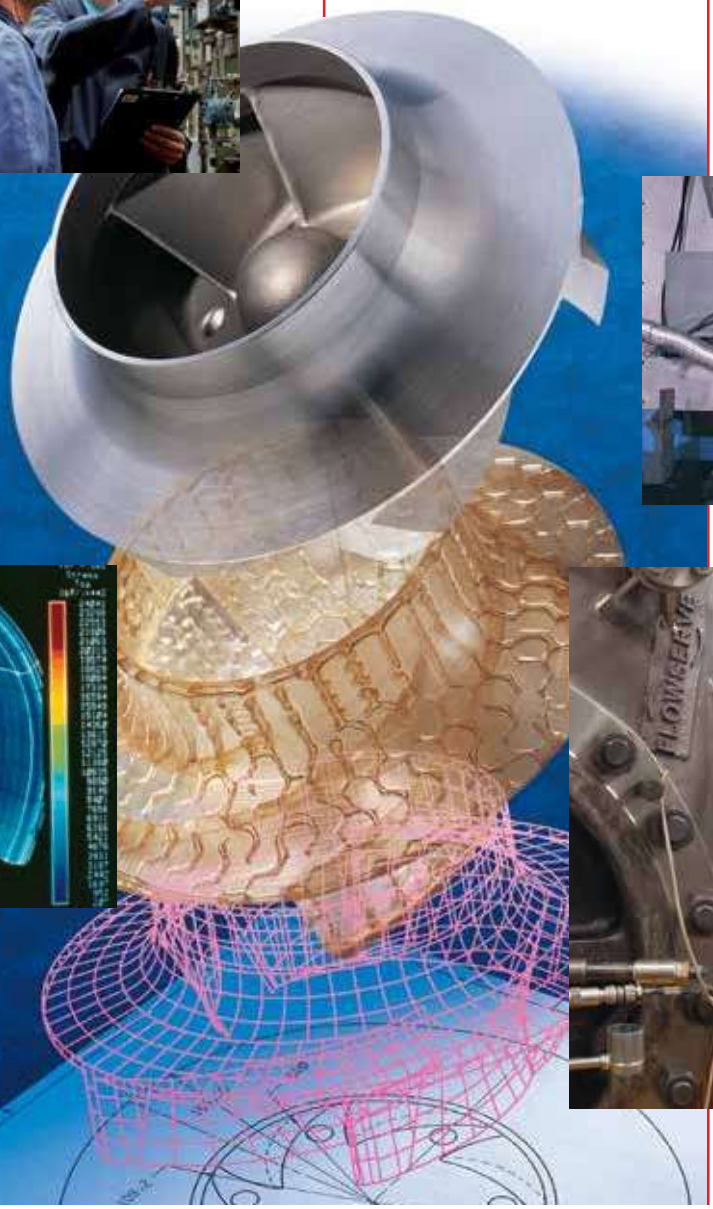
Pumping Solutions
Flowserve is providing pumping solutions which permit customers to continuously improve productivity, profitability and pumping system reliability.

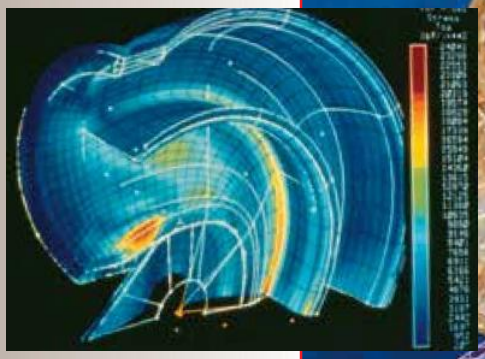
Market-Focused Customer Support
Product and industry specialists develop effective proposals and solutions directed toward market and customer preferences. They offer technical advice and assistance throughout each stage of the product life cycle, beginning with the inquiry.

Dynamic Technologies
Flowserve is without peer in the development and application of pump technology, including:
g dO L VWN P RT PP T R
g A PNSL TNLWOP TR
g A L P TLW NTP NP
g PWWRP X T R
g A L LN T R PNS WRd

Broad Product Lines
Flowserve offers a wide range of complementary pump types, from pre-engineered process pumps, to highly engineered and special purpose pumps and systems. Pumps are built to recognized global standards and customer specifications.

Pump designs include:
g FT RWW LRP NP
g 6P b PP MPL T R
single-stage
g 6P b PP MPL T R
multistage
g I P TNLW
g F MX P TMWX
g D TTaP OT WWNPX P
g B NWPL
g F PNTLWd

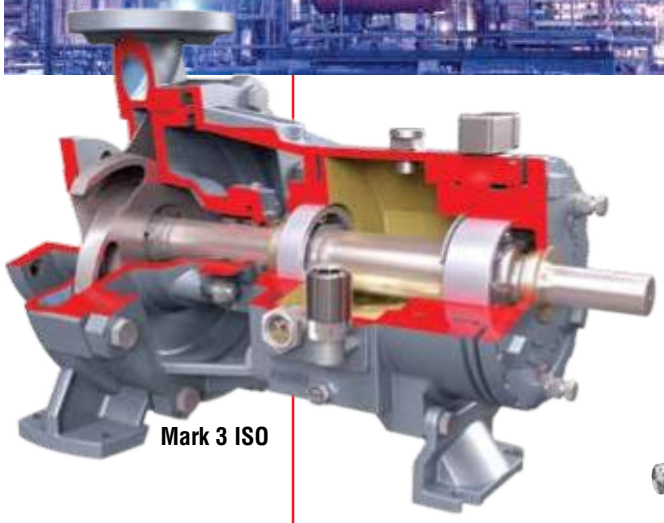




PolyChem Non-Metallic Chemical Process Pumps

Non-Metallic Pumps Designed to Global Standards

Embracing a global approach to pump design, Flowserve offers sealed and sealless PolyChem non-metallic pumps engineered 5FA9LOFCOPTRNTPTL LO FOTWWRPNTTNLT ' The fluoropolymer lined AFPTP and S-Series pumps and the GRP engineered polymer composite pump are well suited for highly corrosive applications in the worldwide process industries.



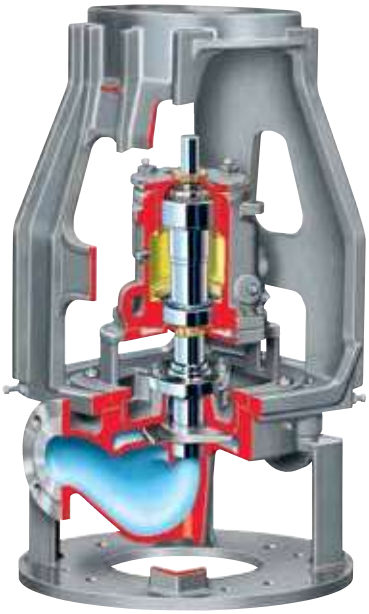
Mark 3 ISO

Applications

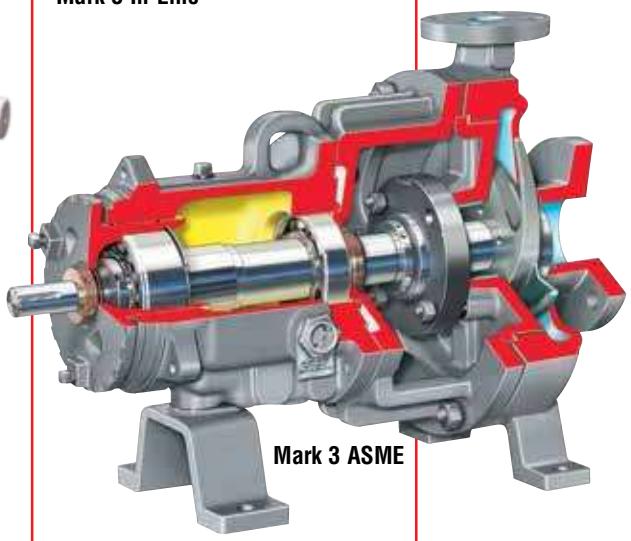
- g7SPXTNLWW
- gFPPWL O TXLdXPLW industry
- gALTPPaT XP
- gJL PbLP PLXP
- g5 LTX
- gATTRb V
- gATN NSTXL LN TR

Complementary Pump Designs

- gALV, GA 5FA9XPLWWN chemical process pump
- gALV, 5FA9TWPNSPXTNLW process pump
- gALV, FCXPLWWNSPXTNLW process pump



Mark 3 In-Line



Mark 3 ASME

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PolyChem M-Series Fluoropolymer Lined Sealless Pumps

Close Coupled

Worldwide Application

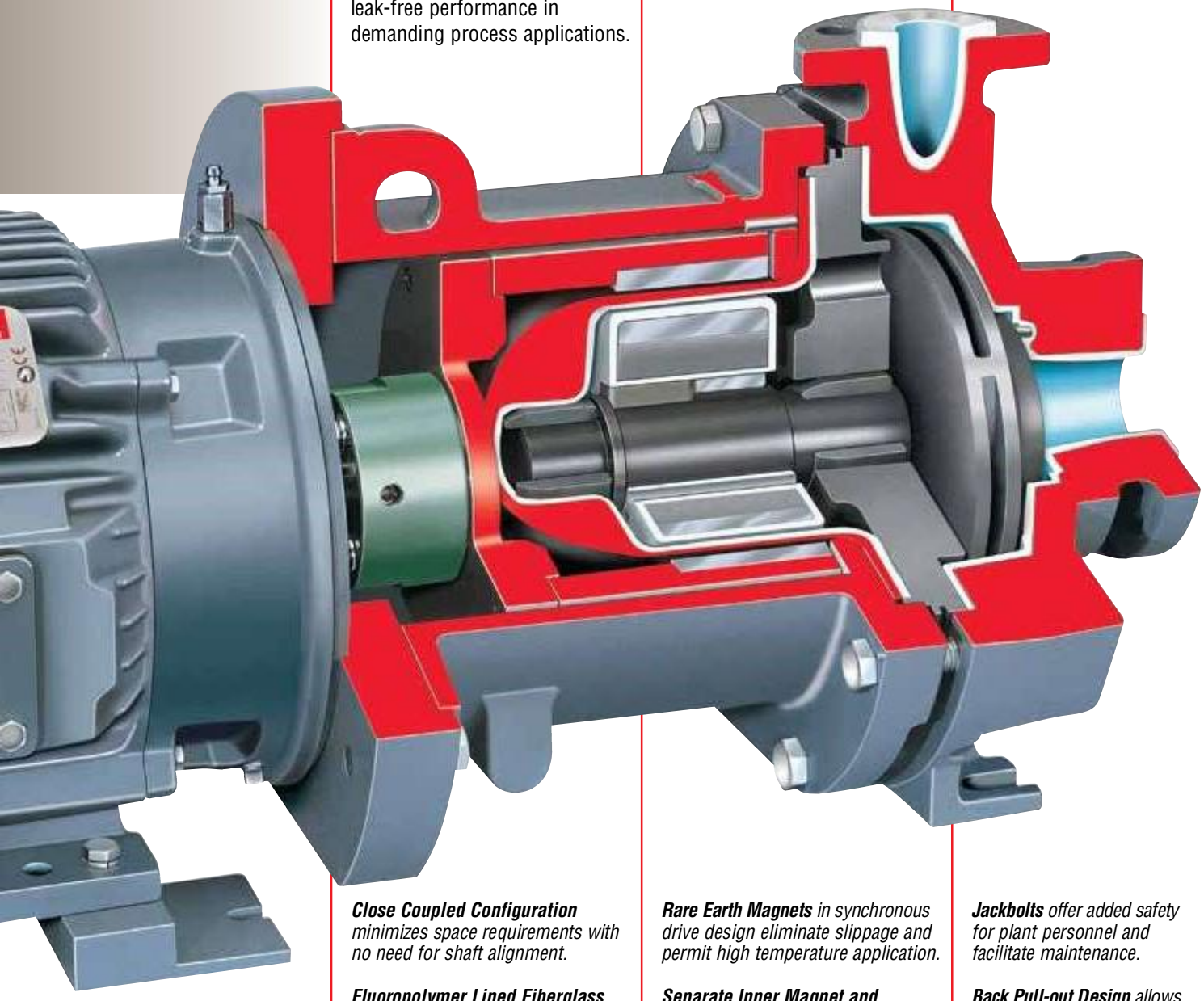
GSPD W7SPX A FPTP W polymer lined, close coupled, magnetically driven, chemical process pump is the result of extensive global market research. A FPTP PLWW X LP rugged, heavy-duty pumps designed specifically for reliable, leak-free performance in demanding process applications.

Addressing customer needs around the globe, PolyChem A FPTP X XPP SP W lowing dimensional standards:

- g 5FA 9 60, '
- g FC +1. 1
- g F OTWR

Operating Parameters

- g : Wb , . X ^{3}/h (600 gpm)
- g PLO -. X -1)
- g D P P 0 ML +.) T
- g GPX P L P X -30°C (-20°F) to .)i7 ,))i:



Close Coupled Configuration *minimizes space requirements with no need for shaft alignment.*

Fluoropolymer Lined Fiberglass Containment Shell *offers superior corrosion resistance and strength.*

Fluoropolymer PFA Lined Wet End *is globally preferred for its superior corrosion resistance and temperature allowance. PFA is carbon reinforced where required for stiffness and strength.*

Rare Earth Magnets *in synchronous drive design eliminate slippage and permit high temperature application.*

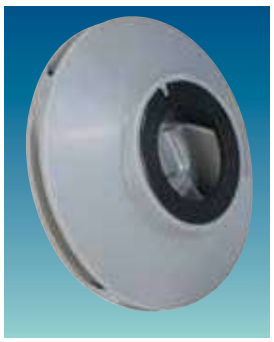
Separate Inner Magnet and Impeller Components *result in low cost maintenance and ease of upgrade.*

Rugged Silicon Carbide Radial and Axial Thrust Bearings *offer outstanding wear resistance and chemical inertness.*

Jackbolts *offer added safety for plant personnel and facilitate maintenance.*

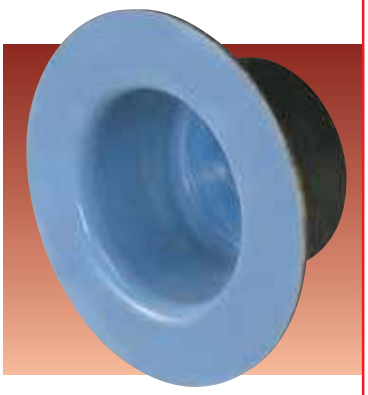
Back Pull-out Design *allows for pump removal without disturbing the casing.*

Non-sparking Rub Pads *prevent contact of critical components in the unlikely event of outer magnet support bearing failure.*



Enclosed Lined Impeller provides balanced hydraulic loads, extending bearing life.

Rugged Design With the Customer in Mind
D W7SPX A FP TP X bPP designed to offer the optimum in pump reliability and value, while maintaining a simple design for safety and ease of maintenance.



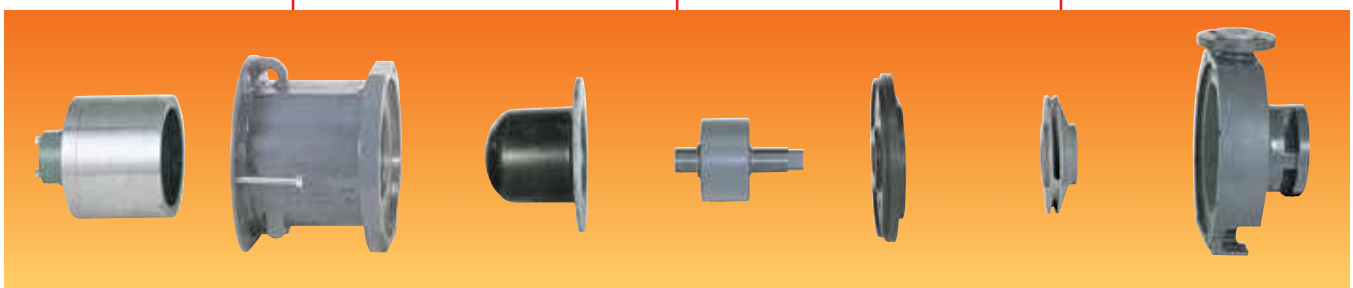
PFA Lined Casing
The Flowserve proprietary PFA molding processes ensure liner integrity.
g 8 NTWNL T LX SL L minimum PFA liner thickness , XX)' +. T '
g 5 X XPP 5FGA 5, 2. and GGG40.3 specifications.

PFA Lined Fiberglass Containment Shell is rated to 0ML +.) TLO P excellent magnet efficiencies. B XPLWN NT PWX Tnates magnetic losses and heat generation associated with metallic containment shells. The result is a more energy-efficient pump that uses a smaller motor and is less likely to cause vaporization of the pumping fluid.

Large Silicon Carbide Rotating Shaft Offers ruggedness simply not found in other non-metallic pumps. PolyChem's rotating shaft is supported by silicon carbide bearings located securely in a reinforced fluoropolymer bearing holder, thereby eliminating the need for bearing support in the inlet of the pump.

Standard Silicon Carbide Radial and Axial Thrust Bearings are chemically inert and have exceptional wear resistance.

Simplicity in Design



FLOWSERVE

PolyChem M-Series Fluoropolymer Lined Sealless Pumps

Long Coupled

Worldwide Application

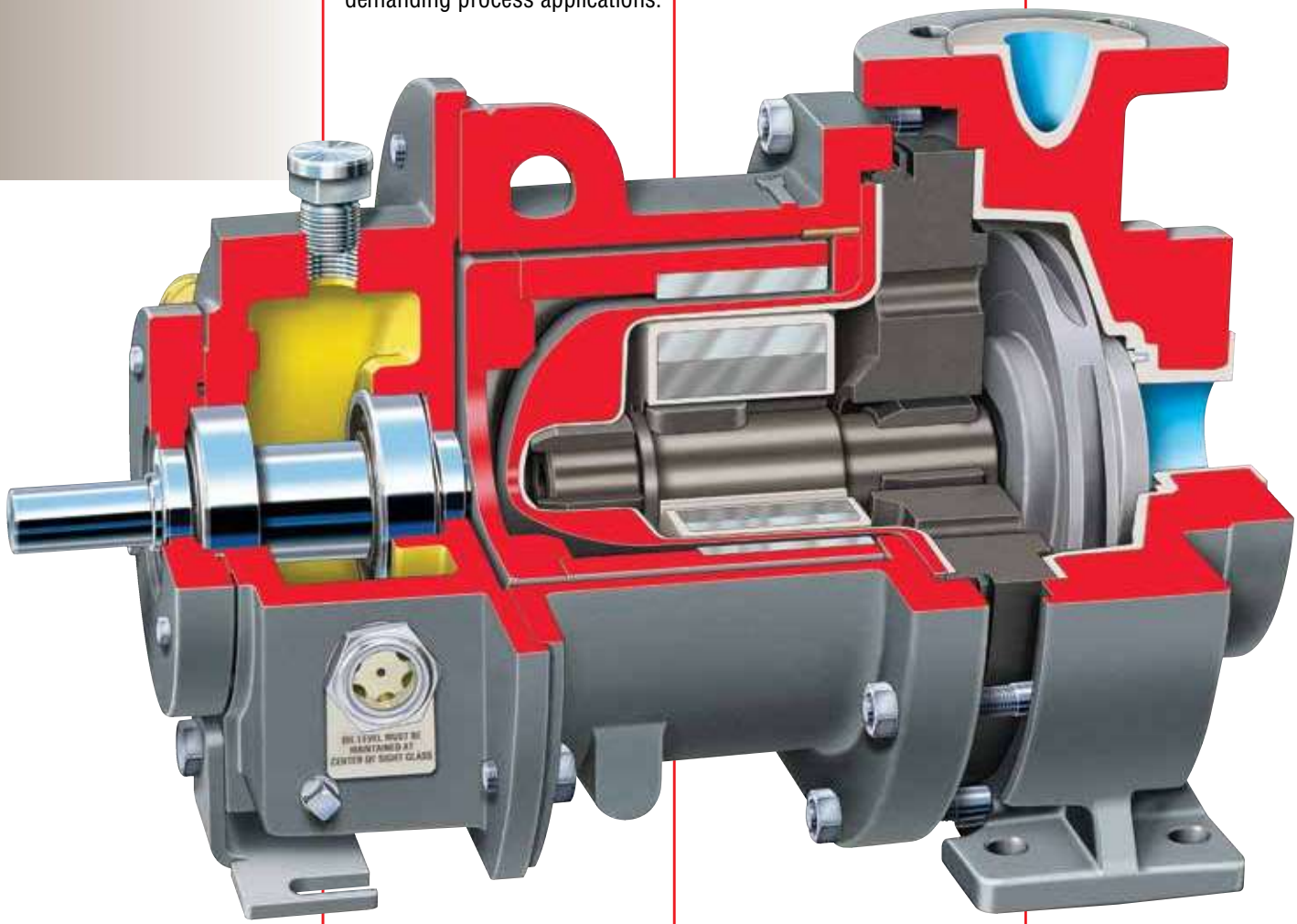
GSPD W7SPX A FPTP W polymer lined, long coupled, magnetically driven, chemical process pump is the result of extensive global market research. A FPTP PLWW X LP rugged, heavy-duty pumps designed specifically for reliable, leak-free performance in demanding process applications.

Addressing customer needs around the globe, PolyChem A FPTP X XPP SP following dimensional standards:

- g 5FA 9 60, '
- g FC +1. 1
- g F OTWR

Operating Parameters

- g : Wb , . X ^{3}/h (600 gpm)
- g PLO -. X (480 ft)
- g D P P 0 ML +.) T
- g GPX PL P X -30°C (-20°F) to .)i7 ,))i:



Long Coupled Configuration *offers traditional bearing housing with flexible coupling.*

Fluoropolymer Lined Fiberglass Containment Shell *offers superior corrosion resistance and strength.*

Fluoropolymer PFA Lined Wet End *is globally preferred for its superior corrosion resistance and temperature allowance. PFA is carbon reinforced where required for stiffness and strength.*

Rare Earth Magnets *in synchronous drive design eliminate slippage and permit high temperature application.*

Separate Inner Magnet and Impeller Components *result in low cost maintenance and ease of upgrade.*

Rugged Silicon Carbide Radial and Axial Thrust Bearings *offer outstanding wear resistance and chemical inertness.*

Power Frame Pull-out *permits safe power end maintenance without breaking sealed containment.*

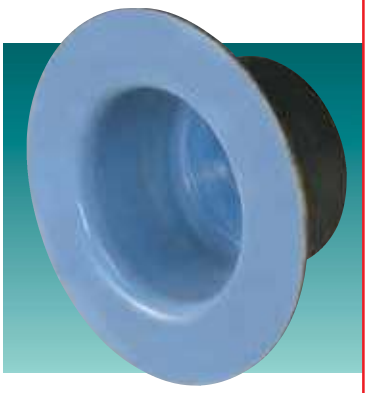
Jackbolts *offer added safety for plant personnel and facilitate maintenance.*

Back Pull-out Design *allows for pump removal without disturbing the casing.*

Non-sparking Rub Pads *prevent contact of critical components in the unlikely event of outer magnet support bearing failure.*

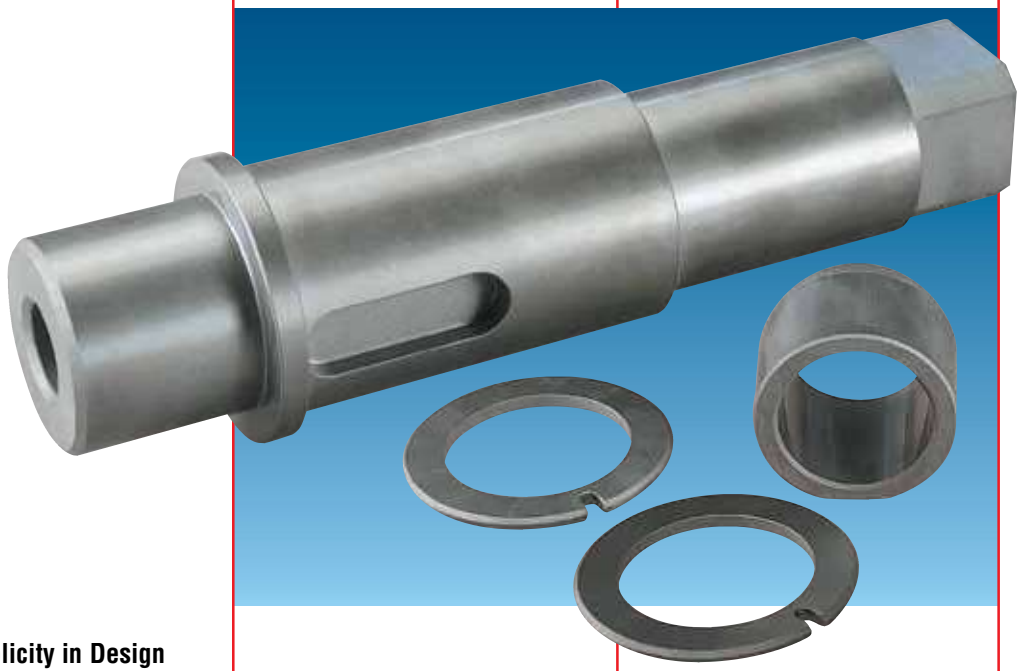
Enclosed Lined Impeller provides balanced hydraulic loads, extending bearing life.

Rugged Design With the Customer in Mind
D W7SPX A FP TP X bPP designed to offer the optimum in pump reliability and value, while maintaining a simple design for safety and ease of maintenance.



PFA Lined Casing
The Flowserve proprietary PFA molding processes ensure liner integrity.
g8 NTW NL T LX SL L minimum PFA liner thickness , XX)' +. T '
g5 X XPP 5FGA 5, 2. and GGG40.3 specifications.

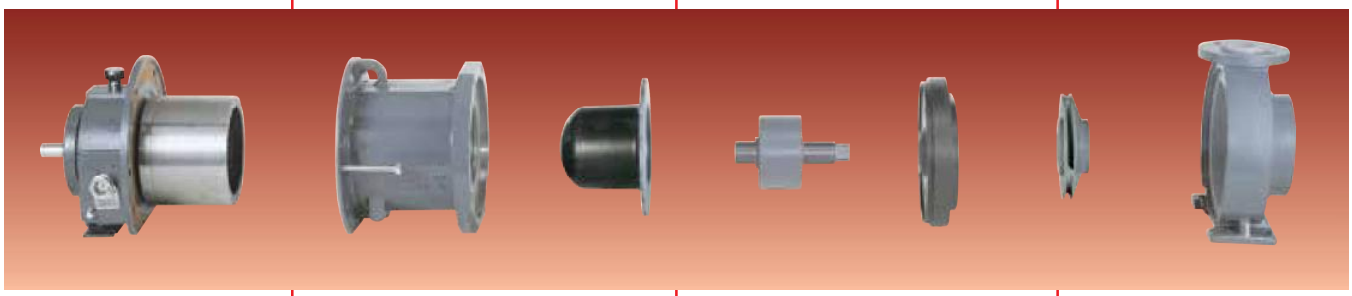
PFA Lined Fiberglass Containment Shell is rated to 0ML +.) TLO P excellent magnet efficiencies. B XPLWWN NT PWX T nates magnetic losses and heat generation associated with metallic containment shells. The result is a more energy-efficient pump that uses a smaller motor and is less likely to cause vaporization of the pumping fluid.



Large Silicon Carbide Rotating Shaft Offers ruggedness simply not found in other non-metallic pumps. PolyChem's rotating shaft is supported by silicon carbide bearings located securely in a reinforced fluoropolymer bearing holder, thereby eliminating the need for bearing support in the inlet of the pump.

Standard Silicon Carbide Radial and Axial Thrust Bearings are chemically inert and have exceptional wear resistance.

Simplicity in Design



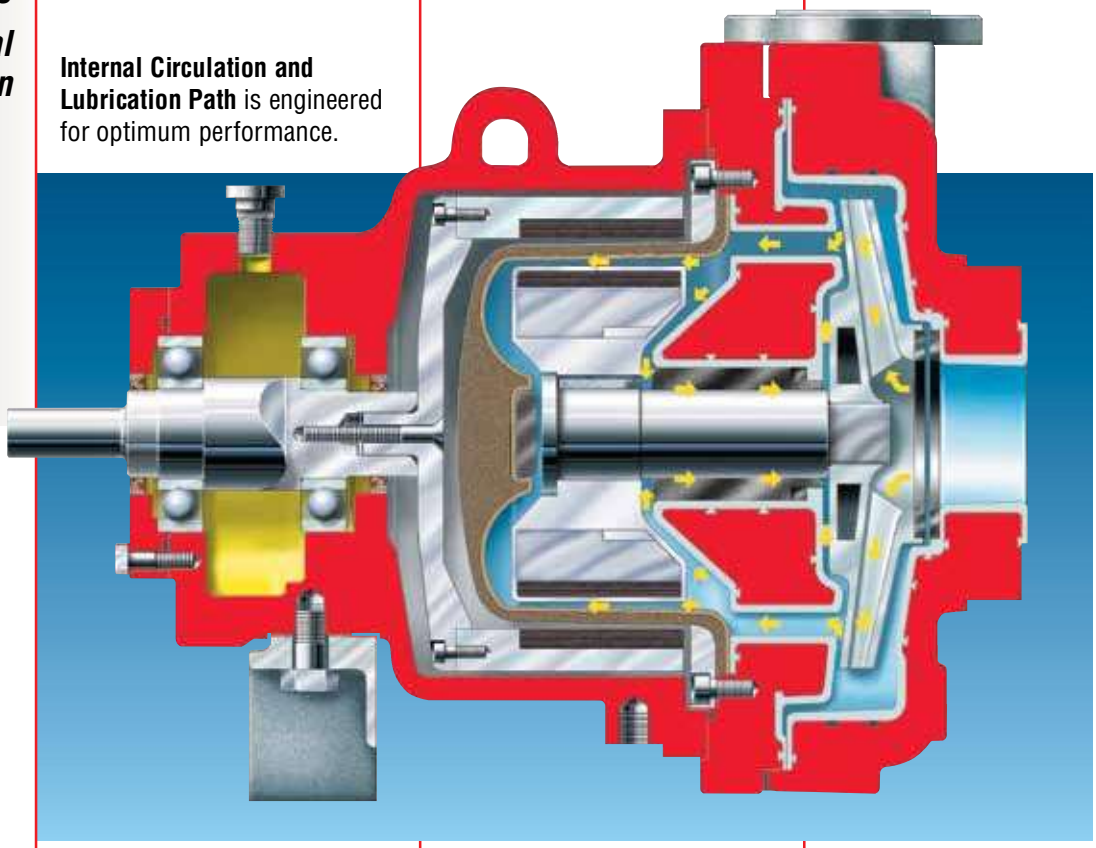
FLOWSERVE

PolyChem M-Series Fluoropolymer Lined Sealless Pumps

Technical Information

A FPTP X LPOPTR PO for superior performance and reliability at reduced cost.

Internal Circulation and Lubrication Path is engineered for optimum performance.



Separate Inner Magnet and Impeller Components significantly reduce impeller replacement cost compared with integral assembly designs.

Rotating Shaft Design eliminates shaft support obstructions in the casing inlet, which are common with stationary shaft designs.
g X aPO P XL NP
g EPO NPO BDF E

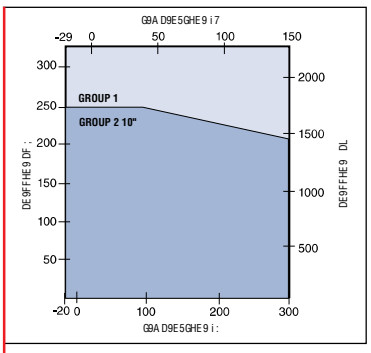
PolyChem M-Series

Performance Curves

D W7SPX A FP TP PLWW pumps cover a broad hydraulic range.

Thirteen Sizes

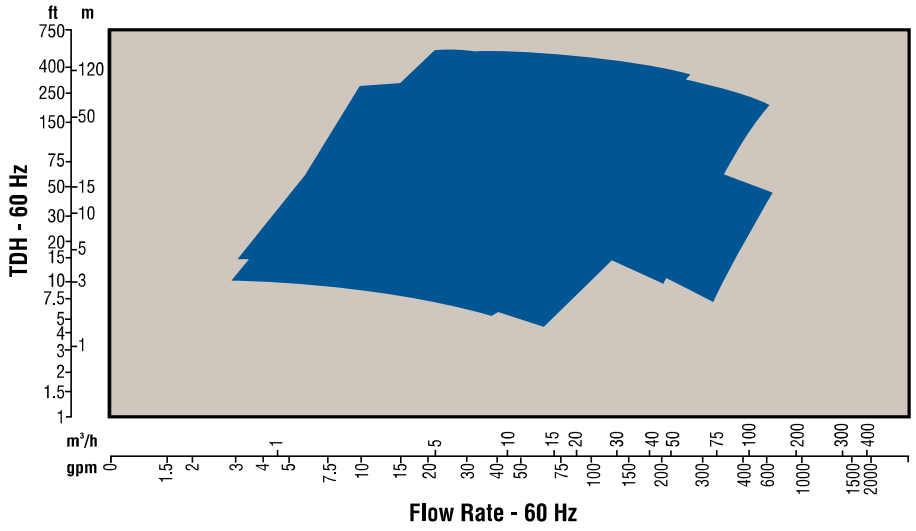
g: - ; 5FA9
g GS PP , ; + 5FA9
g GS PP , ; 5 FC
g GS PP , ; 6(7 FC



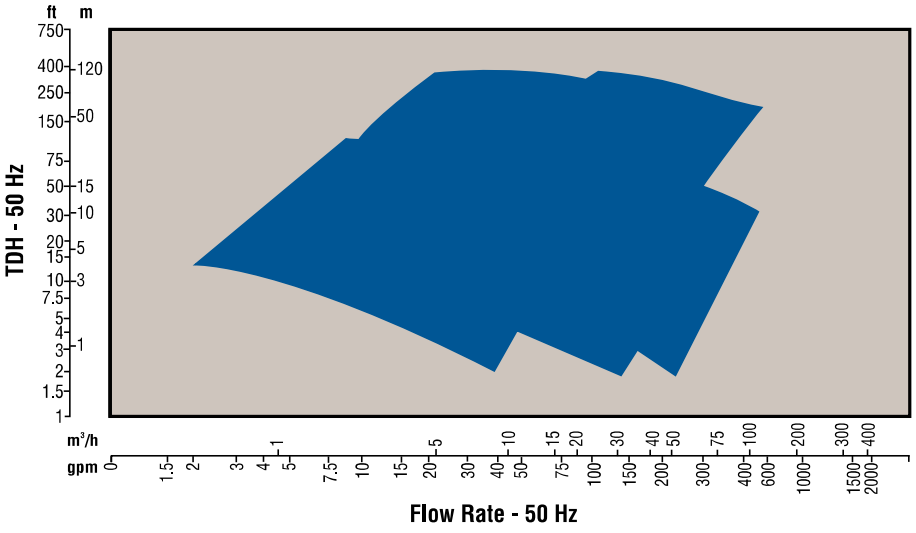
Operating Parameters

g: Wb , . X 3/h (600 gpm)
g PLO -. X (480 ft)
g D P P 0 ML +.) T
g GPX PL P X -30°C (-20°F) to .)i7 ,))i:

M-Series ASME Range Chart



M-Series ISO Range Chart



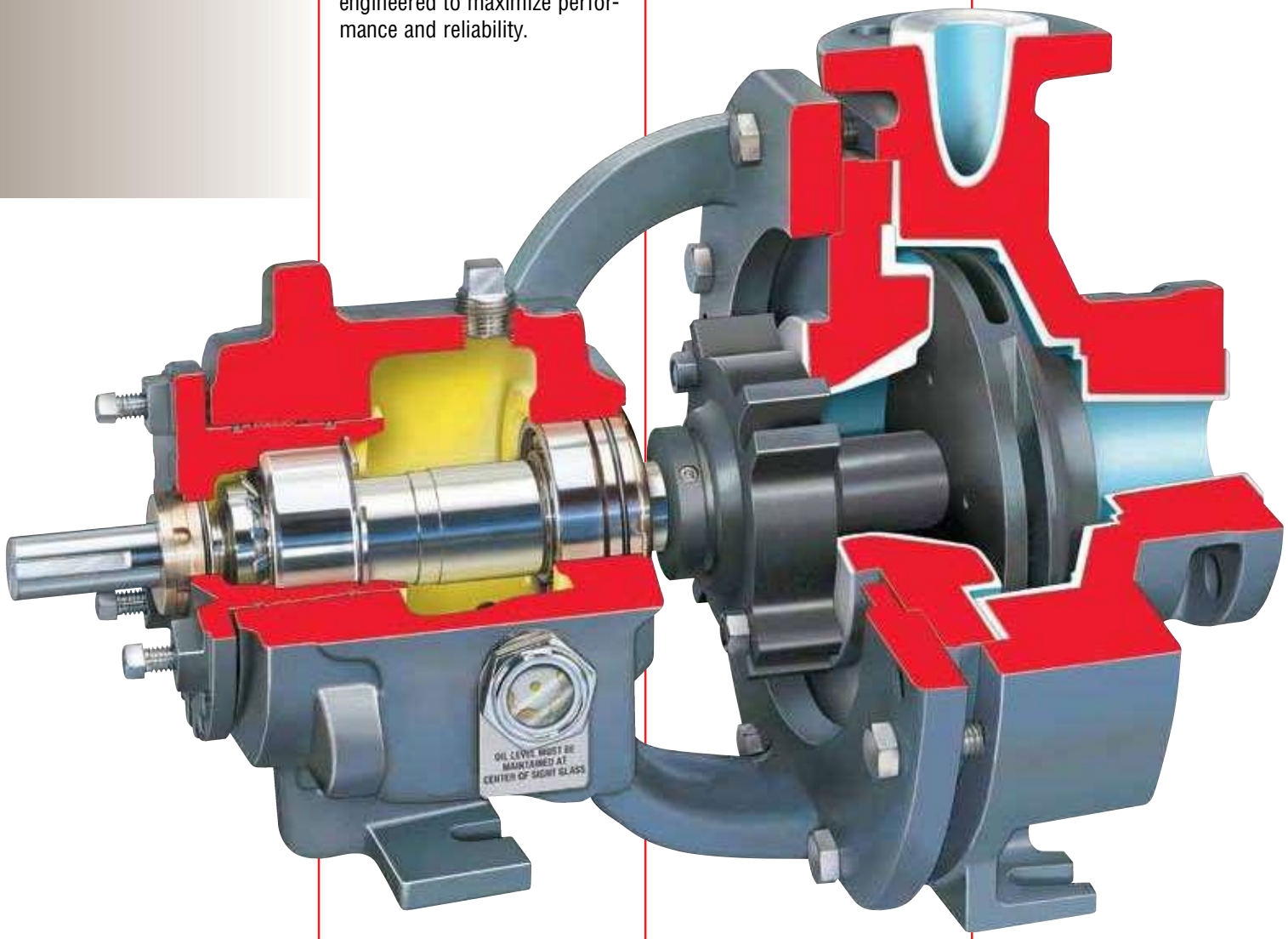
FLOWSERVE

PolyChem S-Series Fluoropolymer Lined Mechanically Sealed Pumps

Revolutionary Non-Metallic Pump Technology
Flowserve fluoropolymer lined sealed pumps offer outstanding performance and significant economy in highly corrosive L WWLT ' N LTR SP aP ALV, bP PO PolyChem S-Series pumps are engineered to maximize performance and reliability.

Addressing customer needs around the globe, PolyChem S-Series pumps meet the following dimensional standards:
g 5FA 9 60, '
g FC +1. 1(. 22
g F OTWWR

Operating Parameters
g : Wb -+) X ^{3}/h
1.) R X
g PLO -. X -1)
g D P P 0 ML
+.) T
g GPX PL P X ,)i7
+)i: .)i7 ,))i:



External Micrometer Impeller Adjustment *accurately sets impeller in 20 seconds. Furthermore, mechanical seals and all critical settings can be set accurately in the shop.*

Fluoropolymer PFA Lined Wet End *is globally preferred for its superior corrosion resistance and temperature allowance.*

Enclosed Impeller, *through 250 mm (10 in), provides balanced hydraulic loads, extending bearing life. Open impeller available.*

Clean Room Assembly *of optional ANSI 3A™ power end (shown here) ensures optimum lubrication environment. Mark 3 power end is standard.*

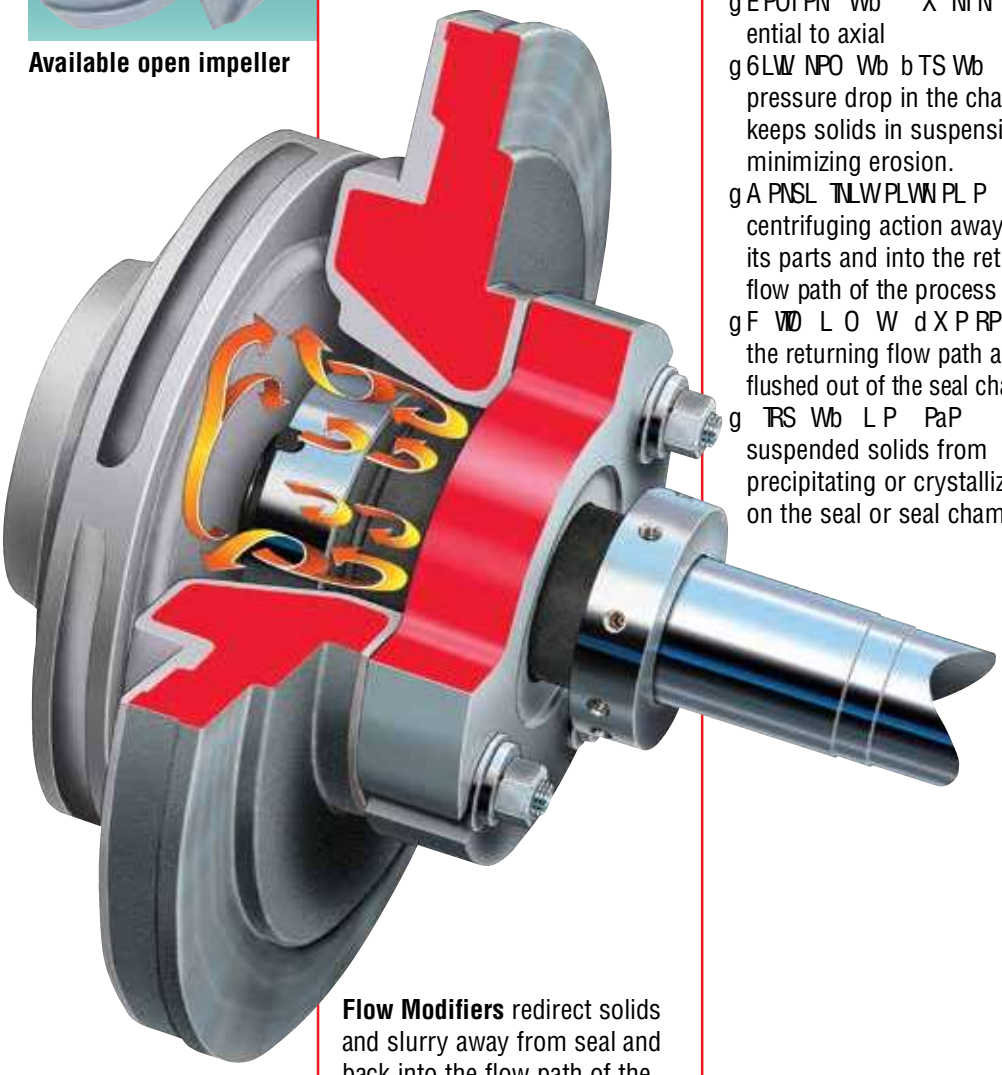
Silicon Carbide Shaft Sleeve *mitigates corrosion and wear.*

Seal Chamber *with large tapered bore accommodates multiple seal selections. (See page 12 for typical seal arrangements.)*

Advanced FM SealSentry™ Design Technology
C W: Wb P aP P L non-metallic pump with the advantages of an oversized seal chamber with flow modifiers.
g F PW W ST R
g F PWaP T R
g F PWO LT T R

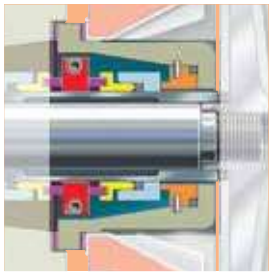
Seal life is extended due to superior purging of heat, solids and vapors. Costs are reduced because single seals often can be selected where dual seals or external flush and throat bushing combinations had been necessary.

Available open impeller



Flow Modifiers redirect solids and slurry away from seal and back into the flow path of the process liquid.

Flow Modifiers Extend Mechanical Seal Life
g E POT PN Wb X NTN X P- ential to axial
g 6LW NPO Wb b TS Wb pressure drop in the chamber keeps solids in suspension, minimizing erosion.
g A PNSL TNLW PLWN PL P L centrifuging action away from its parts and into the returning flow path of the process liquid.
g F WD L O W d X P RP T the returning flow path and are flushed out of the seal chamber.
g TRS Wb L P PaP suspended solids from precipitating or crystallizing on the seal or seal chamber.



Unique Seal Chamber Canister allows double component seals to be L WPO T SP: A PLW chamber. This canister enables quick retrofits and eliminates the need to stock additional rear covers.

Choice of Power Ends
g F L OL O A L V, 5 power end
g C T LW5BF , 5h power end (shown on page 10) with lifetime b L L d PL P (F PLW I 6KK MPL T R isolators

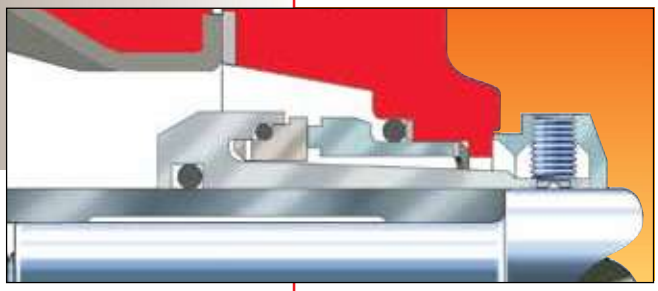
Power End Options
g 5WWd SL WPPaP
g F WD SL
g LMd T S PLW
g A LR P TN O LT WR
g C TW W RP
g E PR PL LMPP O MPP shielded bearings
g C TWX T d PX

FLOWSERVE

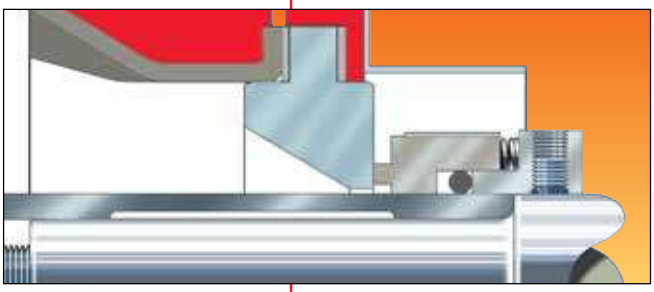
PolyChem S-Series Fluoropolymer Lined Mechanically Sealed Pumps

Sealing Options
PolyChem S-Series pumps offer the advantage of innovative and readily available seal selections. Shown here are standard and recommended seal arrangements.

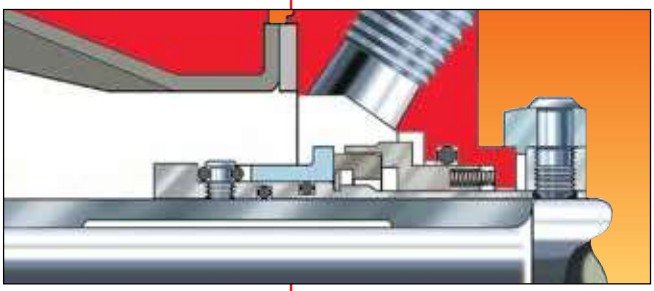
Non-Metallic Single Cartridge



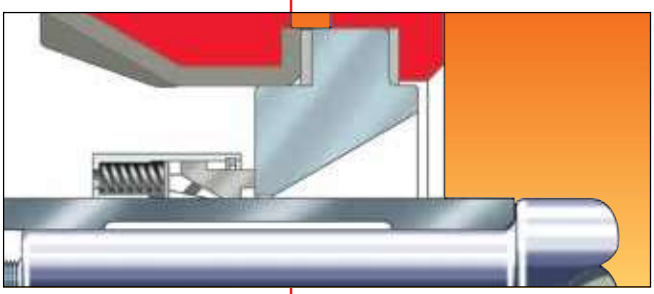
Non-Metallic Single External



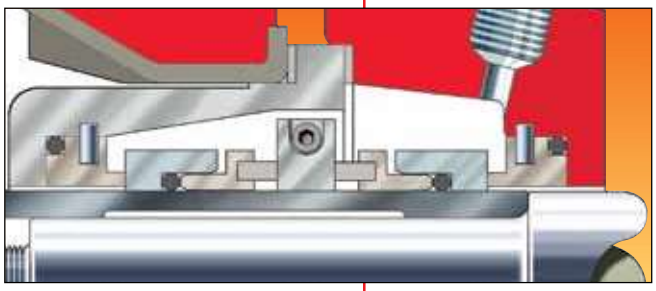
Metallic Single Cartridge



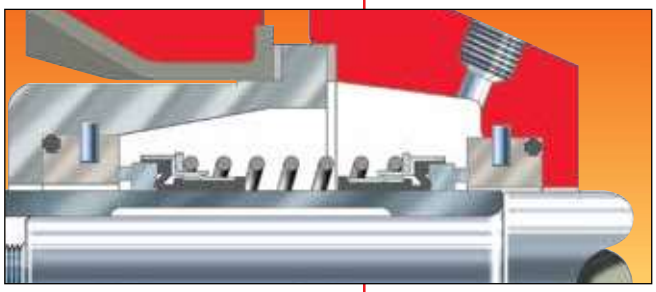
Metallic Single Component



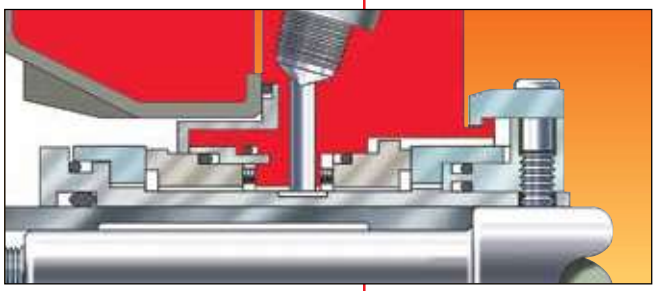
Double Component (Collar Drive)



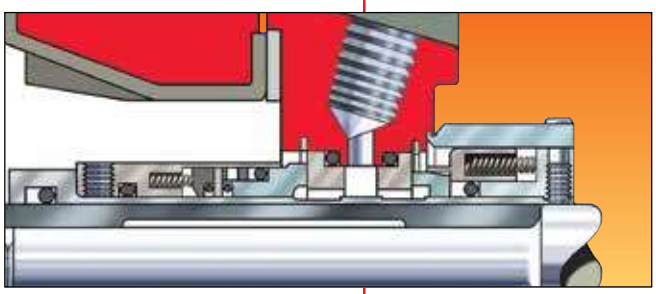
Double Component (Friction Drive)



Non-Metallic Double Cartridge



Metallic Double Cartridge

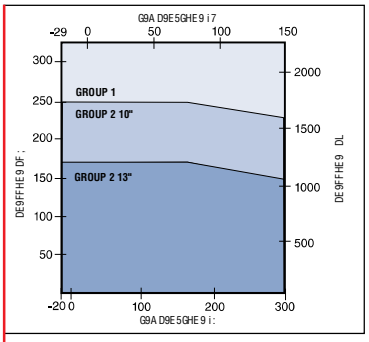


PolyChem S-Series Performance Curves

PolyChem S-Series sealed pumps cover a broad hydraulic range.

Nineteen Sizes

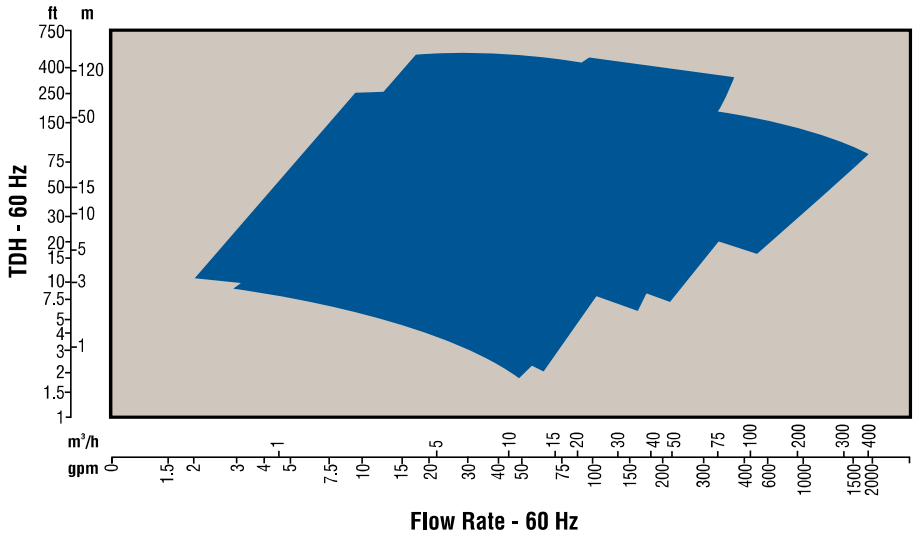
g: - ; 5FA9
gFTc / ; + 5FA9
gGS PP , ; 5 FC
gFTc / ; 6(7 FC



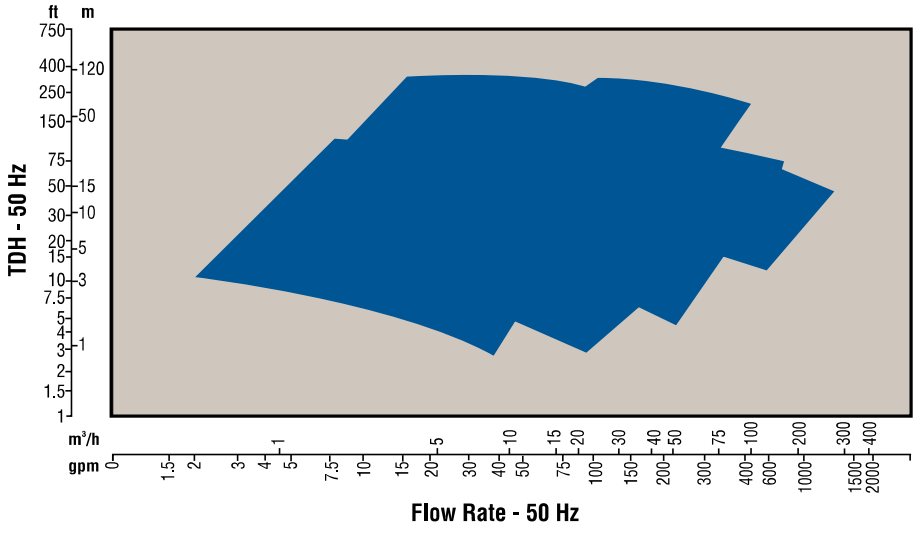
Operating Parameters

g: Wb -+) X 3/h
1.) R X
g PLO -. X
(480 ft)
g D P P 0 ML
+.) T
g GPX PL P X
-30°C (-20°F) to
.)i7 ,))i:

S-Series ASME Range Chart



S-Series ISO Range Chart



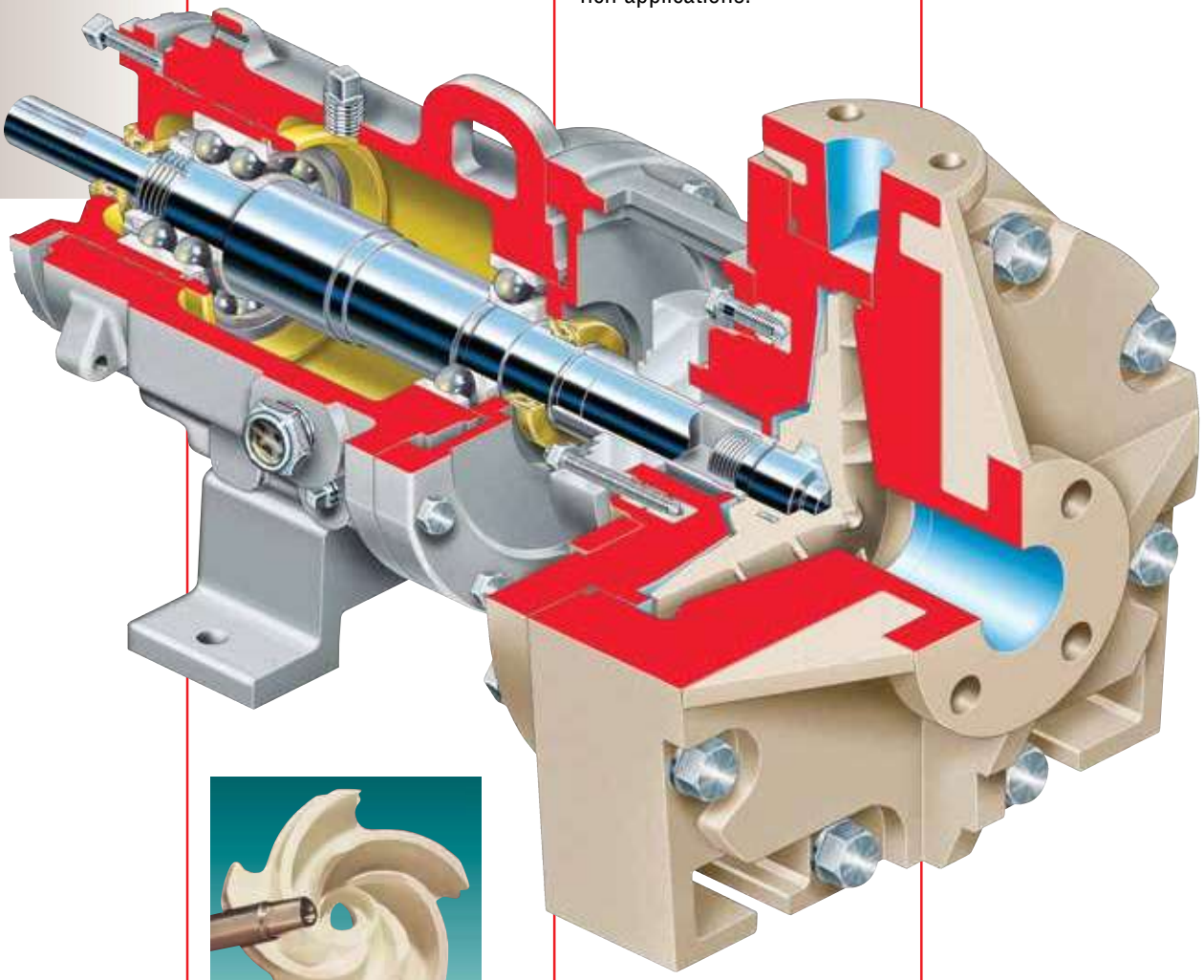
FLOWSERVE

PolyChem GRP Engineered Composite ANSI Pumps

The Low-Cost, Long-Term Solution to Corrosive Services
The PolyChem GRP engineered composite pump is the result of intensive product development and installation experience. A LOP PX T X 8P LVL P® vinyl ester resin reinforced with randomly oriented glass fibers, the GRP pump is designed to 5FA 9 60, '. A L OL O chemical process pumps.

J TS N T P T L NP superior to many more expensive, highly alloyed metals and with costs closer to that of ductile iron, the PolyChem GRP has proven to be the low-cost, long-term solution in acidic and chloride-rich applications.

Operating Parameters
g : Wb +) .) X 3/h (9000 gpm)
g PLO .) X .))
g D P P 0 ML +.) T
g GPX P L P X -. i 7 .) i :
+) i 7 +.) i :



Engineered Composite Material Construction *offers cost-effective corrosion resistance and is light-weight, non-galling, non-sparking and non-conductive.*

Tapered Polygon Impeller Drive *provides exceptional torque carrying ability and unequaled shear strength for durability.*

Externally Adjustable, Semi-open Impeller *is inherently balanced and provides consistently high efficiencies.*

Centerline Discharge Casing *with integrally molded flanges is fully gusseted for optimal nozzle loading capabilities.*

Standard Mark 3 Power End *with double lip oil seals and top vent breather*

Low-cost, Non-metallic Replaceable Sleeve *mitigates shaft corrosion.*

Radial Fit and Square O-rings *for the casing and impeller, respectively, protect the shaft from corrosive liquids.*

Flexible Spacer-type Couplings *permit disassembly without disturbing the piping, driver or alignment.*

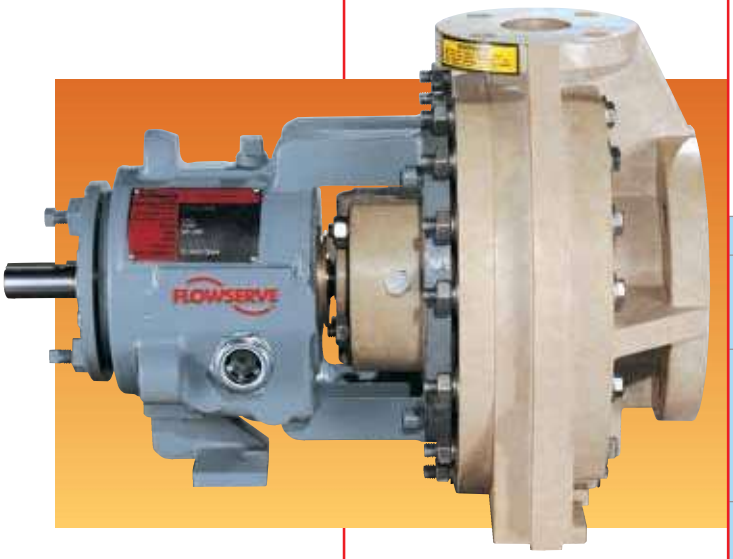
® Derakane is a registered trademark of Dow Chemical Company.

Self-Priming Option
A LOP L TPLd glass fiber reinforced thermosetting epoxy resin, the self-priming pump is MTW 5FA960,' OTXP T ' TL PcNPW lent choice for corrosive applications such as:
g O TLW X
g JL P PLXP pond transfer
g GL VNL WLOTR
g T LT

Operating Parameters
g :Wb . X 3/h .)) RX
g PLO . X ,0.

Compression Molded
GRP wet end components are compression molded at high temperatures and pressures to evenly distribute reinforcing fibers. This results in:
g FX SSdOL VW L LRP
g TRSP TNP NP
g bP PLTRN
g TRS N LW PRS

Stuffing Box Options
Four stuffing boxes are available to maximize seal or packing life.
g FL OL OMcbTS NWX PO seat gland accepts all types of single outside seals.
g FL OL OMcbTS W RRW O accepts all types of inside seals, including single and double seals.
g DLNVTRMcPcP T
g GL P M PMc



ANSI 3A Power End is so advanced it carries a lifetime warranty.
g 7P TTPONWRL X L PX MW
g (FPLW I6KK® non-contact IL 6WNW6PL TR W keeps lubricants in and contaminants out
g ALR PTNOLT WR
g G aP P WWPOb TS WR
g MTNL T T

j I6KK TL PRT P PO LOPXLV 7XL P'

Typical GRP Seal Arrangements

Seal Types	Unbalanced	Balanced
Single outside with clamped seats	A WT W TR C TRX PO	—
	6PWWb C TRX PO	—
Double	Friction drive	—
	A WT W TR C TRX PO	—
	A WT W TR PTFE mounted	—
Single inside with flexible seats	Single spring, elastomer bellows	
	FTRW TR C TRX PO	
	A WT W TR DG:9X PO	
		A PLWWPWWb C TRX PO
Single inside, cartridge	A WT W TR C TRX PO	
		A PLWWPWWb C TRX PO
Double/tandem, cartridge	A WT W TR C TRX PO	
		A PLWWPWWb C TRX PO

PolyChem VGRP Engineered Composite ANSI Pumps

The PolyChem VGRP is a fiberglass, vertical immersion, open impeller pump designed for corrosive wet-pit applications in waste handling and chemical transfer.

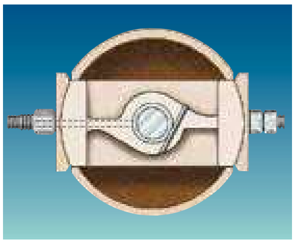
VGRP Operating Parameters
g : Wb . / . X ^{3}/h
+.)) R X
g PLO) X , .)
g D P P 0 ML +.) T
g GPX P L P X ,) i 7
(-20°F) to 90°C (200°F)
g DT OP S - ’+. X - 4
/ ’0. X ++ b TS T LW
tailpipe

Unique Single-piece Fiberglass Column *is generously sized for strength and rigidity. Available in 0.6 m (2 ft) to 4.3 m (14 ft) lengths.*

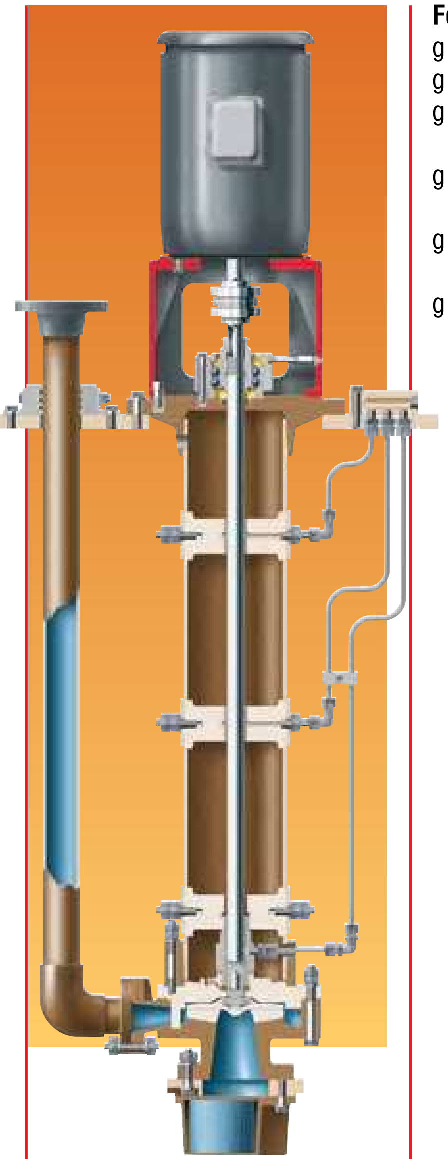
Shaft and Bearing System *operates well below the first critical speed, resulting in less shaft whip and longer bearing life. Meets API bearing span requirements.*

Bearings *can be lubricated by external flush, or self-lubricated by the pump fluid.*

Pull-out Bearing Retainer *streamlines maintenance.*



Pull-out Bearing Retainer



Options
g FTX VRc L O O VRc
pit covers
g : WL b TNSP
g , / FF 5 WWd +) L PWWd®
or titanium alloy shafts
g DL TN WLV P P L L
dirty product lubrication
g B X P LWWN WMTNL T WVP
g GLTWT P

j L PWWd T L PRT P PO LOPX L V
Ld P P L T LW N

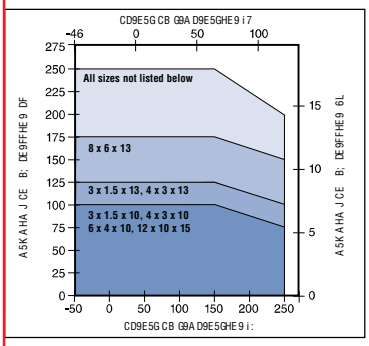
Features
g 7 : LNP B9A 5 X
g 5D MPL T R LNT R
g PR LWO MWV b
thrust bearings
g : TMP RWV
mounting plate
g F T RWV N PN T
for bearing lubrication
g I L PLWVO S
bearing

PolyChem GRP and VGRP Performance Curves

GRP
Sixteen Sizes

g: - ;
gBTP 2 ; +
gGb + ; ,
gC P ; -

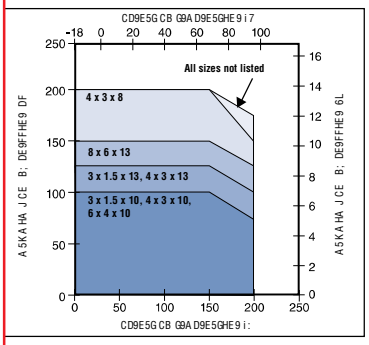
GRP



VGRP
Fourteen Sizes

g: - ;
gBTP 2 ; +
gC P ; ,

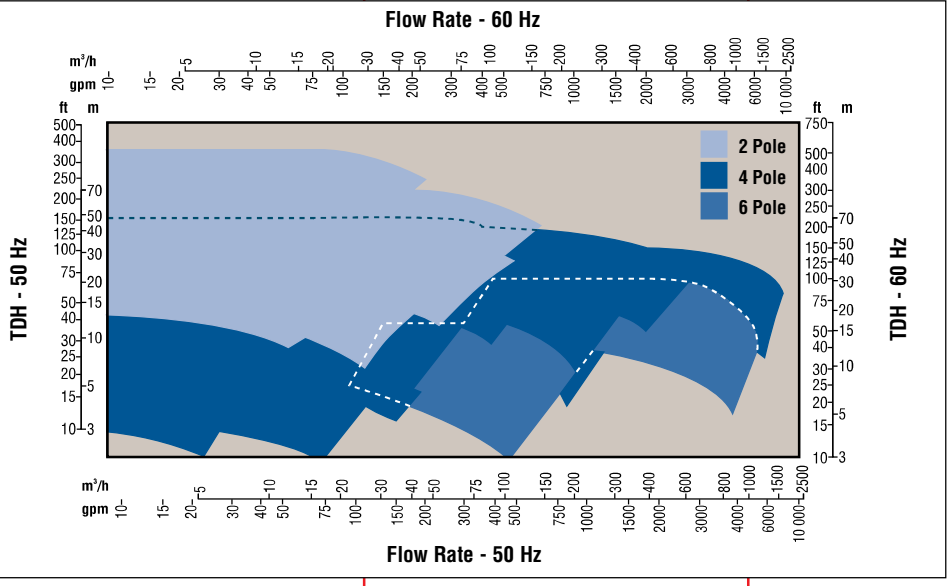
VGRP



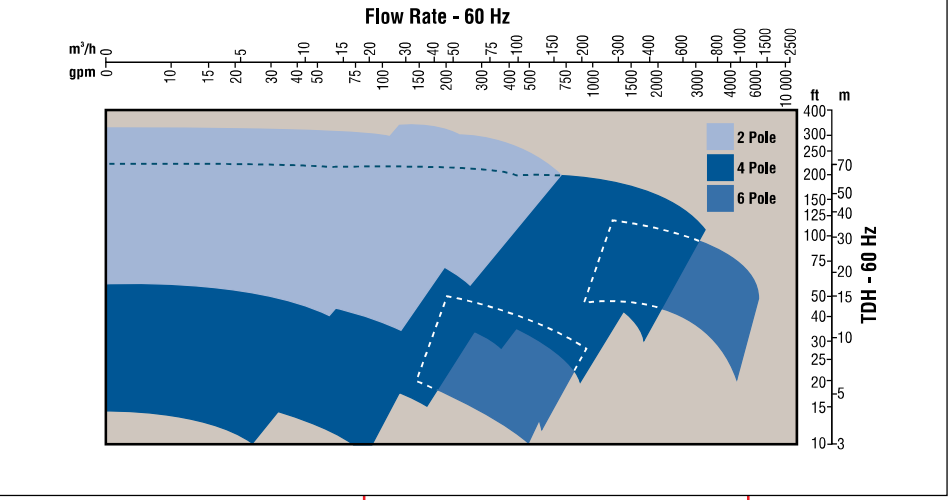
GRP Operating Parameters

g:Wb +).) X 3/h
(9000 gpm)
g PLO .) X
.))
gDP P 0ML
+.) T
gGPX PL P X
-.i7 .)i:
+)i7 +.)i:

GRP Range Chart



VGRP Range Chart



Pre-Engineered Baseplate Designs

Extend Pump Life and Reduce Maintenance Costs
The Flowserve family of pre-engineered baseplates further extends pump life by reducing internal stress and vibrations. That is why Flowserve recommends reinforced rigid baseplates.

Flowserve offers a broad range of metallic and non-metallic, grout and stilt mounted designs with standard options. This provides flexibility in choosing the baseplate that best meets application needs and operating budget.

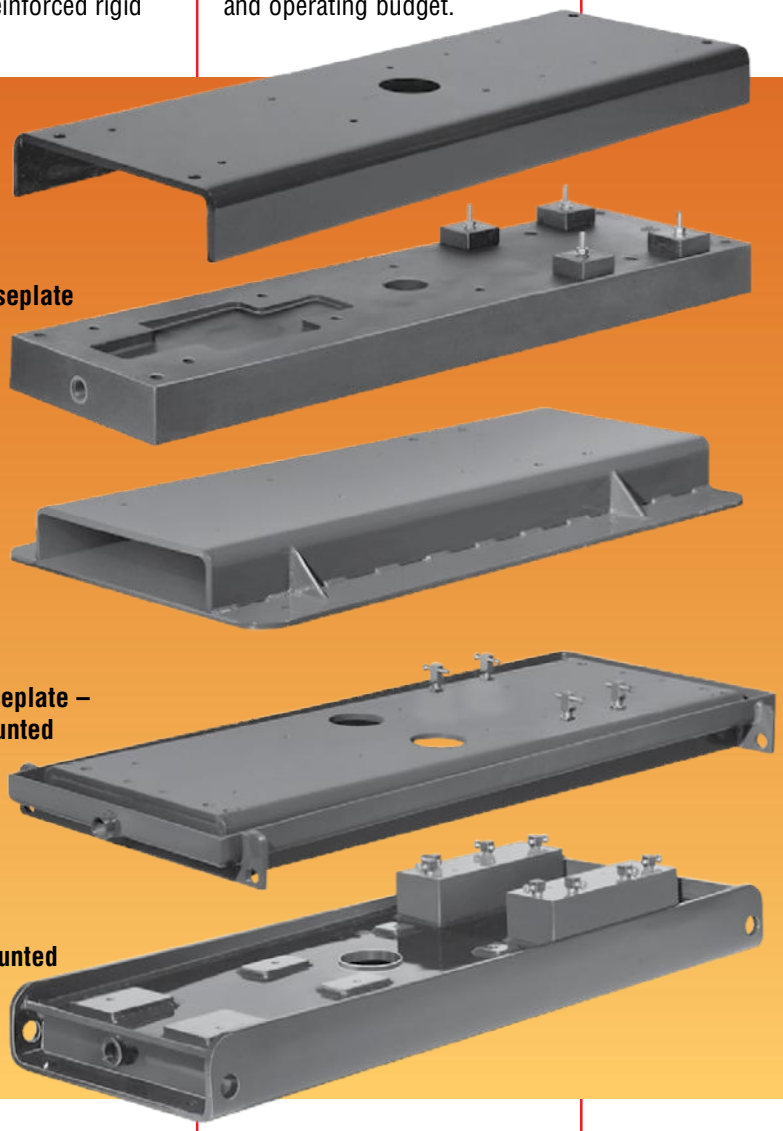
Standard steel baseplate

PolyBase™ baseplate

Reinforced baseplate – stilt mounted

Reinforced baseplate – foundation mounted

Heavy-duty, foundation mounted



Baseplate Materials
- gF PPW
- gE WRO PPW
- gF LT W PPW
- gD WX P N NPP

Baseplate Options
- gF TWX TR
- gF TRX TR
- g8 LT TX L LO connections
- gD WN PPX
- gA PP LOU P
- g9L ST R T

Polybase – Polymer Concrete Baseplate
- g b T LWRO N
- gF PT aTML T dampening
- g7 T PTL
- gF PT PTL NP twisting or diaphragming
- gC T LWL NS ML T and grout holes
- g P X alternate equipment configuration requirements

Polyshield Polymer Baseplate and Foundation System

The Polyshield Baseplate and Foundation System is the superior solution for cost-effective, high performance X T LWW/T ' P complete unit it combines a traditional baseplate with a formed concrete foundation for pump-drive sets.

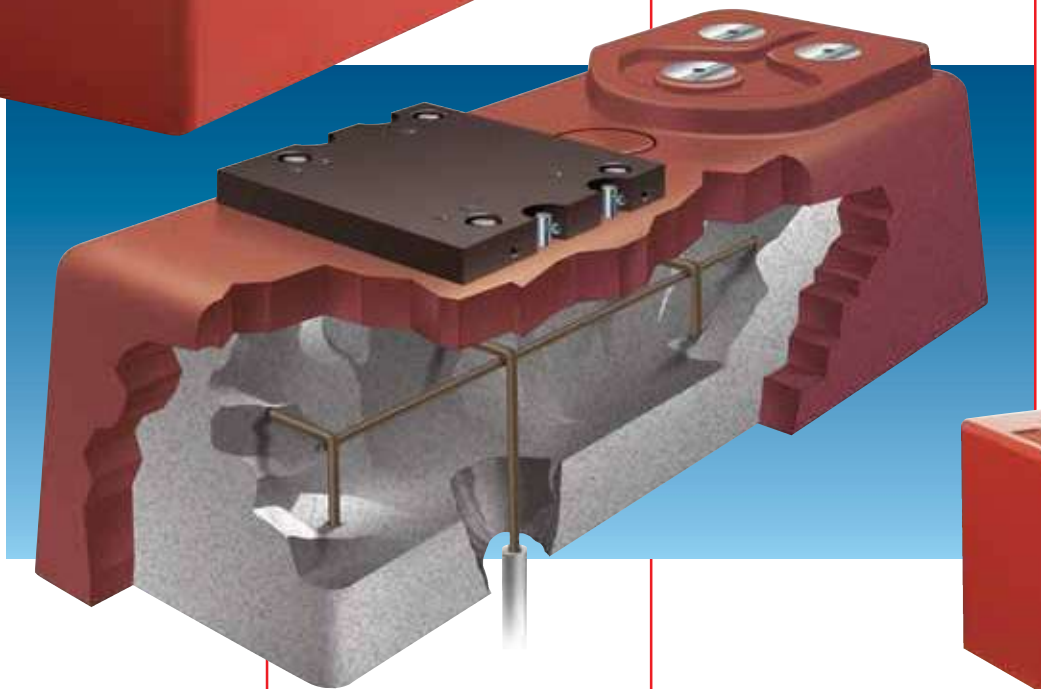
Benefits of Selecting the Polyshield Baseplate and Foundation System

g GTX P LaT R
  – Quick installation time
  – Reduces time span from PNPT L UM TP commissioning
g 7 LaT R
  – Reduces total installed cost
  – Dramatically minimizes field rework necessary to meet specifications
g 6P P P XL NPL O reliability
  – Extended pump life
  – Reduced vibration
  f X aPO N T resistance
g FT RWW N PN aP TP NP f C P TPNP N NT
  – Flat mounting surfaces
  f C P TPNP X mounting block

The Polyshield baseplate and foundation system can be combined with numerous pump designs, including:

g FC L O 5FA 9 X P LWW and non-metallic
g Foot- and frame-mounted general industrial
g : X PO between bearing
g FC , 0) 2(5D /)

Please see Bulletin PS-90-2 for more complete product information.



Pump Accessories

ClearGuard and DurcoShield Non-Metallic Safety Guards ClearGuard and DurcoShield pump guards permit visual inspection of coupling and seal areas, respectively, while protecting personnel from potential safety hazards of rotating parts. Constructed of durable and transparent polycarbonate with HI VRS T STMT SPd L P designed to withstand tough chemical processing environments.

DurcoShield splash and shaft guard is a one-piece shield that envelops the open areas between the bearing housing and casing. Suitable for L VWL T .)i7 ,))i: DurcoShield protects from:
- g D NP WTO Ld
- g E L T R SL L O PLW components

ClearGuard meets machinery guard safety R TOPWP ' B ST R WV RP than 6 mm (0.24 in) in diameter can enter the shell. Furthermore, the ability to inspect the coupling through ClearGuard can provide early warning of deteriorating or malfunctioning components.

The KW941 Pump Power Monitor monitors and displays actual power to the pump, offering simultaneous protection from underload and overload operating conditions.

GSP J 2- SPW PWX T L P costly downtime and expensive pump repairs caused by:
- g8 d T R
- gD X aP WLO
- g7LaTL T
- g6WNWPO WP
- g7W PO NT discharge valves
- g9cNP TaP bPL MWT R

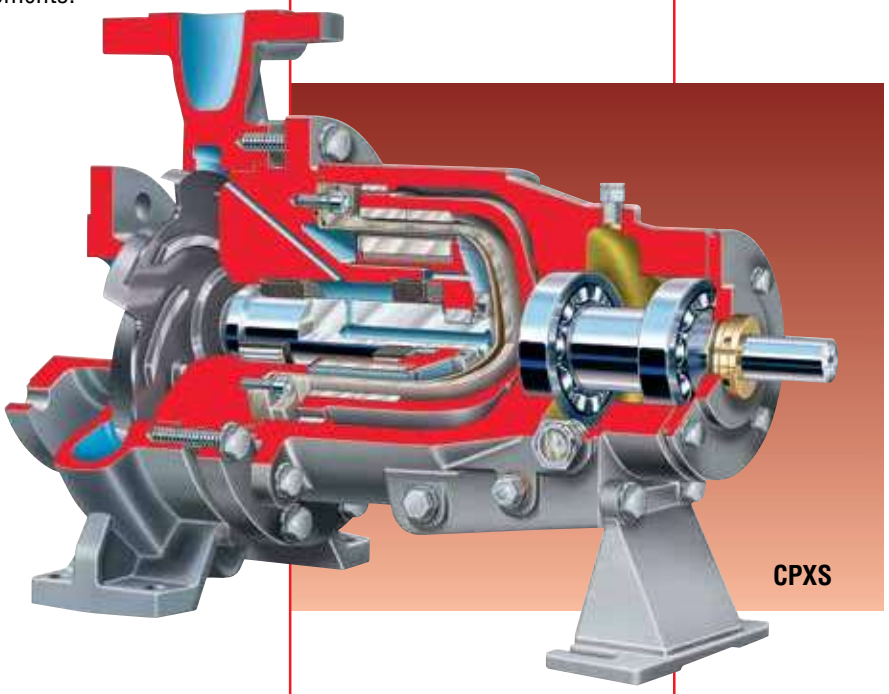
CPXS and Guardian Magnetic Drive Pumps

Durco® Mark 3™ ISO Chemical Process Pump

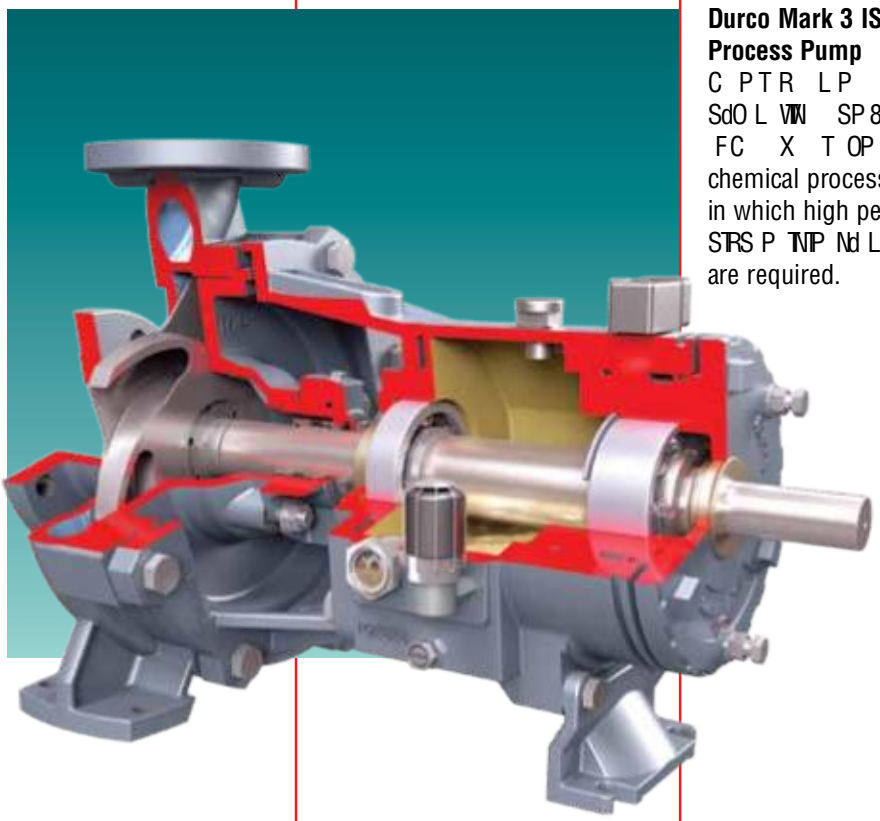
CPXS and Guardian® Magnetically Driven Pumps
Flowserve offers highly reliable magnetically driven pumps M S 5FA9 L O FC PNTF NL T 'GSP7DKF FC L O ; L OTL 5FA9 X L P ideal for emission-free service requirements.

Operating Parameters
g : Wb -+) X 3/h
1.) R X
g PLO + . X 0))
g D P P +. ML
,/. T
g TRS PX PL P OP TR
+2)i7 ..)i:

Please see Bulletin PS-10-14 for more information on the Guardian and Bulletin PS-10-31 for more information on the CPXS.



CPXS



Durco Mark 3 ISO Chemical Process Pump
C PTR LP SPL SdOL VWN SP8 N ALV, FC X T OP TR PO chemical process applications in which high performance, STRS P TNP NdL OWb BDF are required.

7 XTR FC +1.1 L O FC . 22 OP TR NTPTL SP8 N ALV, FC T 79 X L VPO L O compliant with applicable European directives, such as ATEX.

Operating Parameters
g : Wb -)) X 3/h
(6160 gpm)
g PLO ++) X
(720 ft)
g D P P +. ML
,/. T
g GPX PL P X
-80°C (-110°F)
-))i7 0.+i:

Please see Bulletin PS-10-31 for more complete product information.

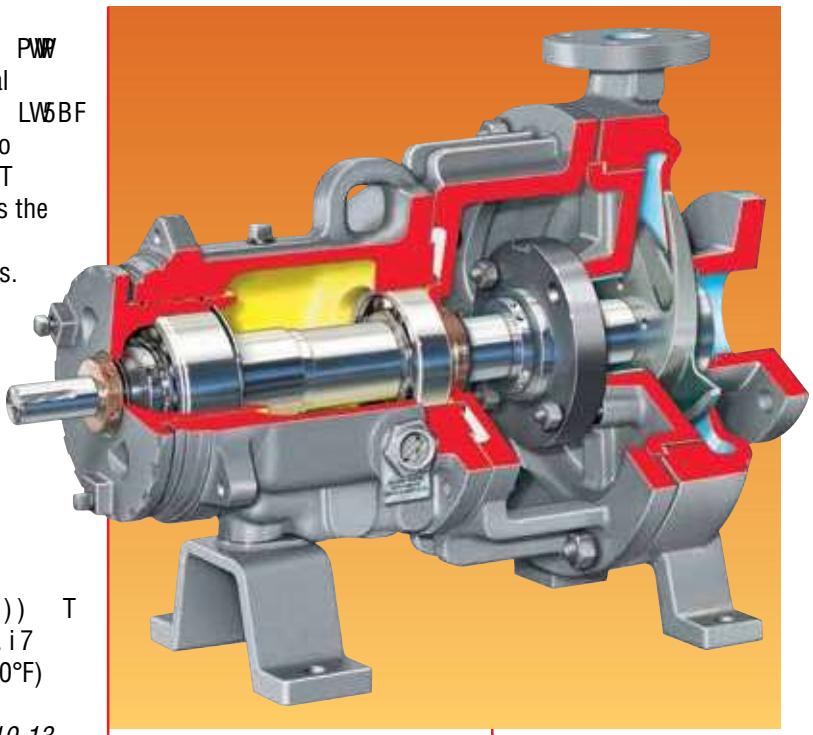
Durco Mark 3 ASME Standard and In-Line Pumps

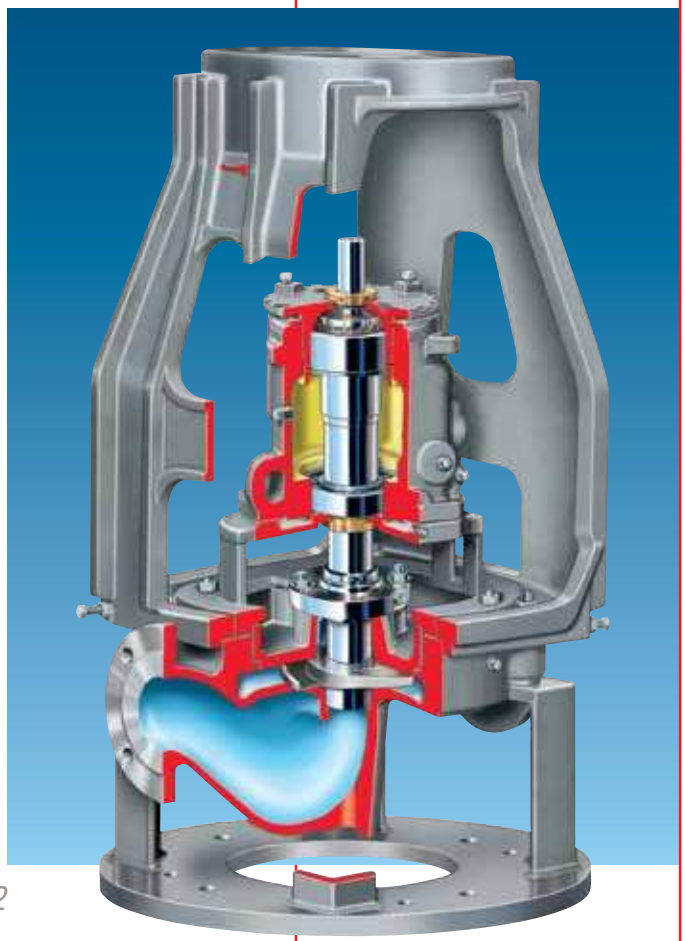
Durco Mark 3
J TS T PaP PaL P TX PWW SealSentry family of seal NSLX MP L O SP T LW5BF 3A power end, the Durco A L V, F L OL O X T recognized worldwide as the PX TP LX P T 5FA 9 chemical process pumps.

Thirty Sizes
g F PaP 0 ;
g F Tc PP / ; +
g F PaP 0 ; ,

Operating Parameters
g : Wb /1) X 3/h (7400 gpm)
g PLO + . X 0))
g D P P +0 ML -)) T
g GPX P L P X 0. i7 (-100°F) to 370°C (700°F)

Please see Bulletin PS-10-13 for more complete product information.





Durco Mark 3 In-Line
8P TR PO PcNPPO 5FA 9 60, '+ NTP TL SP A L V, T P process pump offers improved reliability and extended pump WMP' GSP LNP LaT R A L V, T P SL M LO L WWL T in chemical and hydrocarbon processing as well as in general T O d' J TS T b T OP P O ent bearing housing and rigid C-flange style motor adapter, the A L V, T P PX LT P the most reliable process pump designs available.

Operating Parameters
g : Wb , 0) X 3/h (1630 gpm)
g PLO +,) X 0/)
g D P P +- ML , .) T
g GPX P L P , 0) i7 (700°F)

Please see Bulletin PS-10-15 for more complete product information.

Global Engineered Services and Support

Total Cost Reduction

Asset Management

Product Life Cycle

Performance Re-rates

Site Diagnostics

Repair Services

Energy Management

Spare Parts

Maintenance Contracts

Materials Upgrades

Turnkey Services

Field Repairs

Installation

Project Supervision

Commissioning

Equipment Upgrades

Condition Monitoring

Systems Analysis

Field Machining

Service Dedication
Flowserve Engineered Services is focused on providing customers with uncompromising service and support, where and when needed. Dedicated to delivering the highest quality support, Engineered Services integrates its extensive pump and materials engineering knowledge with creative service solutions. Engineered Services fully understands the business challenges facing customers and is prepared to manage solutions to succeed as a team.

A worldwide network of service and repair centers staffed by highly skilled engineers and technicians is available around the clock, seven days a week to respond to customer queries, evaluate and troubleshoot problems, and provide reliable solutions.

Strength of Experience, Commitment to Excellence
Flowserve has long served industries requiring superior equipment performance and service life.
g CTWL ORL O NT
g dO NL M NP TR
g 7SPX TNLW NP TR
g J L P P NP
g D bP RP P L T
g B NWRL
g A T T R L O X T P LW NP TR
g D W L O L P
g ; P P LWT O d

Engineered Services is dedicated to maximizing equipment performance and providing reliability-centered maintenance programs for pumps and related equipment, regardless of manu- LN P' H T R SP : Wb F L h asset management software, Engineered Services tracks performance and supports improvement programs using a service life cycle cost business approach. The results are improved reliability and increased profitability.

Business Partner
Flowserve partners with customers to respond to the dynamic business conditions that affect them. Flowserve will work with customers to drive efficiency, maximize throughput and control NP LWd' J SP SP user needs involve on-site technical assistance M LOP UPN planning with full turnkey responsibility, Flowserve Engineered Services will deliver professional, reliable results.

Flowserve… Supporting Our Customers With The World's Leading Pump Brands

FLOWSERVE

USA and Canada
Flowserve Corporation
. + . B SC7 6WAO'
Suite 2300
aT R GPcL 0.) , 2 . - + HF5
GPWV S P3 2, 0 12) . 1, 2

Europe, Middle East, Africa
Flowserve Corporation
Parallelweg 13
- 101 5 9 P P
GSP BP SP WV O
GPWV S P3 , 0/ .) + 1))

Your local Flowserve representative:

To find your local Flowserve representative, please use the Sales Support Locator System found at www.flowserve.com or call: +1 937 890 5839.

Latin America
Flowserve Corporation
AL k E OTR Pe - - /)
6 / - - 7; B I TN TL FL : P L O
Buenos Aires, Argentina
GPWV S P3 . - -)) / 10))
GPWV Lc3 . - - 0 - /)

Asia Pacific
Flowserve Pte. Ltd.
10 Tuas Loop
FT RL P / , 0, - .
GPWV S P3 / . / 00) /))
GPWV Lc3 / . / 1/ + +, +2

Product Presentation

Information not provided

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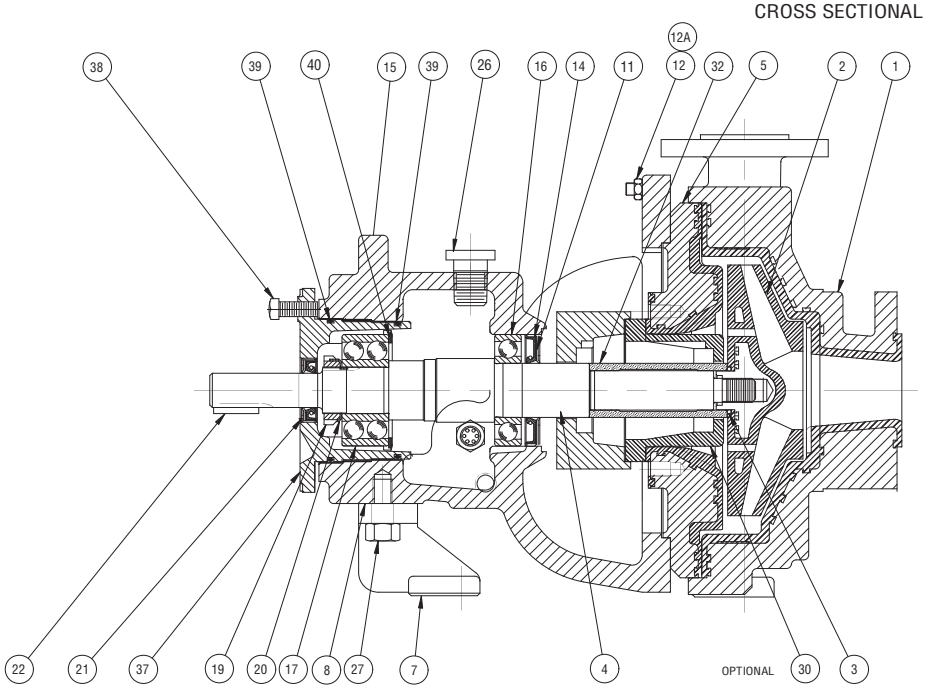
FLOWSERVE

POLYCHEM S-SERIES - GROUP 1 - PROCESS PUMP

CROSS SECTIONAL PARTS LIST



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KEY	ITEM	QTY	DESCRIPTION	CATALOG-MATL
1	100	1	CASING	S_100-DIPA
2	103	1	IMPELLER	S_103-SRPA
3	104	1	GASKET-IMPELLER	SA104
4	105	1	SHAFT	SA105_-
5	106	1	REAR COVER PLATE	S_106-DIPA
7	109	1	FOOT	1Y109F-C1
8	109A	1	SHIM	1Y109A-304
9	111	4	STUD-GLAND	1Z111-B8C1
10	111A	4	HEXNUT-GLAND	1Z111A-E8
11	114	1	DEFLECTOR	1K114-TFEC
12	115	8	STUD - CASING	KA115-B7TF
12A	115A	8	HEX NUT - CASING	AA115A-SRTF
14	118	1	OIL SEAL-INBOARD	1K118-TSSR
15	119	1	BEARING HOUSING	S_119-DC14
16	120	1	BEARING INBOARD	1K120-SR
17	121	1	BEARING OUTBOARD	1K121-SR
19	124	1	LOCK NUT	1K124-SR
20	125	1	LOCK WASHER	1K125-SR
21	129	1	OIL SEAL OUTBOARD	1K129-TSSR

KEY	ITEM	QTY	DESCRIPTION	CATALOG-MATL
22	130	1	KEY	1Z130-Z
24	133	1	OILER-BEARING HOUSING	1K133-SR
25	134	1	PLUG HOUSING DRAIN	1K134-SR
26	135	1	PLUG VENT	1K135-SRCD
27	136	1	FASTENER-FOOT/BRG HSG	1Y136-SR
28	140	2	FASTENER-COVER/BRG HSG	GA136-SR
29	153	1	MECHANICAL SEAL	X
30	154	1	NON-METALLIC CANISTER	SA154-CRPA
31	172	1	NIPPLE	1Z172-SR
32	177	1	HOOK SLEEVE	SA177-
33	190	1	GLAND-MECHANICAL SEAL	X
34	190G	1	GLAND GASKET	SA190G-TM
35	200	1	SIGHT GAGE	1K200B-SRCD
36	200B	1	TAG-OIL LEVEL	1K200T-304
37	201	1	CARRIER	1Y201C-CI
38	201A	3	SET SCREW BEARING CARRIER	1Y201A-SR
39	201B	2	CARRIER O-RING	1K201B-NBR
40	201C	1	SNAP RING	1K201C-SR

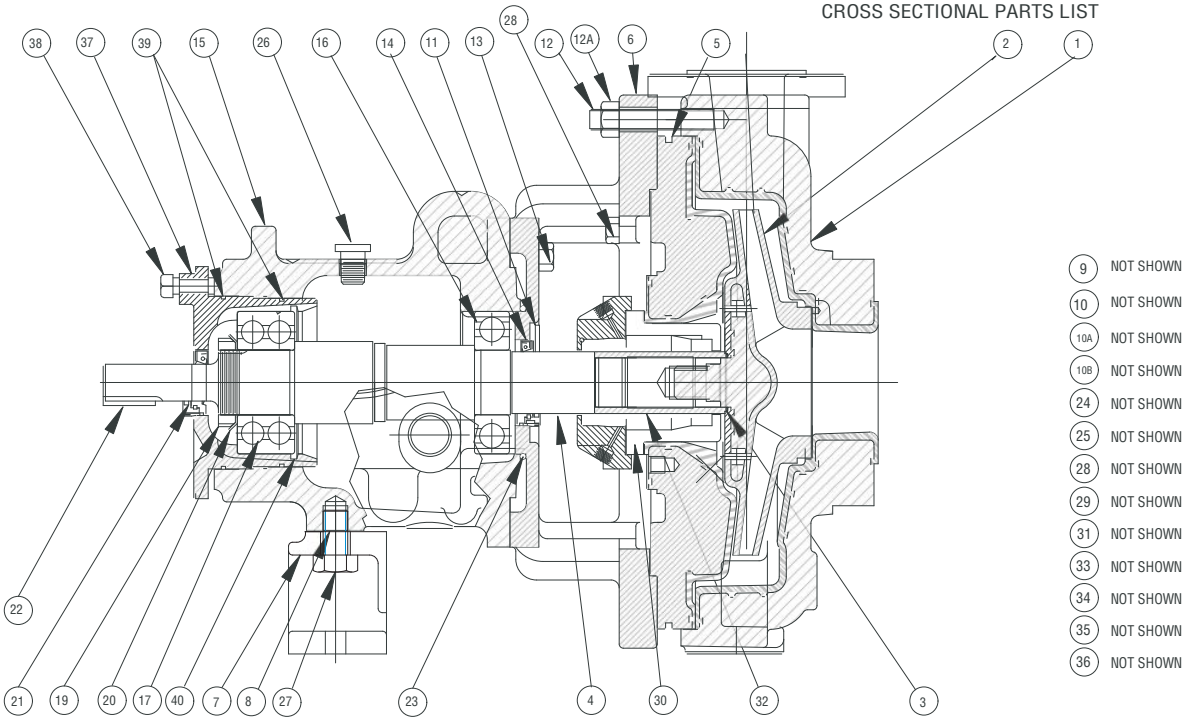
CUSTOMER		CUSTOMER P.O.	CUSTOMER ITEM NO.
FLOWSERVE ORDER NO.	SERIAL NO.	CERTIFIED BY:	DATE:
APPROVAL ☐ ISSUE:	REVIEW ☐ ISSUE:	FINAL ☐ ISSUE:	

FLOWSERVE CORP., ROTATING EQUIPMENT DIV., DAYTON, OHIO U.S.A. 7/99 SP1530STD-03

FLOWSERVE

POLYCHEM - GROUP II- PROCESS PUMP

CROSS SECTIONAL PARTS LIST



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KEY	ITEM	QTY	DESCRIPTION	CATALOG-MATL
1	100	1	CASING	
2	103	1	IMPELLER	
3	104	1	GASKET-IMPELLER	
4	105	1	SHAFT	
5	106	1	REAR COVER PLATE	
6	108	1	ADAPTER	
7	109	1	FOOT	
8	109A	1	SHIM	2Y109A-304
9	111	4	STUD-GLAND	
10	111A	4	HEXNUT-GLAND	3Z111A-E8
10A	111B	1	BELLEVILLE WASHER	SE111C-N17
10B	111C	1	FLAT WASHER	LC115B-18-8
11	114	1	DEFLECTOR	
12	115	10	STUD	GB115
12A	115A	10	HEX. NUT-CASING	AJ115A
13	139	4	CAP SCREW - BEARING HOUSING	2Y139
14	118	1	OIL SEAL-INBOARD	
15	119	1	BEARING HOUSING	
16	120	1	BEARING INBOARD	
17	121	1	BEARING OUTBOARD	2K121-SR
19	124	1	LOCK NUT	2Z124-SR

KEY	ITEM	QTY	DESCRIPTION	CATALOG-MATL
20	125	1	LOCK WASHER	2Z125-SR
21	129	1	OIL SEAL OUTBOARD	2Z129-TSSR
22	130	1	KEY	2Z130-Z
23	131	1	O-RING ADAPTER	
24	133	1	OILER-BEARING HOUSING	2Z133-SR
25	134	1	PLUG HOUSING DRAIN	1K134-SR
26	135	1	PLUG VENT	1K135-SRCD
27	136	1	FASTENER-FOOT/BRG HSG	2Y136-SR
28	140	2	FASTENER-COVER/ADAPTER	AJ140-SR
29	153	1	MECHANICAL SEAL	
30	154	1	NON-METALLIC CANISTER	SE154-CRTM
31	172	1	NIPPLE	1Z172-SR
32	177	1	SLEEVE	SF177
33	190	1	GLAND-MECHANICAL SEAL	
34	190G		GLAND GASKET	
35	200	1	SIGHT GAGE	1K200B-SRCD
36	200A	1	TAG-OIL LEVEL	1K200T-304
37	201	1	CARRIER	2Y201C-CI
38	201A	3	SET SCREW BEARING CARRIER	2Y201A-SR
39	201B	2	CARRIER O-RING	GL223-NBR
40	201C	1	SNAP RING	2K201C-SR

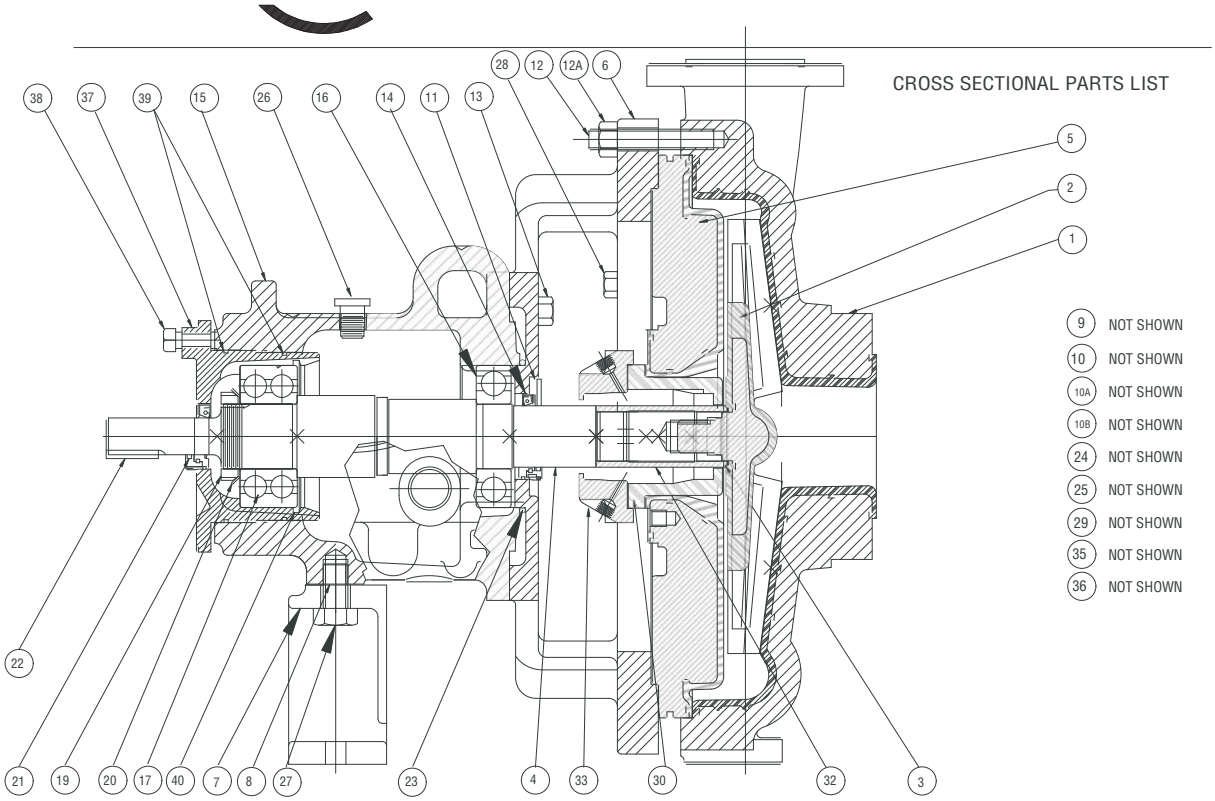
CUSTOMER		CUSTOMER P.O.	CUSTOMER ITEM NO.
FLOWSERVE ORDER NO.	SERIAL NO.	CERTIFIED BY:	DATE:
APPROVAL ☐ ISSUE:	REVIEW ☐ ISSUE:	FINAL ☐ ISSUE:	

THE FLOWSERVE CORP., ROTATING EQUIPMENT DIV., DAYTON, OHIO U.S.A. 00-08-30

SP1683STD-02

FLOWSERVE

POLYCHEM -13"- GROUP II- PROCESS PUMP



CROSS SECTIONAL PARTS LIST

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KEY	ITEM	QTY	DESCRIPTION	CATALOG-MATL
1	100	1	CASING	__100-
2	103	1	IMPELLER	__103-
3	104	1	GASKET-IMPELLER	SF104
4	105	1	SHAFT	__105-
5	106	1	REAR COVER PLATE	SJ106-DIPA
6	108	1	ADAPTER	__108-
7	109	1	FOOT	YS109-
8	109A	1	SHIM	2Y109A-304
9	111	4	STUD-GLAND	__111-
10	111A	4	HEXNUT-GLAND	3Z111A-E8
10A	111B	1	BELLEVILLE WASHER	SE111C-N17
10B	111C	1	FLAT WASHER	LC115B-18-8
11	114	1	DEFLECTOR	2Z114-TEFC
12	115	12	STUD	GB115-B7TF
12A	115A	12	HEX. NUT-CASING	AJ115A-SRTF
13	139	4	CAP SCREW - BEARING HOUSING	2Y139-
14	118	1	OIL SEAL-INBOARD	2Z118-TSSR
15	119	1	BEARING HOUSING	2Y119-
16	120	1	BEARING INBOARD	2Z120-SR
17	121	1	BEARING OUTBOARD	SK121-SR
19	124	1	LOCK NUT	2Z124-SR

KEY	ITEM	QTY	DESCRIPTION	CATALOG-MATL
20	125	1	LOCK WASHER	2Z125-SR
21	129	1	OIL SEAL OUTBOARD	2Z129-TSSR
22	130	1	KEY	2Z130-Z
23	131	1	O-RING ADAPTER	2Z131-
24	133	1	OILER-BEARING HOUSING	1K133-PS
25	134	2	PLUG HOUSING DRAIN	1K134-
26	135	1	PLUG VENT	1K135-SRCD
27	136	1	FASTENER-FOOT/BRG HSG	2Y136-SR
28	140	2	FASTENER-COVER/ADAPTER	AJ140-SR
29	153	1	MECHANICAL SEAL	__153-
30	154	1	NON-METALLIC CANISTER	__154-
32	177	1	SLEEVE	__177-
33	190	1	GLAND-MECHANICAL SEAL	SE190E-
34	190G		GLAND GASKET	SE190G-TM
36	200A	1	TAG-OIL LEVEL	1K200T-304
37	201	1	CARRIER	2Y201__-
38	201A	3	SET SCREW BEARING CARRIER	2Y201A-SR
39	201B	2	CARRIER O-RING	GL223-NBR
40	201C	1	SNAP RING	2K201C-SR

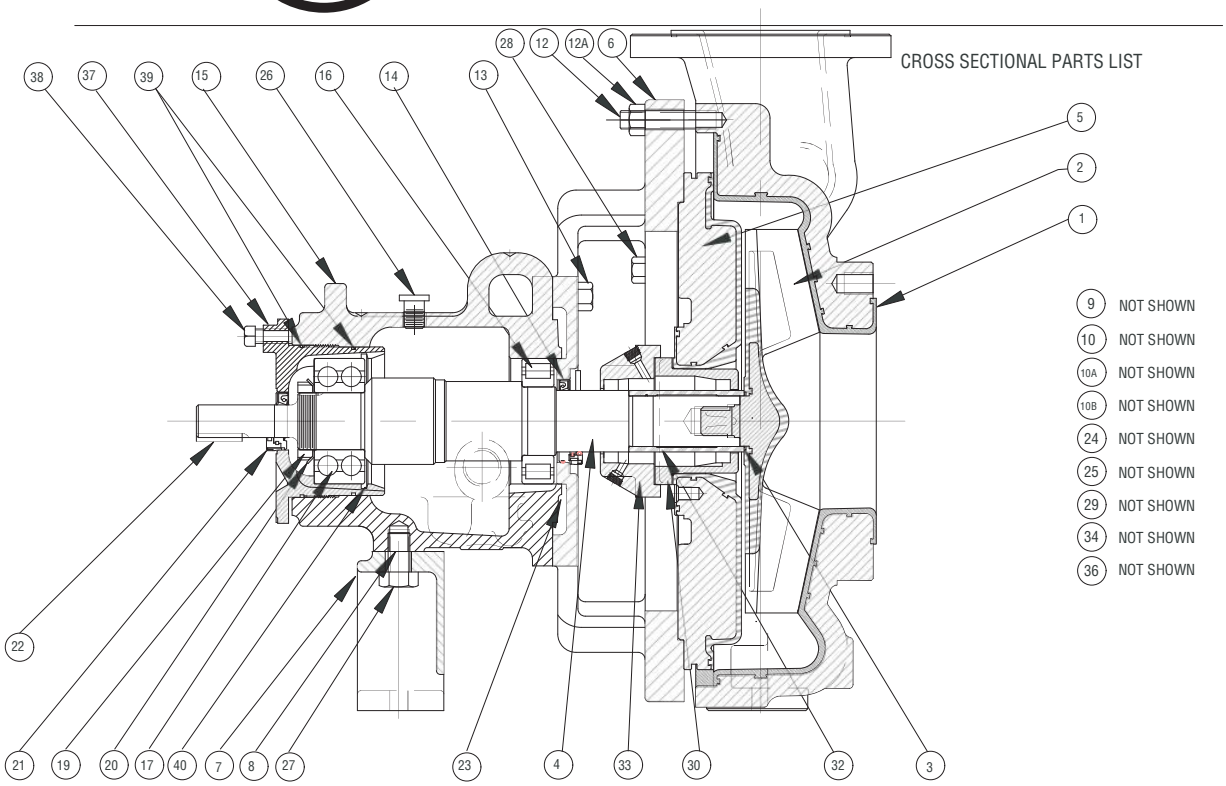
CUSTOMER		CUSTOMER P.O.	CUSTOMER ITEM NO.
FLOWSERVE ORDER NO.	SERIAL NO.	CERTIFIED BY:	DATE:
APPROVAL ☐ ISSUE:	REVIEW ☐ ISSUE:	FINAL ☐ ISSUE:	

THE FLOWSERVE CORP., PUMP DIV., DAYTON, OHIO U.S.A. 1/2/02

SP1700STD-02

FLOWSERVE

POLYCHEM - PS6X4-13HD - GROUP II
PROCESS PUMP



CROSS SECTIONAL PARTS LIST

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36 NOT SHOWN

KEY	ITEM	QTY	DESCRIPTION	CATALOG-MATL
1	100	1	CASING	SL100-DIPA
2	103	1	IMPELLER	SL103HD-13-D4PA
3	104	1	GASKET-IMPELLER	SF104HD-VA
4	105	1	SHAFT	SF105SHD-BB
5	106	1	REAR COVER PLATE	SL106-DIPA
6	108	1	ADAPTER	SL108-DCI4
7	109	1	FOOT	YS109F-CI
8	109A	1	SHIM	2Y109A-304
9	111	4	STUD-GLAND	_111B-B8CI
10	111A	4	HEXNUT-GLAND	3Z111A-E8
10A	111B	1	BELLEVILLE WASHER	SE111C-N17
10B	111C	1	FLAT WASHER	LC115B-18-8
12	115	12	STUD	GB115-B7TF
12A	115A	12	HEX. NUT-CASING	AJ115A-SRTF
13	139	4	CAP SCREW - BEARING HOUSING	2Y139-SR
14	118	1	OIL SEAL-INBOARD	SJ118-BZV
15	119	1	BEARING HOUSING	2Y119-CI
16	120	1	BEARING INBOARD	SJ120-SR
17	121	1	BEARING OUTBOARD	SK121-SR
19	124	1	LOCK NUT	2Z124-SR
20	125	1	LOCK WASHER	2Z125-SR

KEY	ITEM	QTY	DESCRIPTION	CATALOG-MATL
21	129	1	OIL SEAL OUTBOARD	2Z129-TSSR
22	130	1	KEY	2Z130-Z
23	131	1	O-RING ADAPTER	2Z131-NBR
24	133	1	OILER-BEARING HOUSING	1K133-PS
25	134	1	PLUG HOUSING DRAIN	1K134-SR
26	135	2	PLUG VENT	1K135-SRCD
27	136	1	FASTENER-FOOT/BRG HSG	2Y136-SR
28	140	2	FASTENER-COVER/ADAPTER	AJ140-SR
29	153	1	MECHANICAL SEAL	_153-
30	154	1	NON-METALLIC CANISTER	SJ154-CRTM
32	177	1	SLEEVE	SL177-SC3
33	190	1	GLAND-MECHANICAL SEAL	SE190E-C20
34	190G		GLAND GASKET	SE190G-TM
36	200A	1	TAG-OIL LEVEL	1K200T-304
37	201	1	CARRIER	2Y201C-CI
38	201A	3	SET SCREW BEARING CARRIER	2Y201A-SR
39	201B	2	CARRIER O-RING	GL223-NBR
40	201C	1	SNAP RING	2K201C-SR

CUSTOMER		CUSTOMER P.O.	CUSTOMER ITEM NO.
FLOWSERVE ORDER NO.	SERIAL NO.	CERTIFIED BY:	DATE:
APPROVAL ☐ ISSUE:	REVIEW ☐ ISSUE:	FINAL ☐ ISSUE:	

THE FLOWSERVE CORP., PUMP DIV., DAYTON, OHIO U.S.A. 1/2/02

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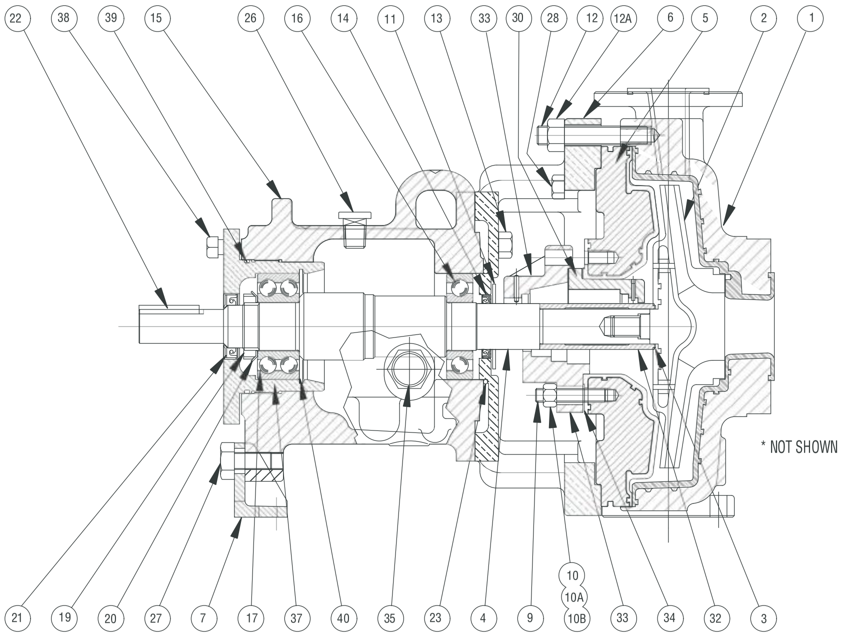

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KEY No	VDMA	Qty	DESCRIPTION	MATERIAL
34	412.4	2	GASKET - FOLLOWER FLANGE	Hostaflon TFM
33	471	1	FOLLOWER FLANGE	
30	471.1	1	CANISTER	Carbon Fiber Reinforced PFA
29*	433	1	DOUBLE SEAL	
34	412.4	1	GASKET - FOLLOWER FLANGE	Hostaflon TFM
33	471	1	FOLLOWER FLANGE	
29*	433	1	SINGLE SEAL	
29*	433	1	CARTRIDGE SEAL	
40	932	1	SNAP RING	Steel
39	412.3	1	CARRIER - O-RING	Nitrile - Butadiene Rubber
38	901.2	3	SET SCREW	Steel
37	360	1	CARRIER	Ductile Iron
36*	990	1	TAG - OIL LEVEL	Stainless Steel
35	642	1	SIGHT GAGE	Steel protective plated - Glass
32	523	1	SLEEVE	
31*	638.1	1	NIPPLE	Steel
28	902.3	2	SCREW - COVER/BRG HSG	Steel
27	900	1	SCREW - FOOT/BRG HSG	Steel
26	672	1	PLUG VENT	Steel protective plated
25*	912	1	PLUG HOUSING DRAIN	Steel
24*	638	1	OILER - BEARING HOUSING	Steel / plastic
23	412.4	1	O-RING - ADAPTER	Nitrile - Butadiene Rubber
22	940	1	KEY	Steel
21	420.2	1	OIL SEAL - OUTBOARD	Viton / steel
20	931	1	LOCK WASHER	Steel
19	921	1	LOCK NUT	Steel
17	321.2	1	BALL BEARING - OUTBOARD	Steel
16	321.1	1	BALL BEARING - INBOARD	Steel
15	330	1	HOUSING BEARING	Cast Iron
14	420.1	1	OIL SEAL - INBOARD	Viton / steel
13	901.6	4	FASTENER - BEARING HOUSING	Steel
12A	920.1	10	NUT	Stainless Steel
12	902.1	10	STUD	Stainless Steel
11	507	1	DEFLECTOR	TFE
10B	920.4	4	FLAT WASHER	Stainless Steel
10A	920.3	4	BELLEVILLE WASHER	Stainless Steel-Nickel plated
10	920.2	4	NUT	Stainless Steel
9	902.2	4	STUD	Stainless Steel
7	183	1	FOOT	Ductile Iron
6	340	1	ADAPTER	Ductile Iron
5	161	1	REAR COVER PLATE	Ductile Iron / PFA Liner
4	210	1	SHAFT	Steel
3	412.1	1	IMPELLER GASKET	Viton A
2	230	1	IMPELLER	Steel / PFA
1	102	1	CASING	Ductile Iron / PFA Liner

CUSTOMER:
ORDER No:
PROJECT:
LOCATION:
ITEM No | SERIAL No | FLOWSERVE REF.:

SUBJECT: CROSS SECTION DWG - POLYCHEM PS Group B

STD | P

DO NOT SCALE ≠

FLOWSERVE
FLOWSERVE PUMP DIVISION
NEWARK - ENGLAND

REV.	DATE	CUSTOMISED BY

ORDER DWG NO.

APPROVAL NOTE TO CUSTOMER

1.-PURCHASER'S COMMENTS AND/OR CORRECTIONS, WITHIN THE SCOPE OF CONTRACT WILL BE MADE ON THE FIRST COMPLETED CERTIFIED DRAWING SUBMITTED BY FLOWSERVE CORPORATION AND RETURNED

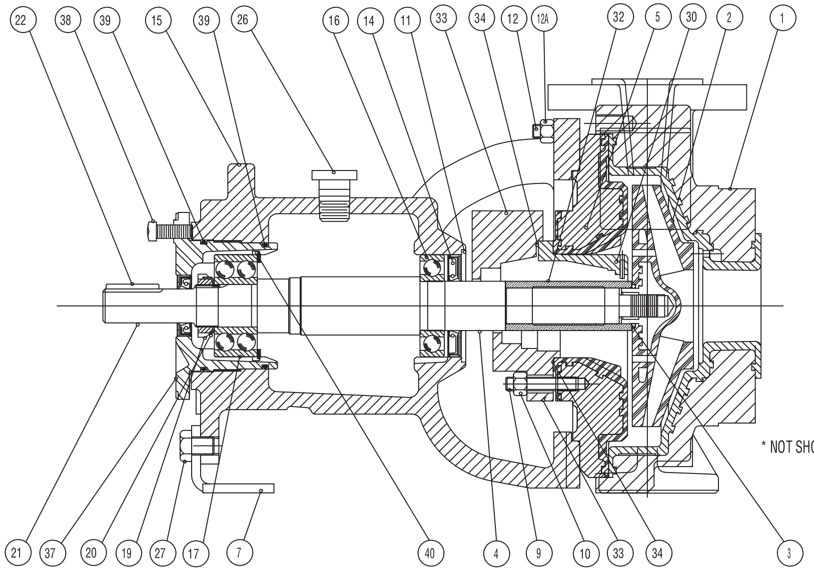
2.-CORRECTIONS, ALTERATIONS, ADDITIONS AND MODIFICATIONS OUTSIDE SCOPE OF CONTRACT OR MADE AFTER FIRST SUBMITTAL MAY REQUIRE AN ADDITIONAL ENGINEERING SERVICE CHARGE.

3.-ITEMS CONDITIONALLY APPROVED OR WITH DEFERRED APPROVAL BY PURCHASER, MUST BE SPECIFICALLY STATED OTHERWISE DELIVERY MAY BE EFFECTED.

PROPRIETARY NOTE

REV	DATE	DRAWN	CHECK	APPRO	EC
00	06:15:00	JLD	JLA	AM	CDD598

MASTER DWG No WX01738AA---00



* NOT SHOWN

KEY No	VDMA	Qty	DESCRIPTION	MATERIAL
34	412.4	2	GASKET - FOLLOWER FLANGE	Hostaflon TFM
33	471	1	FOLLOWER FLANGE	
30	471.1	1	CANISTER	Carbon Fiber Reinforced PFA
29	433	1	DOUBLE SEAL	
34	412.4	1	GASKET - FOLLOWER FLANGE	Hostaflon TFM
33	471	1	FOLLOWER FLANGE	
29	433	1	SINGLE SEAL	
29	433	1	CARTRIDGE	
40	932	1	SNAP RING	Steel
39	412.3	1	CARRIER - O-RING	Nitrile - Butadiene Rubber
38	901.2	3	SET SCREW	Steel
37	360	1	CARRIER	Cast Iron
36*	990	1	TAG - OIL LEVEL	Stainless Steel
35*	642	1	SIGHT GAGE	Steel protect. plated - Glass
32	523	1	SLEEVE	
31*	638.1	1	NIPPLE	Steel
28*	902.3	2	SCREW - COVER/BRG HSG	Steel
27	900	1	SCREW - FOOT/BRG HSG	Steel
26	672	1	PLUG VENT	Steel protective plated
25*	912	1	PLUG HOUSING DRAIN	Steel
24*	638	1	OILER - BEARING HOUSING	Steel - Plastic
22	940	1	KEY	Steel
21	420.2	1	OIL SEAL - OUTBOARD	Teflon-Silicon Rubber-Steel
20	931	1	LOCK WASHER	Steel
19	921	1	LOCK NUT	Steel
17	321.2	1	BALL BEARING - OUTBOARD	Steel
16	321.1	1	BALL BEARING - INBOARD	Steel
15	330	1	HOUSING BEARING	Ductile Cast Iron
14	420.1	1	OIL SEAL - INBOARD	Teflon-Silicon Rubber-Steel
12A	920.1	8	NUT - CASING	Stainless Steel
12	902.1	8	STUD - CASING	Stainless Steel
11	507	1	DEFLECTOR	Carbon Filled TFE
10	920.2	4	NUT - GLAND	Stainless Steel
9	902.2	4	STUD - GLAND	Stainless Steel
7	183	1	FOOT	Steel
5	161	1	REAR COVER PLATE	Ductile Iron / PFA Liner
4	210	1	SHAFT	Steel
3	412.1	1	O-RING - IMPELLER	
2	230	1	IMPELLER	PFA
1	102	1	CASING	Ductile Iron / PFA Liner

		CUSTOMER:
		ORDER No:
		PROJECT:
		LOCATION:
ITEM No	SERIAL No	FLOWSERVE REF.:

SUBJECT CROSS SECTION DWG - POLYCHEM PS Group A

STD	P	FLOWSERVE	REV.	DATE	CUSTOMISED BY
DO NOT SCALE		FLOWSERVE PUMP DIVISION NEWARK - ENGLAND	ORDER DWG NO.		

APPROVAL NOTE TO CUSTOMER

1.-PURCHASER'S COMMENTS AND/OR CORRECTIONS, WITHIN THE SCOPE OF CONTRACT WILL BE MADE ON THE FIRST COMPLETED CERTIFIED DRAWING SUBMITTED BY FLOWSERVE CORPORATION AND RETURNED

2.-CORRECTIONS, ALTERATIONS, ADDITIONS AND MODIFICATIONS OUTSIDE SCOPE OF CONTRACT OR MADE AFTER FIRST SUBMITTAL MAY REQUIRE AN ADDITIONAL ENGINEERING SERVICE CHARGE.

3.-ITEMS CONDITIONALLY APPROVED OR WITH DEFERRED APPROVAL BY PURCHASER, MUST BE SPECIFICALLY STATED OTHERWISE DELIVERY MAY BE EFFECTED.

PROPRIETARY NOTE

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REV	DATE	DRAWN	CHECK	APPRO	EC
02	20/08/98	JMP			
MASTER DWG No		WX01396AA---02			

FLOWSERVE

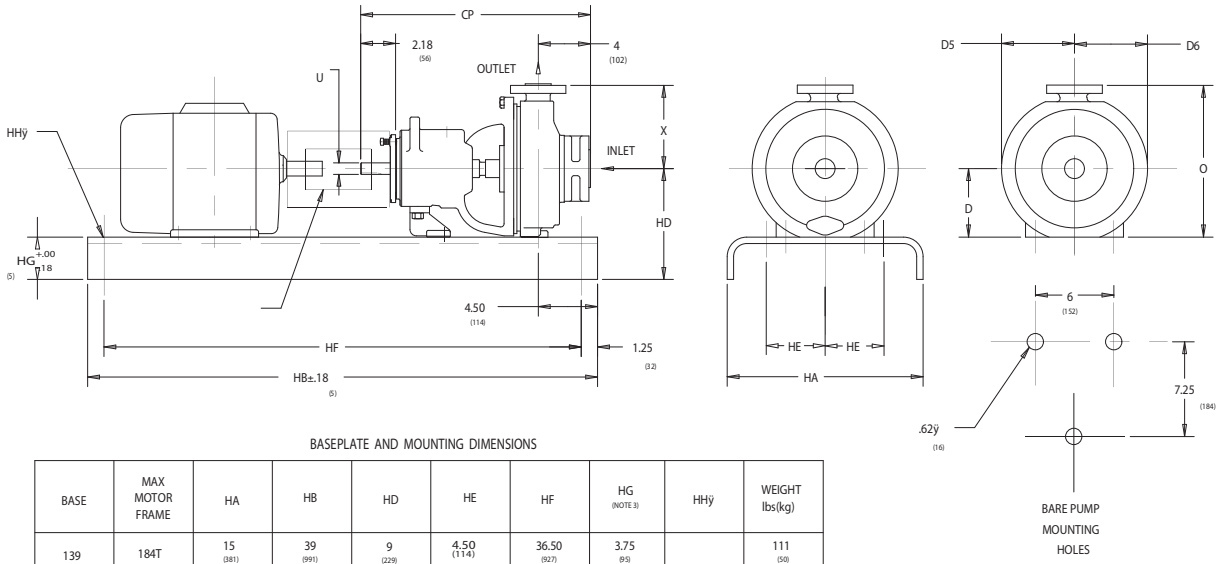
POLYCHEM S-SERIES - GROUP 1

PROCESS PUMP

SUPPLEMENT DRAWINGS ATTACHED WHEN LISTED BELOW	AVAILABLE FLANGES (ANSI B16.5)
	CLASS 150 RF (ASME B16.5) — STD
	SPECIAL
	BASEPLATE
	STEEL
	SPECIAL

PUMP DIMENSIONS (ASME B73.1M)

PUMP SIZE INLET X OUTLET X MAX IMP DIA	PUMP WT lbs(kg)	CP	D	D5	D6	O	U		X
							SHAFTÿ	KEYWAY	
PS 1.5 X 1 - 6	121 (55)	17.50 (445)	5.25 (133)	5.58 (142)	5.58 (142)	11.75 (298)	.88 (22)	.18 X .09 (4.8 X 2.4)	6.50 (165)
PS 3 X 1.5 - 6	136 (62)								
PS 3 X 2 - 6	137 (62)								
PS 1.5 X 1 - 8	131 (59)			6.62 (168)	6.62 (168)				



BASEPLATE AND MOUNTING DIMENSIONS

BASE	MAX MOTOR FRAME	HA	HB	HD	HE	HF	HG (NOTE 3)	HHÿ	WEIGHT lbs(kg)
139	184T	15 (381)	39 (991)	9 (229)	4.50 (114)	36.50 (927)	3.75 (95)	.75 (19)	111 (50)
148	215T	18 (457)	48 (1219)	9.50 (241)	6 (152)	45.50 (1156)	4.12 (105)		163 (74)
	256T			10.50 (267)					
153	286T	21 (533)	53 (1346)	11.88 (302)	7.50 (191)	50.50 (1283)	4.75 (121)		212 (96)
	326TS			12.88 (327)					

1. DIMENSIONS IN PARENTHESIS () ARE IN MILLIMETERS.
2. INSTALLATION DIMENSIONS ARE ±1/8"(3) UNLESS OTHERWISE NOTED.
3. "HG" DIM. APPLIES TO THE LOWER PAD HEIGHT. WITH SOME BASES THIS WILL OCCUR AT PUMP END AND WITH OTHERS AT MOTOR END.

CUSTOMER		CUSTOMER P.O.	CUSTOMER ITEM NO.
FLOWSERVE ORDER NO.	SERIAL NO.	CERTIFIED BY:	DATE:
APPROVAL ☐ ISSUE:	REVIEW ☐ ISSUE:	FINAL ☐ ISSUE:	

FLOWSERVE CORP., ROTATING EQUIPMENT DIV., DAYTON, OHIO U.S.A. 4/99

SP1540STD-04

FLOWSERVE

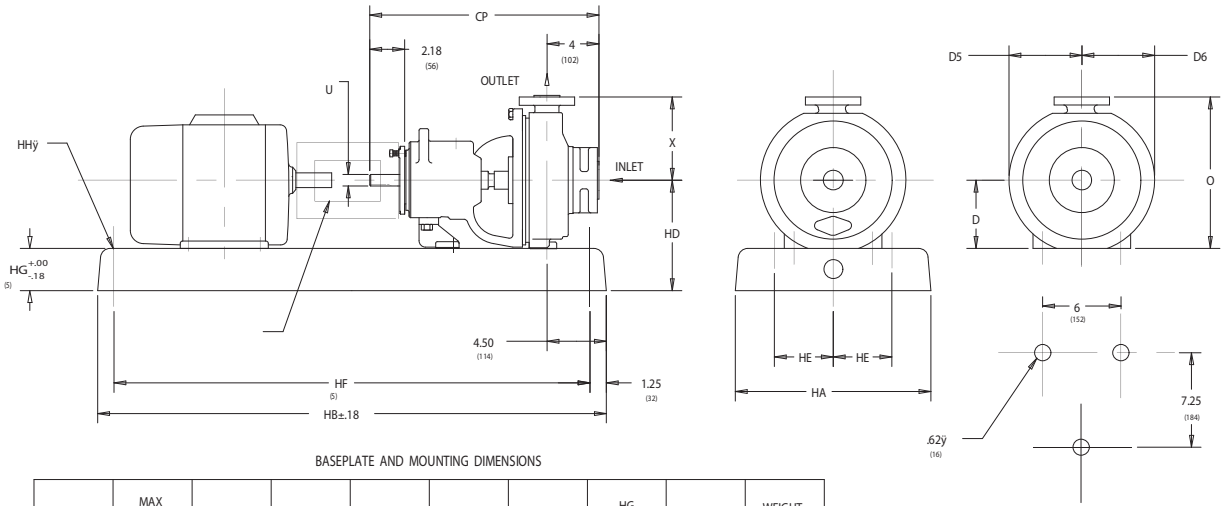
POLYCHEM S-SERIES - GROUP 1

PROCESS PUMP WITH POLYBASE

SUPPLEMENT DRAWINGS ATTACHED WHEN LISTED BELOW	AVAILABLE FLANGES
_____	CLASS 150 RF (ASME B16.5) _____ STD ☐
_____	SPECIAL _____ ☐
_____	POLYBASE
_____	W/O DRAIN _____ ☐
_____	SPECIAL _____ ☐

PUMP DIMENSIONS (ASME B73.1M)

PUMP SIZE INLET X OUTLET X MAX IMP DIA	PUMP WT lbs(kg)	CP	D	D5	D6	O	U		X
							SHAFTÿ	KEYWAY	
PS 1.5 X 1 - 6	121 (55)	17.50 (445)	5.25 (133)	5.58 (142)	5.58 (142)	11.75 (298)	.88 (22)	.18 X .09 (4.8 X 2.4)	6.50 (165)
PS 3 X 1.5 - 6	136 (62)								
PS 3 X 2 - 6	137 (62)								
PS 1.5 X 1 - 8	131 (59)			6.62 (168)	6.62 (168)				



BASEPLATE AND MOUNTING DIMENSIONS

BASE	MAX MOTOR FRAME	HA	HB	HD	HE	HF	HG (NOTE 3)	HHÿ	WEIGHT lbs(kg)
139	184T	13 (330)	39 (991)	8.88 (226)	4.50 (114)	36.50 (927)	3.63 (92)	.75 (19)	130 (59)
148	215T	16.25 (413)	48 (1219)	9.25 (235)	6 (152)	45.50 (1156)	4.00 (102)		220 (100)
	256T			10.25 (260)					
153	286T	19.25 (489)	53 (1346)	11.00 (279)	7.50 (191)	50.50 (1283)			305 (138)
	326TS			12.00 (305)					

BARE PUMP MOUNTING HOLES

1. DIMENSIONS IN PARENTHESIS () ARE IN MILLIMETERS.
2. INSTALLATION DIMENSIONS ARE ±1/8"(3) UNLESS OTHERWISE NOTED.
3. "HG" DIM. APPLIES TO THE LOWER PAD HEIGHT. WITH SOME BASES THIS WILL OCCUR AT PUMP END AND WITH OTHERS AT MOTOR END.

CUSTOMER		CUSTOMER P.O.	CUSTOMER ITEM NO.
FLOWSERVE ORDER NO.	SERIAL NO.	CERTIFIED BY:	DATE:
APPROVAL ☐ ISSUE:	REVIEW ☐ ISSUE:	FINAL ☐ ISSUE:	

FLOWSERVE CORP., ROTATING EQUIPMENT DIV., DAYTON, OHIO U.S.A. 4/99

SP1545STD-04

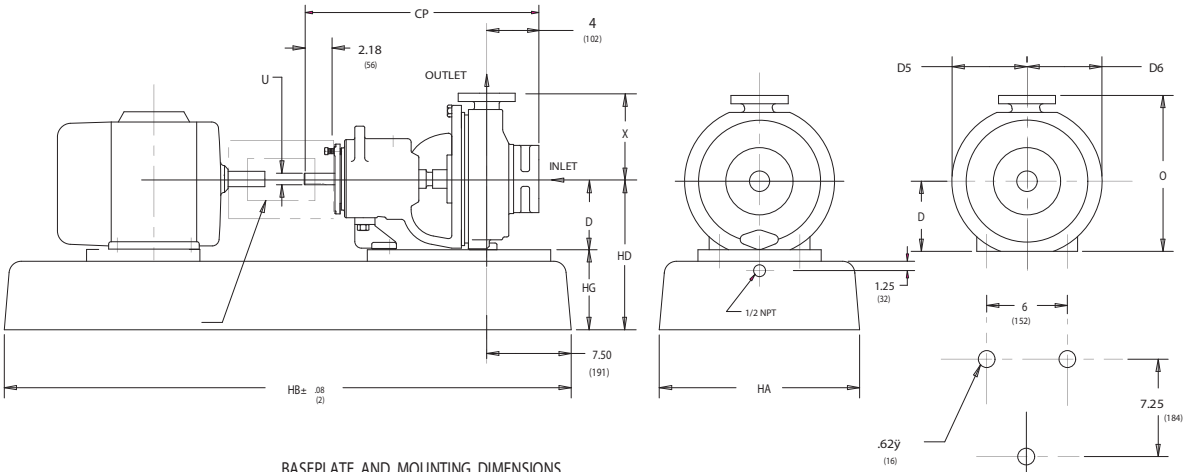
FLOWSERVE

POLYCHEM S- SERIES
GROUP 1 PROCESS PUMP W/ POLYSHIELD BASE

SUPPLEMENT DRAWINGS ATTACHED WHEN LISTED BELOW	AVAILABLE FLANGES (ANSI B16.5)
_____	CLASS 150 RF STD ☐
_____	SPECIAL _____ ☐
_____	BASEPLATE
_____	SPECIAL _____ ☐
_____	

PUMP DIMENSIONS (ASME B73.1M)

PUMP SIZE INLET X OUTLET X IMP DIA	PUMP WT lbs (kg)	CP	D	D5	D6	O	U SHAFTÿ	U KEYWAY	X
PS_1.5 X 1 - 6	121 (55)	17.50 (445)	5.25 (133)	5.62 (143)	5.62 (143)	11.75 (298)	.88 (22)	.18 X .09 (4.8 X 2.4)	6.50 (165)
PS_3 X 1.5 - 6	136 (62)								
PS_3 X 2 - 6	137 (63)								
PS_1.5 X 1 - 8	131 (59)			6.62 (168)	6.62 (168)				



BASEPLATE AND MOUNTING DIMENSIONS

	MAX MOTOR FRAME	HA	HB	HD	HG	WEIGHT lbs(kg)
	132S/M	17.00 (432)	50.00 (1270)	HG + D	10 - 18 BY 1.00 INCR (254 - 457 IN 25.4 INCR)	318 FOR HG=10" +16#/IN FOR OTHER HEIGHTS (144 FOR HG= 254MM +7.3 KG/25.4 MM FOR OTHER HEIGHTS)
	200M/L	23.00 (584	61.00 (1549)	HG + D	14 - 24 BY 1.00 INCR (336 - 610 IN 25.4 INCR)	550 FOR HG=10" +17#/IN FOR OTHER HEIGHTS (250 Kg FOR HG= 254mm +7.7 Kg/25.4 mm FOR OTHER HEIGHTS)

BARE PUMP MOUNTING HOLES

FOR ACTUAL PART NUMBERS SEE DRAWING D58881A

1. DIMENSIONS IN PARENTHESIS () ARE IN MILLIMETERS.
2. INSTALLATION DIMENSIONS ARE ±1/8"(3) UNLESS OTHERWISE NOTED.
3. "HG" DIM. APPLIES TO THE PUMP PAD HEIGHT.

CUSTOMER		CUSTOMER P.O.	CUSTOMER ITEM No.
DURCO ORDER No.	SERIAL No.	CERTIFIED BY:	DATE:
APPROVAL ☐ ISSUE:	REVIEW ☐ ISSUE:	FINAL ☐ ISSUE:	

FLOWSERVE CORP., PUMP DIVISION, DAYTON, OHIO U.S.A. 3/02

SP1813STD-01

FLOWSERVE

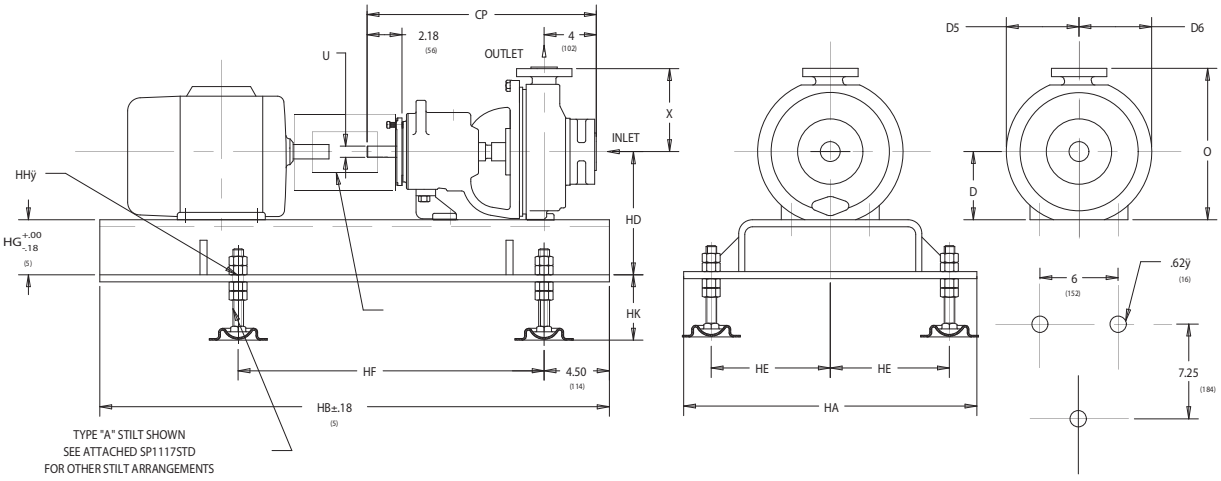
POLYCHEM S-SERIES - GROUP 1

PROCESS PUMP - STILT MOUNTED

SUPPLEMENT DRAWINGS ATTACHED WHEN LISTED BELOW	AVAILABLE FLANGES
_____	CLASS 150 RF (ASME B16.5) _____ STD ☐
_____	SPECIAL _____ ☐
_____	BASEPLATE
_____	STEEL _____ ☐
_____	SPECIAL _____ ☐

PUMP DIMENSIONS (ASME B73.1M)

PUMP SIZE INLET X OUTLET X MAX IMP DIA	PUMP WT lbs(kg)	CP	D	D5	D6	O	U SHAFTÿ	U KEYWAY	X
PS 1.5 X 1 - 6	121 (55)	17.50 (445)	5.25 (133)	5.58 (142)	5.58 (142)	11.75 (298)	.88 (22)	.18 X .09 (4.8 X 2.4)	6.50 (165)
PS 3 X 1.5 - 6	136 (62)								
PS 3 X 2 - 6	137 (62)								
PS 1.5 X 1 - 8	131 (59)			6.62 (168)	6.62 (168)				



TYPE "A" STILT SHOWN
SEE ATTACHED SP1117STD
FOR OTHER STILT ARRANGEMENTS

BARE PUMP
MOUNTING
HOLES

BASEPLATE AND MOUNTING DIMENSIONS

BASE	MAX MOTOR FRAME	HA	HB	HD	HE	HF	HG (NOTE 3)	HHÿ	HK	WEIGHT lbs(kg)
139	184T	24 (610)	39 (991)	9 (229)	9.75 (248)	25 (635)	3.75 (95)	.81 (21)		243 (110)
148	215T	27 (686)	48 (1219)	9.50 (241)	11.25 (286)	27 (686)	4.12 (105)			345 (156)
	256T			10.50 (267)		31 (787)				
153	286T	30 (762)	53 (1346)	11.88 (302)	12.75 (324)	32.50 (826)	4.75 (121)			436 (198)
	326TS			12.88 (327)						

WRITE IN HEIGHT REQUIRED

1. DIMENSIONS IN PARENTHESIS () ARE IN MILLIMETERS.
2. INSTALLATION DIMENSIONS ARE ±1/8"(3) UNLESS OTHERWISE NOTED.
3. "HG" DIM. APPLIES TO THE LOWER PAD HEIGHT. WITH SOME BASES THIS WILL OCCUR AT PUMP END AND WITH OTHERS AT MOTOR END.

CUSTOMER		CUSTOMER P.O.	CUSTOMER ITEM NO.
FLOWSERVE ORDER NO.	SERIAL NO.	CERTIFIED BY:	DATE:
APPROVAL ☐ ISSUE:	REVIEW ☐ ISSUE:	FINAL ☐ ISSUE:	

FLOWSERVE CORP., ROTATING EQUIPMENT DIV., DAYTON, OHIO U.S.A. 4/99

SP1548STD-04

FLOWSERVE

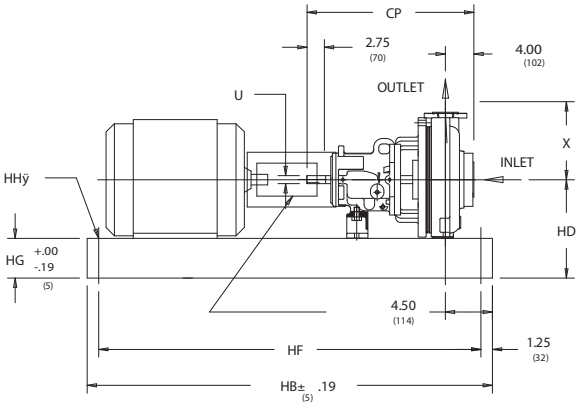
POLYCHEM - S-SERIES - GROUP II - PROCESS PUMP

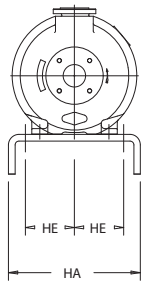
TYPE 'A" BASE MOUNT

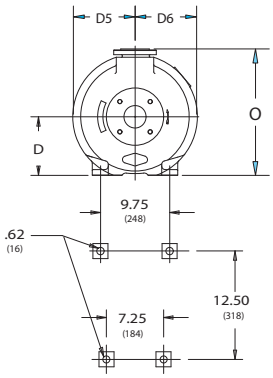
SUPPLEMENT DRAWINGS ATTACHED WHEN LISTED BELOW	AVAILABLE FLANGES (ANSI B16.5)
	CLASS 150 RF ☐
	SPECIAL _____ ☐
	BASEPLATE
	STEEL _____ ☐
	SPECIAL _____ ☐

PUMP DIMENSIONS (ANSI B73.1)

	PUMP SIZE INLET x OUTLET - MAX IMP DIA	PUMP WT. lbs(kg)	CP	D	D5	D6	O	U SHAFTÿ	U KEYWAY	X
	PS 2 X 1 - 10	331	23.5 (597)	8.25 (210)	8.75 (222)	8.75 (222)	16.75 (426)	1.13 (29)	.25 X .13 (6 X 3)	8.50 (216)
	PS 3 X 2 - 10	371					17.75 (438)			9.50 (241)
	PS 4 X 3 - 10	401					19.25 (489)			11.00 (279)







BARE PUMP MOUNTING DIMENSIONS

BASEPLATE AND MOUNTING DIMENSIONS

	BASE	MAX MOTOR FRAME	HA	HB	HD	HE	HF	HG (NOTE 3)	HHÿ	WEIGHT lbs(kg)
	245	184T	15 (381)	45 (1143)	12 (305)	4.5 (114)	42.50 (1080)	3.75 (95)	7.50 (19)	129 (59)
	252	215T	18 (457)	52 (1321)	12.38 (314)	6 (152)	49.50 (1257)	4.13 (105)		177 (80)
	258	286T	21 (533)	58 (1473)	13 (330)	7.50 (191)	55.50 (1410)	4.75 (121)	1.00 (25)	234 (106)
	264	326T	22 (559)	64 (1626)	13 (330)		61.50 (1562)			328 (149)
		365T			13.88 (352)					
	268	405TS	26 (660)	68 (1727)	14.88 (378)	9.50 (241)	65.50 (1664)			409 (186)
	280	449TS		80 (2032)	15.88 (403)		77.50 (1969)			481 (218)

1. DIMENSIONS IN PARENTHESIS () ARE IN MILLIMETERS.
2. INSTALLATION DIMENSIONS ARE ±.13"(3) UNLESS OTHERWISE NOTED.
3. "HG" DIM. APPLIES TO THE LOWER PAD HEIGHT. WITH SOME BASES THIS WILL OCCUR AT PUMP END AND WITH OTHERS AT MOTOR END.

CUSTOMER	CUSTOMER P.O.	CUSTOMER ITEM No.
DURCO ORDER No.	SERIAL No.	CERTIFIED BY: / DATE:
APPROVAL ☐ ISSUE:	REVIEW ☐ ISSUE:	FINAL ☐ ISSUE:

FLOWSERVE CORP., ROTATING EQUIPMENT DIV., DAYTON, OHIO U. S. A. 00-08-30

SP1684STD-02

FLOWSERVE

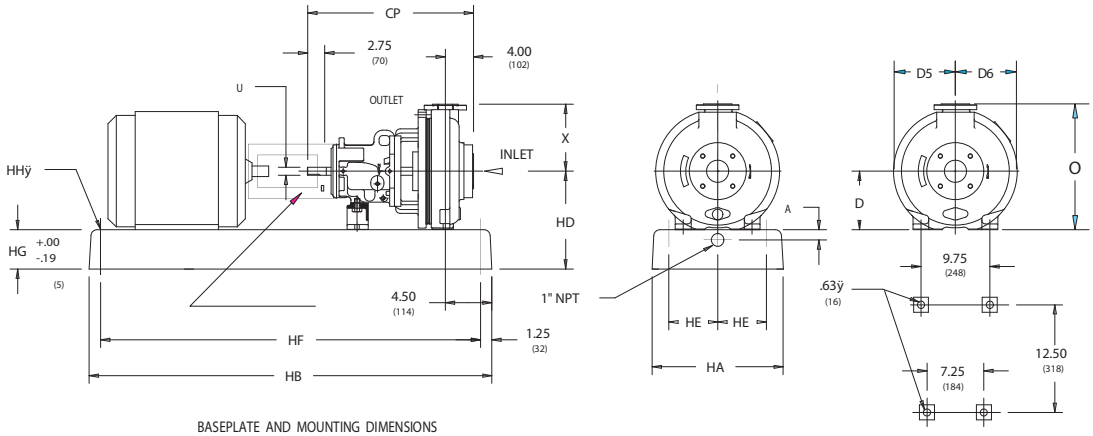
POLYCHEM - S-SERIES - GROUP II - PROCESS PUMP

TYPE 'B" BASE MOUNT

SUPPLEMENT DRAWINGS ATTACHED WHEN LISTED BELOW	AVAILABLE FLANGES (ANSI B16.5)
	CLASS 150 RF ☐
	SPECIAL _____ ☐
	BASEPLATE
	STEEL _____ ☐
	SPECIAL _____ ☐

PUMP DIMENSIONS (ANSI B73.1)

PUMP SIZE (INLET x OUTLET - MAX IMP DIA)	PUMP WT. lbs(kg)	CP	D	D5	D6	O	U SHAFTÿ	U KEYWAY	X
PS 2 X 1 - 10	331	23.5 (597)	8.25 (210)	8.75 (222)	8.75 (222)	16.75 (426)	1.13 (29)	.25 X .13 (6 X 3)	8.50 (216)
PS 3 X 2 - 10	371					17.75 (438)			9.50 (241)
PS 4 X 3 - 10	401					19.25 (489)			11.00 (279)



BARE PUMP MOUNTING DIMENSIONS

BASEPLATE AND MOUNTING DIMENSIONS

BASE	MAX MOTOR FRAME	HA	HB	HD	HE	HF	HG	HHÿ	A	WEIGHT lbs(kg)
245	184T	13.00 (330)	45.00 (1143)	11.88 (302)	4.50 (114)	42.50 (1080)	3.63 (92)	.75 (19)	1.81 (46)	150 (68)
252	215T	16.25 (413)	52.00 (1321)	12.25 (311)	6.00 (152)	49.50 (1257)	4.00 (102)	1.00 (25)	2.00 (51)	240 (109)
258	286T	19.25 (489)	58.00 (1473)		7.50 (191)	55.50 (1410)				315 (143)
264	326T		64.00 (1626)			61.50 (1562)				350 (158)
	365T			13.00 (330)						
268	405TS	26.00 (660)	68.00 (1727)	14.25 (362)	9.50 (241)	65.50 (1664)	4.25 (108)		2.25 (57)	535 (243)
280	449TS		80.00 (2032)	15.25 (387)		77.50 (1969)				630 (286)

1. DIMENSIONS IN PARENTHESIS () ARE IN MILLIMETERS.
2. INSTALLATION DIMENSIONS ARE ±.13"(3) UNLESS OTHERWISE NOTED.
3. "HG" DIM. APPLIES TO THE LOWER PAD HEIGHT. WITH SOME BASES THIS WILL OCCUR AT PUMP END AND WITH OTHERS AT MOTOR END.

CUSTOMER		CUSTOMER P.O.	CUSTOMER ITEM No.
DURCO ORDER No.	SERIAL No.	CERTIFIED BY:	DATE:
APPROVAL ☐ ISSUE:	REVIEW ☐ ISSUE:	FINAL ☐ ISSUE:	

FLOWSERVE CORP., ROTATING EQUIPMENT DIV., DAYTON, OHIO U. S. A. 00-08-30

SP1668STD-02

POLYCHEM S- SERIES
GROUP 2 PROCESS PUMP W/ POLYSHIELD BASE

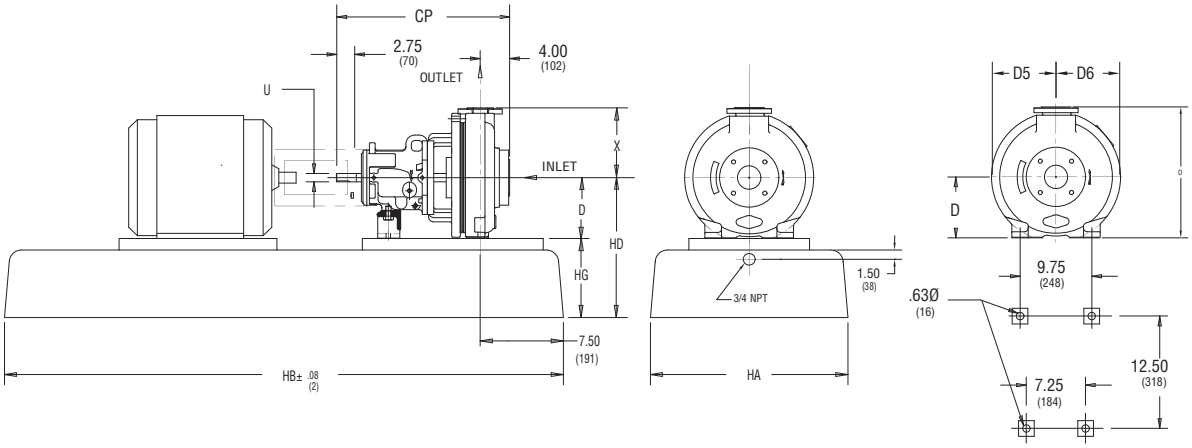
SUPPLEMENT DRAWINGS ATTACHED WHEN LISTED BELOW

AVAILABLE FLANGES (ANSI B16.5)
CLASS 150 RF STD ☐
SPECIAL _____ ☐

BASEPLATE
SPECIAL _____ ☐

PUMP DIMENSIONS (ANSI B73.1)

PUMP SIZE INLET x OUTLET - MAX IMP DIA	PUMP WT. lbs(kg)	CP	D	D5	D6	O	U SHAFTØ	U KEYWAY	X
PS 2 X 1 - 10	331 (150)	23.5 (597)	8.25 (210)	8.75 (222)	8.75 (222)	16.75 (426)	1.13 (29)	.25 X .13 (6 X 3)	8.50 (216)
PS 3 X 2 - 10	371 (168)					17.75 (438)			9.50 (241)
PS 4 X 3 - 10	401 (181)					19.25 (489)			11.00 (279)



BARE PUMP MOUNTING DIMENSIONS

BASEPLATE AND MOUNTING DIMENSIONS

MAX MOTOR FRAME	HA	HB	HD	HG	WEIGHT lbs(kg)
215T	23.00 (584)	55.00 (1397)	HG + D	14 - 24 BY 1.00 INCR (356 - 610 IN 25.4 INCR)	535 FOR HG=14" +20#/IN FOR OTHER HEIGHTS (242 FOR HG= 356MM +9.1 KG/25.4 MM FOR OTHER HEIGHTS)
326TS	23.00 (584	61.00 (1549)	HG + D	14 - 24 BY 1.00 INCR (356 - 610 IN 25.4 INCR)	548 FOR HG=14" +22#/IN FOR OTHER HEIGHTS (249 Kg FOR HG= 254mm +10.0Kg/25.4 mm FOR OTHER HEIGHTS)
445TS	29.00 (737)	73.00 (1854)	HG + D	14 - 24 BY 1.00 INCR (356 - 610 IN 25.4 INCR)	804 FOR HG=14" +30#/IN FOR OTHER HEIGHTS (365 Kg FOR HG= 254mm +13.6 Kg/25.4 mm FOR OTHER HEIGHTS)

FOR ACTUAL PART NUMBERS SEE DRAWING D58856A

1. DIMENSIONS IN PARENTHESIS () ARE IN MILLIMETERS.
2. INSTALLATION DIMENSIONS ARE ±1/8"(3) UNLESS OTHERWISE NOTED.
3. "HG" DIM. APPLIES TO THE PUMP PAD HEIGHT.

CUSTOMER		CUSTOMER P.O.	CUSTOMER ITEM No.
DURCO ORDER No.	SERIAL No.	CERTIFIED BY:	DATE:
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FLOWSERVE CORP., PUMP DIVISION, DAYTON, OHIO U.S.A. 3/02

SP1729STD-01

FLOWSERVE

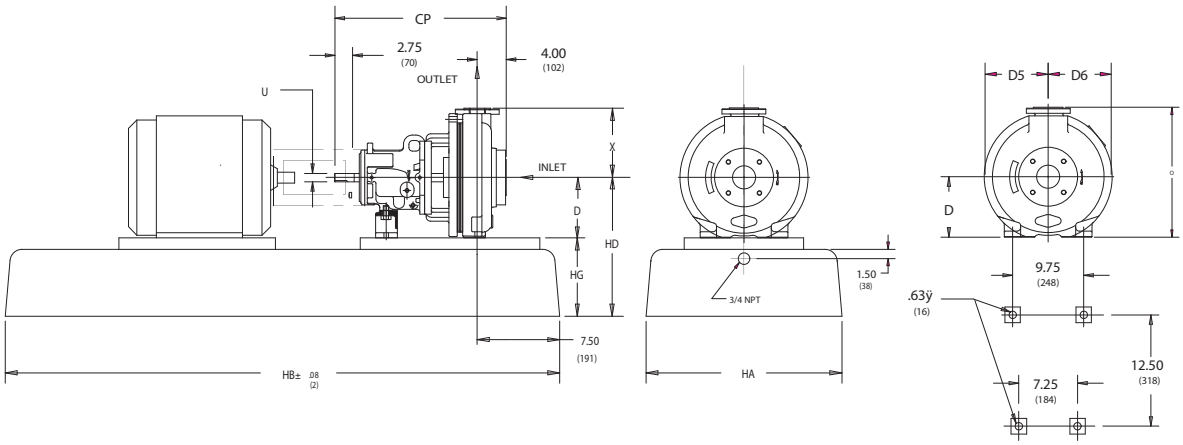
POLYCHEM S- SERIES

GROUP 2 PROCESS PUMP W/ POLYSHIELD BASE

SUPPLEMENT DRAWINGS ATTACHED WHEN LISTED BELOW	AVAILABLE FLANGES (ANSI B16.5)
	CLASS 150 RF STD ☐
	SPECIAL ☐
	BASEPLATE
	SPECIAL ☐

PUMP DIMENSIONS (ANSI B73.1)

	PUMP SIZE INLET x OUTLET - MAX IMP DIA	PUMP WT. lbs(kg)	CP	D	D5	D6	O	U SHAFTÿ	U KEYWAY	X
	PS 2 X 1 - 10	331 (150)	23.5 (597)	8.25 (210)	8.75 (222)	8.75 (222)	16.75 (426)	1.13 (29)	.25 X .13 (6 X 3)	8.50 (216)
	PS 3 X 2 - 10	371 (168)					17.75 (438)			9.50 (241)
	PS 4 X 3 - 10	401 (181)					19.25 (489)			11.00 (279)



BARE PUMP MOUNTING DIMENSIONS

BASEPLATE AND MOUNTING DIMENSIONS

	MAX MOTOR FRAME	HA	HB	HD	HG	WEIGHT lbs(kg)
	132S/M	23.00 (584)	55.00 (1397)	HG + D	14 - 24 BY 1.00 INCR (356 - 610 IN 25.4 INCR)	535 FOR HG=14" +20#/IN FOR OTHER HEIGHTS (242 FOR HG= 356MM +9.1 KG/25.4 MM FOR OTHER HEIGHTS)
	200M/L	23.00 (584	61.00 (1549)	HG + D	14 - 24 BY 1.00 INCR (356 - 610 IN 25.4 INCR)	548 FOR HG=14" +22#/IN FOR OTHER HEIGHTS (249 Kg FOR HG= 254mm +10.0Kg/25.4 mm FOR OTHER HEIGHTS)
	280S/M	29.00 (737)	73.00 (1854)	HG + D	14 - 24 BY 1.00 INCR (356 - 610 IN 25.4 INCR)	804 FOR HG=14" +30#/IN FOR OTHER HEIGHTS (365 Kg FOR HG= 254mm +13.6 Kg/25.4 mm FOR OTHER HEIGHTS)

FOR ACTUAL PART NUMBERS SEE DRAWING D58883A

1. DIMENSIONS IN PARENTHESIS () ARE IN MILLIMETERS.
2. INSTALLATION DIMENSIONS ARE ±1/8"(3) UNLESS OTHERWISE NOTED.
3. "HG" DIM. APPLIES TO THE PUMP PAD HEIGHT.

CUSTOMER		CUSTOMER P.O.	CUSTOMER ITEM No.
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FLOWSERVE CORP., PUMP DIVISION, DAYTON, OHIO U.S.A. 3/02

SP1815STD-01

FLOWSERVE

POLYCHEM - S-SERIES - GROUP II - PROCESS PUMP

(STILT MOUNTED)

SUPPLEMENT DRAWINGS
ATTACHED WHEN LISTED BELOW

AVAILABLE FLANGES (ANSI B16.5)

CLASS 150 RF ☐

SPECIAL _____ ☐

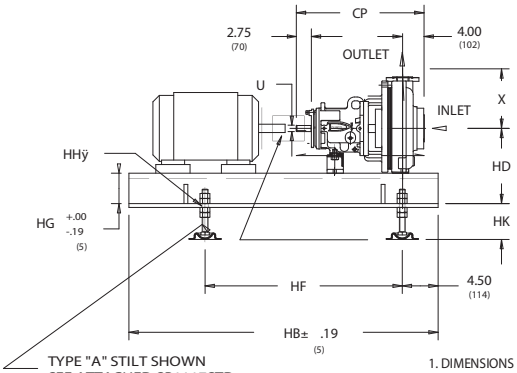
BASEPLATE

STEEL _____ ☐

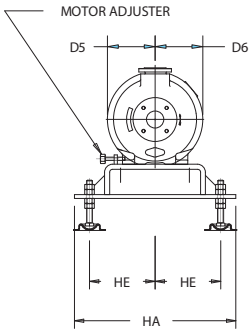
SPECIAL _____ ☐

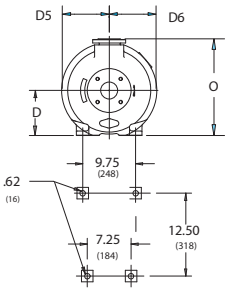
PUMP DIMENSIONS (ANSI B73.1)

PUMP SIZE INLET x OUTLET - MAX IMP DIA	PUMP WT. lbs(kg)	CP	D	D5	D6	O	U SHAFTÿ	U KEYWAY	X
PS 2 X 1 - 10	331	23.5 (597)	8.25 (210)	8.75 (222)	8.75 (222)	16.75 (426)	1.13 (29)	.25 X .13 (6 X 3)	8.50 (216)
PS 3 X 2 - 10	371					17.75 (438)			9.50 (241)
PS 4 X 3 - 10	401					19.25 (489)			11.00 (279)



TYPE "A" STILT SHOWN
SEE ATTACHED SP1117STD
FOR OTHER STILT ARRANGEMENTS





BARE PUMP
MOUNTING
DIMENSIONS

1. DIMENSIONS IN PARENTHESIS () ARE IN MILLIMETERS.
2. INSTALLATION DIMENSIONS ARE ±.13"(3) UNLESS OTHERWISE NOTED.
3. "HG" DIM. APPLIES TO THE LOWER PAD HEIGHT. WITH SOME BASES THIS WILL OCCUR AT PUMP END AND WITH OTHERS AT MOTOR END.

WRITE IN
HEIGHT
REQUIRED

BASEPLATE AND MOUNTING DIMENSIONS

BASE PART NO.	ANSI REF	MTR FRAME	HA	HB	HD	HE	HF	HG	HHÿ	HK	WEIGHT lbs(kg)
DY54251B	245	143T	24.00 (610)	45.00 (1143)	12.00 (305)	9.75 (248)	30.63 (778)	3.75 (95)	.81 (21)		281 (127)
DY54251C		145T									
DY54251D		182T									
DY54251E		184T									
DY54252B	252	184T	27.00 (686)	52.00 (1321)	12.38 (314)	11.25 (286)	32.88 (835)	4.13 (105)			374 (170)
DY54252C		213T									
DY54252D		215T									
DY54253B	258	215T	30.00 (762)	58.00 (1473)	13.00 (330)	12.75 (324)	34.63 (879)	4.75 (121)			478 (217)
DY54253C		254T									
DY54253D		256T					37.13 (943)				
DY54253E		284TS									
DY54253F		284T									
DY54253G		286TS									
DY54253H		286T									
DY54254B	264	286TS	31.00 (787)	64.00 (1626)	13.00 (330)	13.25 (350)	39.63 (1006)	4.75 (121)			612 (278)
DY54254C		286T									
DY54254D		324TS									
DY54254E		324T									

CUSTOMER		CUSTOMER P.O.	CUSTOMER ITEM No.
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FLOWSERVE CORP., ROTATING EQUIPMENT DIV., DAYTON, OHIO U. S. A. 00-08-30

SP1686STD-02

FLOWSERVE

POLYCHEM - S-SERIES - GROUP II - PROCESS PUMP

(STILT MOUNTED)

SUPPLEMENT DRAWINGS
ATTACHED WHEN LISTED BELOW

AVAILABLE FLANGES (ANSI B16.5)

CLASS 150 RF ☐

SPECIAL _____ ☐

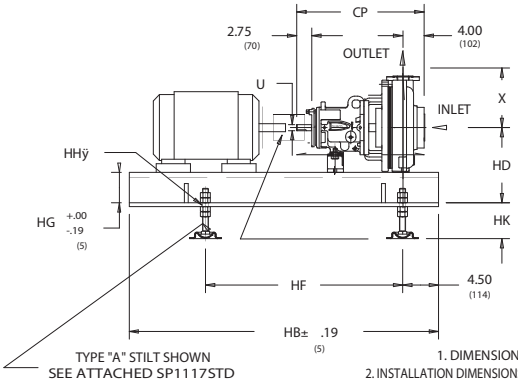
BASEPLATE

STEEL _____ ☐

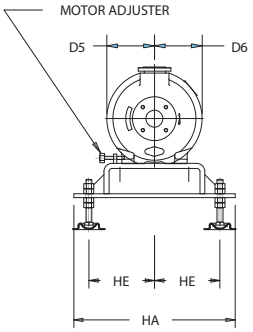
SPECIAL _____ ☐

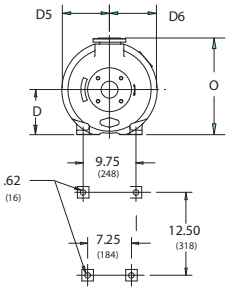
PUMP DIMENSIONS (ANSI B73.1)

PUMP SIZE INLET x OUTLET - MAX IMP DIA	PUMP WT. lbs(kg)	CP	D	D5	D6	O	U SHAFTÿ	U KEYWAY	X
PS 2 X 1 - 10	331	23.5 (597)	8.25 (210)	8.75 (222)	8.75 (222)	16.75 (426)	1.13 (29)	.25 X .13 (6 X 3)	8.50 (216)
PS 3 X 2 - 10	371					17.75 (438)			9.50 (241)
PS 4 X 3 - 10	401					19.25 (489)			11.00 (279)



TYPE "A" STILT SHOWN
SEE ATTACHED SP1117STD
FOR OTHER STILT ARRANGEMENTS





BARE PUMP
MOUNTING
DIMENSIONS

1. DIMENSIONS IN PARENTHESIS () ARE IN MILLIMETERS.
2. INSTALLATION DIMENSIONS ARE ±.13"(3) UNLESS OTHERWISE NOTED.
3. "HG" DIM. APPLIES TO THE LOWER PAD HEIGHT. WITH SOME BASES THIS WILL OCCUR AT PUMP END AND WITH OTHERS AT MOTOR END.

BASEPLATE AND MOUNTING DIMENSIONS

WRITE IN HEIGHT REQUIRED

BASE PART NO.	ANSI REF	MTR FRAME	HA	HB	HD	HE	HF	HG	HHÿ	HK	WEIGHT lbs(kg)
DY54254F	264	326TS	31 (787)	64 (1626)	13 (330)	13.25 (337)	39.63 (1006)	4.75 (121)	.81 (21)		612 (278)
DY54254G		326T									
DY54254H		364TS			13.88 (352)						
DY54254J		364T									
DY54254K		365TS									
DY54254L		365T									
DY54266B	268	365TS	35 (889)	68 (1727)	13.88 (375)	15.25 (387)	42.50 (1080)	4.75 (121)			630 (296)
DY54266C		365T									
DY54266D		404TS			14.88 (378)						
DY54266E		404T									
DY54266F		405TS									
DY54267B	280	405TS	35 (889)	80 (2032)	14.88 (378)	15.25 (387)	42.50 (1080)	4.75 (121)			706 (320)
DY54267C		405T					45.75 (1162)				
DY54267D		444TS			15.88 (303)		42.50 (1080)				
DY54267E		445TS					42.50 (1080)				
DY54267F		447TS					45.75 (1162)				
DY54267G		449TS					45.75 (1162)				

CUSTOMER		CUSTOMER P.O.	CUSTOMER ITEM No.
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FLOWSERVE CORP., ROTATING EQUIPMENT DIV., DAYTON, OHIO U. S. A. 00-08-30

SP1667STD-02

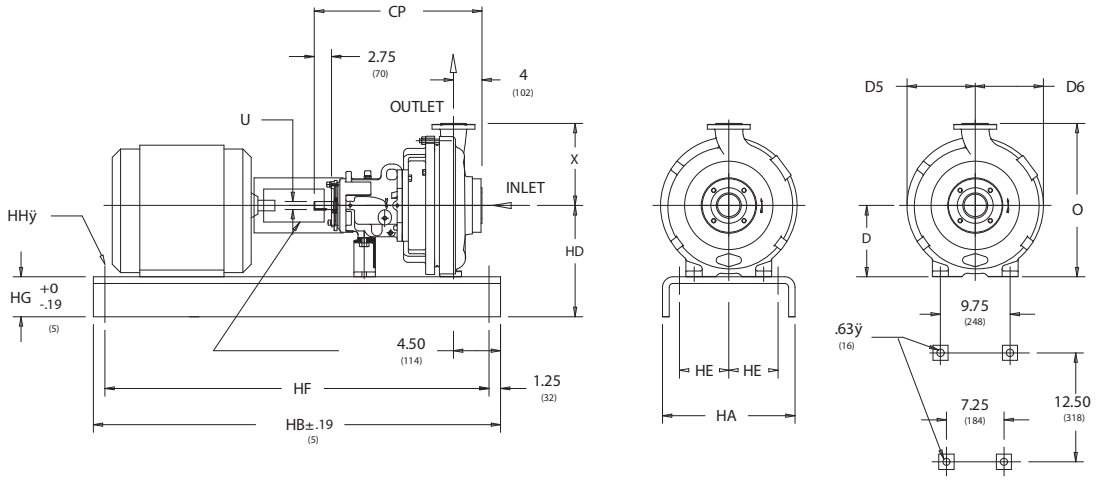
POLYCHEM - S-SERIES - GROUP II - PROCESS PUMP

TYPE 'A" BASE MOUNT

SUPPLEMENT DRAWINGS ATTACHED WHEN LISTED BELOW	AVAILABLE FLANGES (ANSI B16.5)
	CLASS 150 RF ☐
	SPECIAL _____ ☐
	BASEPLATE
	STEEL _____ ☐
	SPECIAL _____ ☐

PUMP DIMENSIONS (ANSI B73.1)

	PUMP SIZE INLET X OUTLET X MAX IMP DIA	PUMP WT lbs(kg)	CP	D	D5	D6	O	U SHAFTÿ	U KEYWAY	X
	PS 3x2-13	420 (191)	23.50 (597)	10 (254)	9.57 (243)	9.57 (243)	21.50 (546)	1.13 (29)	.25 x .13 (6 x 3)	11.50 (292)
	PS 4x3-13	422 (192)			9.57 (243)	9.57 (243)	22.50 (572)			12.50 (318)
	PS 6x4-13HD	484 (220)			10.39 (264)	10.74 (273)	23.50 (597)			13.50 (343)



BARE PUMP MOUNTING DIMENSIONS

BASEPLATE AND MOUNTING DIMENSIONS

	BASE	MAX MOTOR FRAME	HA	HB	HD	HE	HF	HG (NOTE 3)	HHÿ	WEIGHT lbs(kg)
	245	184T	15.00 (381)	45.00 (1143)	13.75 (349)	4.50 (114)	42.50 (1080)	3.75 (95)	.75 (19)	129 (59)
	252	215T	18.00 (457)	52.00 (1321)	14.13 (359)	6 (152)	49.50 (1257)	4.13 (105)		177 (80)
	258	286T	21.00 (533)	58.00 (1473)	14.75 (375)	7.50 (191)	55.50 (1410)	4.75 (121)	1 (25)	234 (106)
	264	365T	22.00 (559)	64.00 (1626)			61.50 (1562)			328 (149)
	268	405TS	26.00 (660)	68.00 (1727)	14.88 (378)	9.50 (241)	65.50 (1664)			409 (186)
	280	449TS		80.00 (2032)	15.88 (403)		77.50 (1969)			481 218)

1. DIMENSIONS IN PARENTHESIS () ARE IN MILLIMETERS.
2. INSTALLATION DIMENSIONS ARE ±.13"(3) UNLESS OTHERWISE NOTED.
3. "HG" DIM. APPLIES TO THE LOWER PAD HEIGHT. WITH SOME BASES THIS WILL OCCUR AT PUMP END AND WITH OTHERS AT MOTOR END.

CUSTOMER		CUSTOMER P.O.	CUSTOMER ITEM No.
DURCO ORDER No.	SERIAL No.	CERTIFIED BY:	DATE:
APPROVAL ☐ ISSUE:	REVIEW ☐ ISSUE:	FINAL ☐ ISSUE:	

FLOWSERVE CORP., PUMP DIV., DAYTON, OHIO U. S. A. 12/12/01

SP1701STD-02

FLOWSERVE

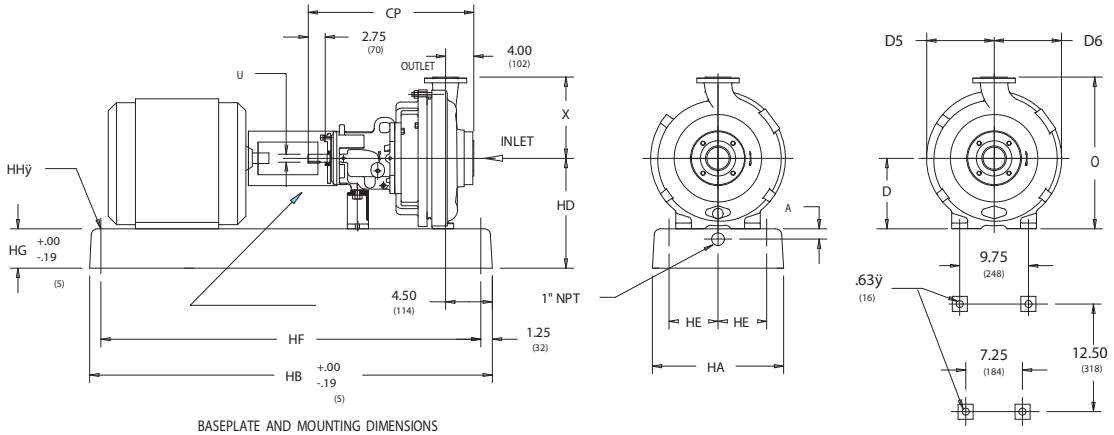
POLYCHEM - S-SERIES - GROUP II - PROCESS PUMP

TYPE 'B" BASE MOUNT

SUPPLEMENT DRAWINGS ATTACHED WHEN LISTED BELOW	AVAILABLE FLANGES (ANSI B16.5)
	CLASS 150 RF ☐
	SPECIAL _____ ☐
	BASEPLATE
	STEEL _____ ☐
	SPECIAL _____ ☐

PUMP DIMENSIONS (ANSI B73.1)

	PUMP SIZE INLET X OUTLET X MAX IMP DIA	PUMP WT lbs(kg)	CP	D	D5	D6	0	U		X
								SHAFTÿ	KEYWAY	
	PS 3x2-13	420 (191)	23.50 (597)	10 (254)	9.57 (243)	9.57 (243)	21.50 (546)	1.13 (29)	.25 x .13 (6 x 3)	11.50 (292)
	PS 4x3-13	422 (192)			9.57 (243)	9.57 (243)	22.50 (572)			12.50 (318)
	PS 6x4-13HD	484 (220)			10.39 (264)	10.74 (273)	23.50 (597)			13.50 (343)



BARE PUMP MOUNTING DIMENSIONS

BASEPLATE AND MOUNTING DIMENSIONS

	BASE	MAX MOTOR FRAME	HA	HB	HD	HE	HF	HG	HHÿ	A	WEIGHT lbs(kg)
	245	184T	13.00 (330)	45.00 (1143)	13.63 (346)	4.50 (114)	42.50 (1080)	3.63 (92)	.75 (19)	1.81 (46)	150 (68)
	252	215T	16.25 (413)	52.00 (1321)	14.00 (356)	6.00 (152)	49.50 (1257)	4.00 (102)	1.00 (25)	2.00 (51)	240 (109)
	258	286T	19.25 (489)	58.00 (1473)		7.50 (191)	55.50 (1410)				315 (143)
	264	365T		64.00 (1626)			61.50 (1562)				350 (158)
	268	405TS	26.00 (660)	68.00 (1727)	14.25 (362)	9.50 (241)	65.50 (1664)	4.25 (108)		2.25 (57)	535 (243)
	280	449TS		80.00 (2032)	15.25 (387)		77.50 (1969)				630 (286)

1. DIMENSIONS IN PARENTHESIS () ARE IN MILLIMETERS.
2. INSTALLATION DIMENSIONS ARE ±.13"(3) UNLESS OTHERWISE NOTED.
3. "HG" DIM. APPLIES TO THE LOWER PAD HEIGHT. WITH SOME BASES THIS WILL OCCUR AT PUMP END AND WITH OTHERS AT MOTOR END.

CUSTOMER		CUSTOMER P.O.	CUSTOMER ITEM No.
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FLOWSERVE CORP., PUMP DIV., DAYTON, OHIO U. S. A. 12/12/01

SP1702STD-02

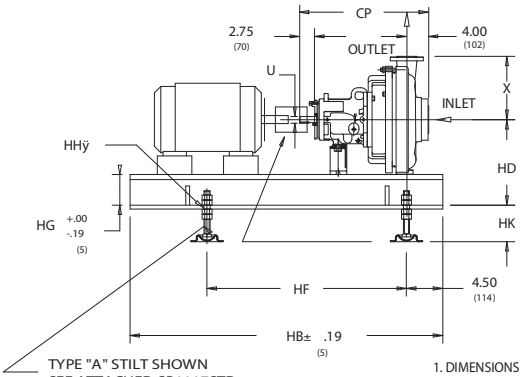
POLYCHEM - S-SERIES - GROUP II - PROCESS PUMP

(STILT MOUNTED)

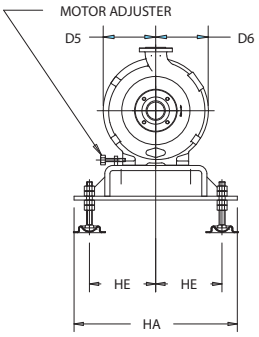
SUPPLEMENT DRAWINGS ATTACHED WHEN LISTED BELOW	AVAILABLE FLANGES (ANSI B16.5)
	CLASS 150 RF ☐
	SPECIAL _____ ☐
	BASEPLATE
	STEEL _____ ☐
	SPECIAL _____ ☐

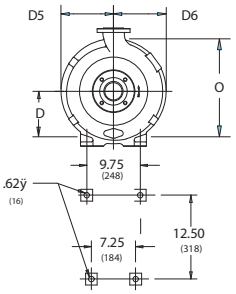
PUMP DIMENSIONS (ANSI B73.1)

PUMP SIZE INLET X OUTLET X MAX IMP DIA	PUMP WT lbs(kg)	CP	D	D5	D6	0	U SHAFTÿ	U KEYWAY	X
PS 3x2-13	420 (191)	23.50 (597)	10 (254)	9.57 (243)	9.57 (243)	21.50 (546)	1.13 (29)	.25 x .13 (6 x 3)	11.50 (292)
PS 4x3-13	422 (192)			9.57 (243)	9.57 (243)	22.50 (572)			12.50 (318)
PS 6x4-13HD	484 (220)			10.39 (264)	10.74 (273)	23.50 (597)			13.50 (343)



TYPE "A" STILT SHOWN
SEE ATTACHED SP1117STD
FOR OTHER STILT ARRANGEMENTS





BARE PUMP MOUNTING DIMENSIONS

1. DIMENSIONS IN PARENTHESIS () ARE IN MILLIMETERS.
2. INSTALLATION DIMENSIONS ARE ±.13"(3) UNLESS OTHERWISE NOTED.
3. "HG" DIM. APPLIES TO THE LOWER PAD HEIGHT. WITH SOME BASES THIS WILL OCCUR AT PUMP END AND WITH OTHERS AT MOTOR END.

WRITE IN HEIGHT REQUIRED

BASEPLATE AND MOUNTING DIMENSIONS

BASE PART NO.	ANSI REF	MTR FRAME	HA	HB	HD	HE	HF	HG	HHÿ	HK	WEIGHT lbs(kg)
DY54251B	245	143T	24.00 (610)	45.00 (1143)	13.75 (349)	9.75 (248)	30.63 (778)	3.75 (95)	.81 (21)		281 (127)
DY54251C		145T									
DY54251D		182T									
DY54251E		184T									
DY54252B	252	184T	27.00 (686)	52.00 (1321)	14.13 (359)	11.25 (286)	32.88 (835)	4.13 (105)			374 (170)
DY54252C		213T									
DY54252D		215T									
DY54253B	258	215T	30.00 (762)	58.00 (1473)	14.75 (375)	12.75 (324)	34.63 (879)	4.75 (121)			478 (217)
DY54253C		254T									
DY54253D		256T									
DY54253E		284TS					37.13 (943)				
DY54253F		284T									
DY54253G		286TS									
DY54253H		286T									
DY54254B	264	286TS	31.00 (787)	64.00 (1626)	14.75 (375)	13.25 (350)	39.63 (1006)	4.75 (121)			612 (278)
DY54254C		286T									
DY54254D		324TS									
DY54254E		324T									

CUSTOMER	CUSTOMER P.O.	CUSTOMER ITEM No.
DURCO ORDER No.	SERIAL No.	CERTIFIED BY: / DATE:
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FLOWSERVE CORP., PUMP DIV., DAYTON, OHIO U. S. A. 12/12/01

SP1703STD-02

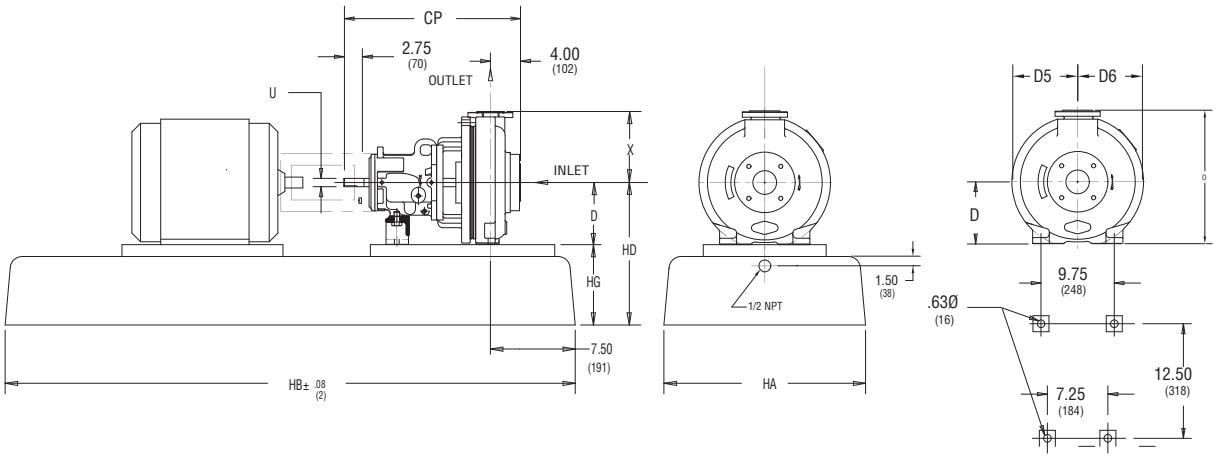
FLOWSERVE

POLYCHEM S- SERIES
GROUP 2 PROCESS PUMP W/ POLYSHIELD BASE

SUPPLEMENT DRAWINGS ATTACHED WHEN LISTED BELOW	AVAILABLE FLANGES (ANSI B16.5)
_____	CLASS 150 RF STD ☐
_____	SPECIAL _____ ☐
_____	
_____	BASEPLATE
_____	SPECIAL _____ ☐

PUMP DIMENSIONS (ANSI B73.1)

	PUMP SIZE INLET X OUTLET X MAX IMP DIA	PUMP WT lbs(kg)	CP	D	D5	D6	0	U		X
								SHAFTØ	KEYWAY	
	PS 3x2-13	420 (191)	23.50 (597)	10 (254)	9.57 (243)	9.57 (243)	21.50 (546)	1.13 (29)	.25 x .13 (6 x 3)	11.50 (292)
	PS 4x3-13	422 (192)			9.57 (243)	9.57 (243)	22.50 (572)			12.50 (318)
	PS 6x4-13HD	484 (220)			10.39 (264)	10.74 (273)	23.50 (597)			13.50 (343)



BARE PUMP MOUNTING DIMENSIONS

BASEPLATE AND MOUNTING DIMENSIONS

	MAX MOTOR FRAME	HA	HB	HD	HG	WEIGHT lbs(kg)
	215T	23.00 (584)	55.00 (1397)	HG + D	14 - 24 BY 1.00 INCR (356 - 610 IN 25.4 INCR)	535 FOR HG=14" +20#/IN FOR OTHER HEIGHTS (242 FOR HG= 356MM +9.1 KG/25.4 MM FOR OTHER HEIGHTS)
	326TS	23.00 (584	61.00 (1549)	HG + D	14 - 24 BY 1.00 INCR (356 - 610 IN 25.4 INCR)	548 FOR HG=14" +22#/IN FOR OTHER HEIGHTS (249 Kg FOR HG= 254mm +10.0Kg/25.4 mm FOR OTHER HEIGHTS)
	445TS	29.00 (737)	73.00 (1854)	HG + D	14 - 24 BY 1.00 INCR (356 - 610 IN 25.4 INCR)	804 FOR HG=14" +30#/IN FOR OTHER HEIGHTS (365 Kg FOR HG= 254mm +13.6 Kg/25.4 mm FOR OTHER HEIGHTS)

FOR ACTUAL PART NUMBERS SEE DRAWING D58857A

1. DIMENSIONS IN PARENTHESIS () ARE IN MILLIMETERS.
2. INSTALLATION DIMENSIONS ARE ±1/8"(3) UNLESS OTHERWISE NOTED.
3. "HG" DIM. APPLIES TO THE PUMP PAD HEIGHT.

CUSTOMER		CUSTOMER P.O.	CUSTOMER ITEM No.
DURCO ORDER No.	SERIAL No.	CERTIFIED BY:	DATE:
APPROVAL ☐ ISSUE: __	REVIEW ☐ ISSUE: __	FINAL ☐ ISSUE: __	

FLOWSERVE CORP., PUMP DIVISION, DAYTON, OHIO U.S.A. 3/02 SP1735STD-01

FLOWSERVE

POLYCHEM - S-SERIES - GROUP II - PROCESS PUMP

(STILT MOUNTED)

SUPPLEMENT DRAWINGS
ATTACHED WHEN LISTED BELOW

AVAILABLE FLANGES (ANSI B16.5)

CLASS 150 RF ☐

SPECIAL ☐

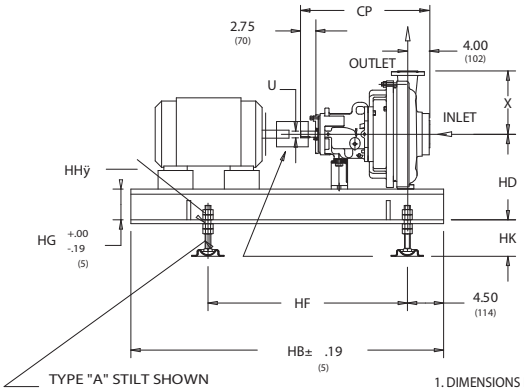
BASEPLATE

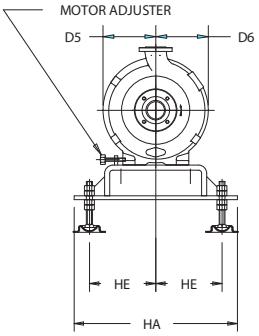
STEEL ☐

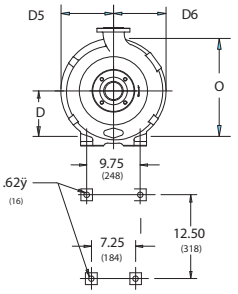
SPECIAL ☐

PUMP DIMENSIONS (ANSI B73.1)

PUMP SIZE (INLET X OUTLET X MAX IMP DIA)	PUMP WT lbs(kg)	CP	D	D5	D6	O	U SHAFTÿ	U KEYWAY	X
PS 3x2-13	420 (191)	23.50 (597)	10 (254)	9.57 (243)	9.57 (243)	21.50 (546)	1.13 (29)	.25 x .13 (6 x 3)	11.50 (292)
PS 4x3-13	422 (192)			9.57 (243)	9.57 (243)	22.50 (572)			12.50 (318)
PS 6x4-13HD	484 (220)			10.39 (264)	10.74 (273)	23.50 (597)			13.50 (343)







BARE PUMP MOUNTING DIMENSIONS

TYPE "A" STILT SHOWN
SEE ATTACHED SP1117STD
FOR OTHER STILT ARRANGEMENTS

1. DIMENSIONS IN PARENTHESIS () ARE IN MILLIMETERS.
2. INSTALLATION DIMENSIONS ARE ±.13"(3) UNLESS OTHERWISE NOTED.
3. "HG" DIM. APPLIES TO THE LOWER PAD HEIGHT. WITH SOME BASES THIS WILL OCCUR AT PUMP END AND WITH OTHERS AT MOTOR END.

BASEPLATE AND MOUNTING DIMENSIONS

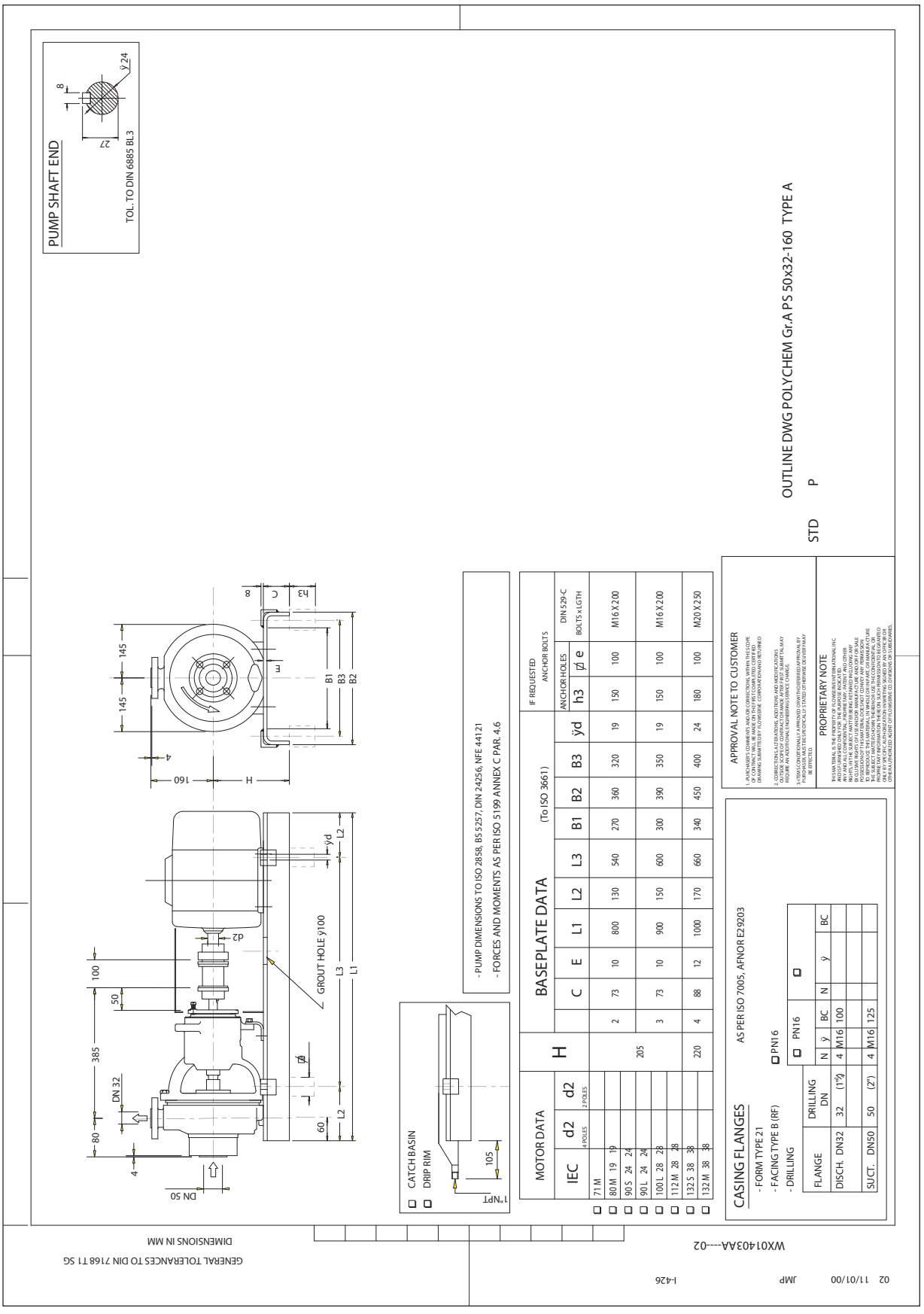
WRITE IN HEIGHT REQUIRED

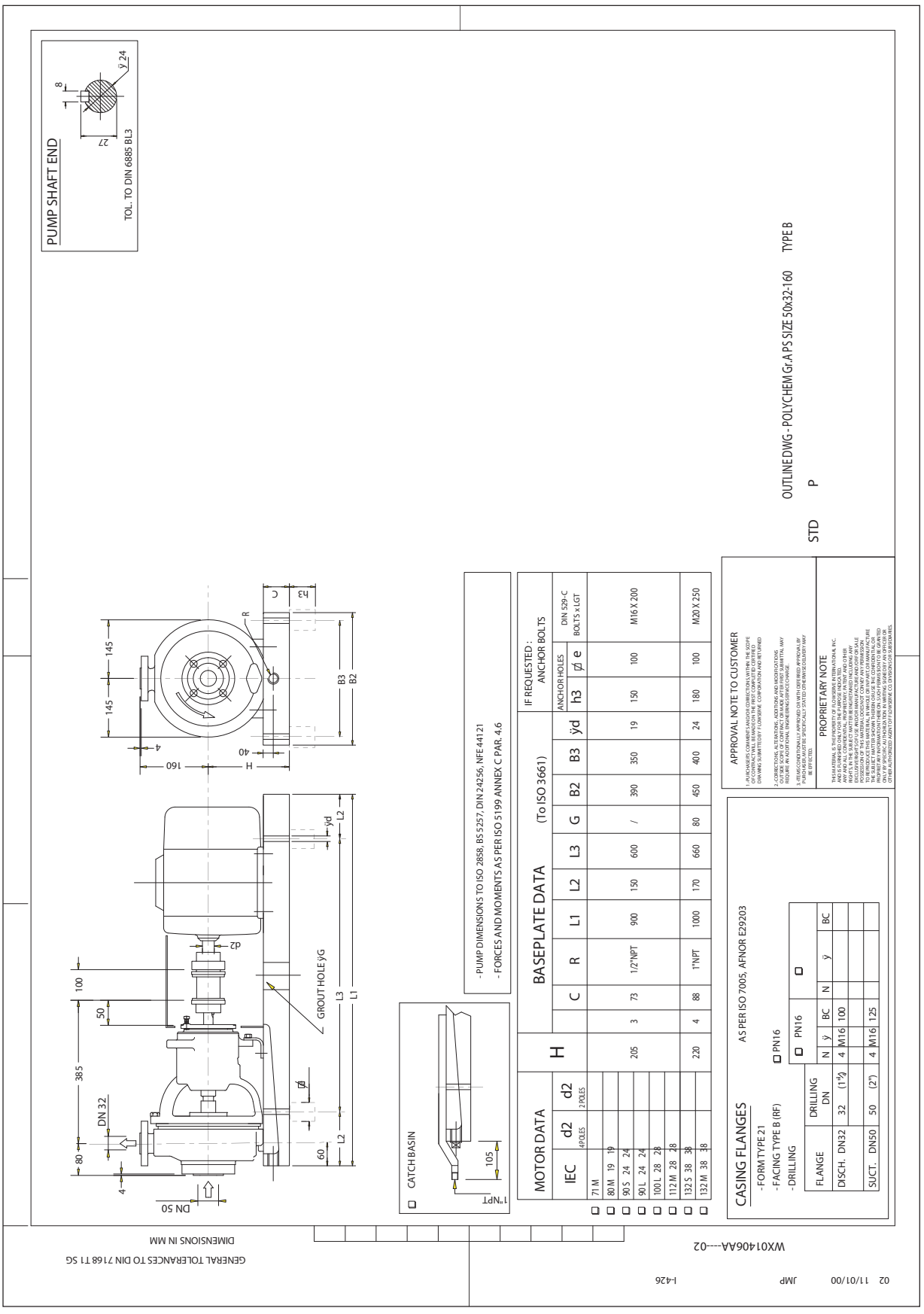
BASE PART NO.	ANSI REF	MTR FRAME	HA	HB	HD	HE	HF	HG	HHÿ	HK	WEIGHT lbs(kg)
DY54254F	264	326TS	31.00 (787)	64.00 (1626)	13.75 (375)	13.25 (337)	39.63 (1006)	4.75 (121)	.81 (21)		612 (278)
DY54254G		326T									
DY54254H		364TS									
DY54254J		364T									
DY54254K		365TS									
DY54254L		365T									
DY54266B	268	365TS	35.00 (889)	68.00 (1727)	14.75 (375)	15.25 (387)	42.50 (1080)	4.75 (121)			630 (296)
DY54266C		365T									
DY54266D		404TS			14.88 (378)						
DY54266E		404T									
DY54266F		405TS									
DY54267B	280	405TS	35.00 (889)	80.00 (2032)	14.88 (378)	15.25 (387)	42.50 (1080)	4.75 (121)			706 (320)
DY54267C		405T					45.75 (1162)				
DY54267D		444TS			15.88 (403)		42.50 (1080)				
DY54267E		445TS					42.50 (1080)				
DY54267F		447TS					45.75 (1162)				
DY54267G		449TS					45.75 (1162)				

CUSTOMER	CUSTOMER P.O.	CUSTOMER ITEM No.
DURCO ORDER No.	SERIAL No.	CERTIFIED BY: / DATE:
APPROVAL ☐ ISSUE:	REVIEW ☐ ISSUE:	FINAL ☐ ISSUE:

FLOWSERVE CORP., PUMP DIV., DAYTON, OHIO U. S. A. 12/12/01

SP1704STD-02


OUTLINE DWG POLYCHEM Gr.A PS 50x32-160 TYPE A
STD
P
PUMP SHAFT END
TOL. TO DIN 6885 BL3
- PUMP DIMENSIONS TO ISO 2858, BS 5257, DIN 24256, NFE 44121
- FORCES AND MOMENTS AS PER ISO 5199 ANNEX C PAR. 4.6
BASEPLATE DATA (To ISO 3661)
MOTOR DATA
CASING FLANGES
AS PER ISO 7005, AFNOR E29203
APPROVAL NOTE TO CUSTOMER
PROPRIETARY NOTE
CATCH BASIN
DRIP RIM
GROUT HOLE ÿ100
DN 32
DN 50
GENERAL TOLERANCES TO DIN 7168 T1 SG
DIMENSIONS IN MM
WX01403AA----02
02 11/01/00 JMP

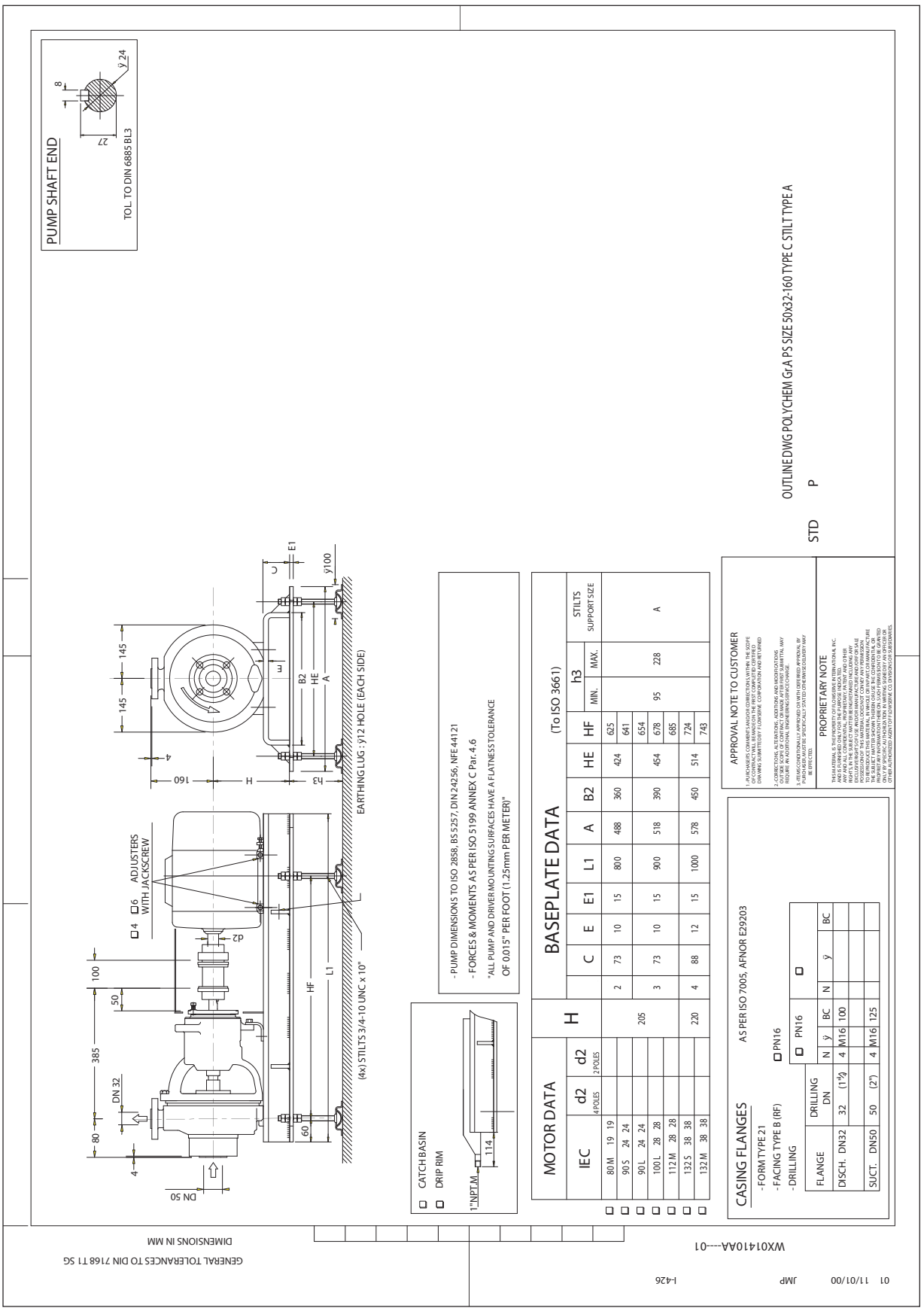


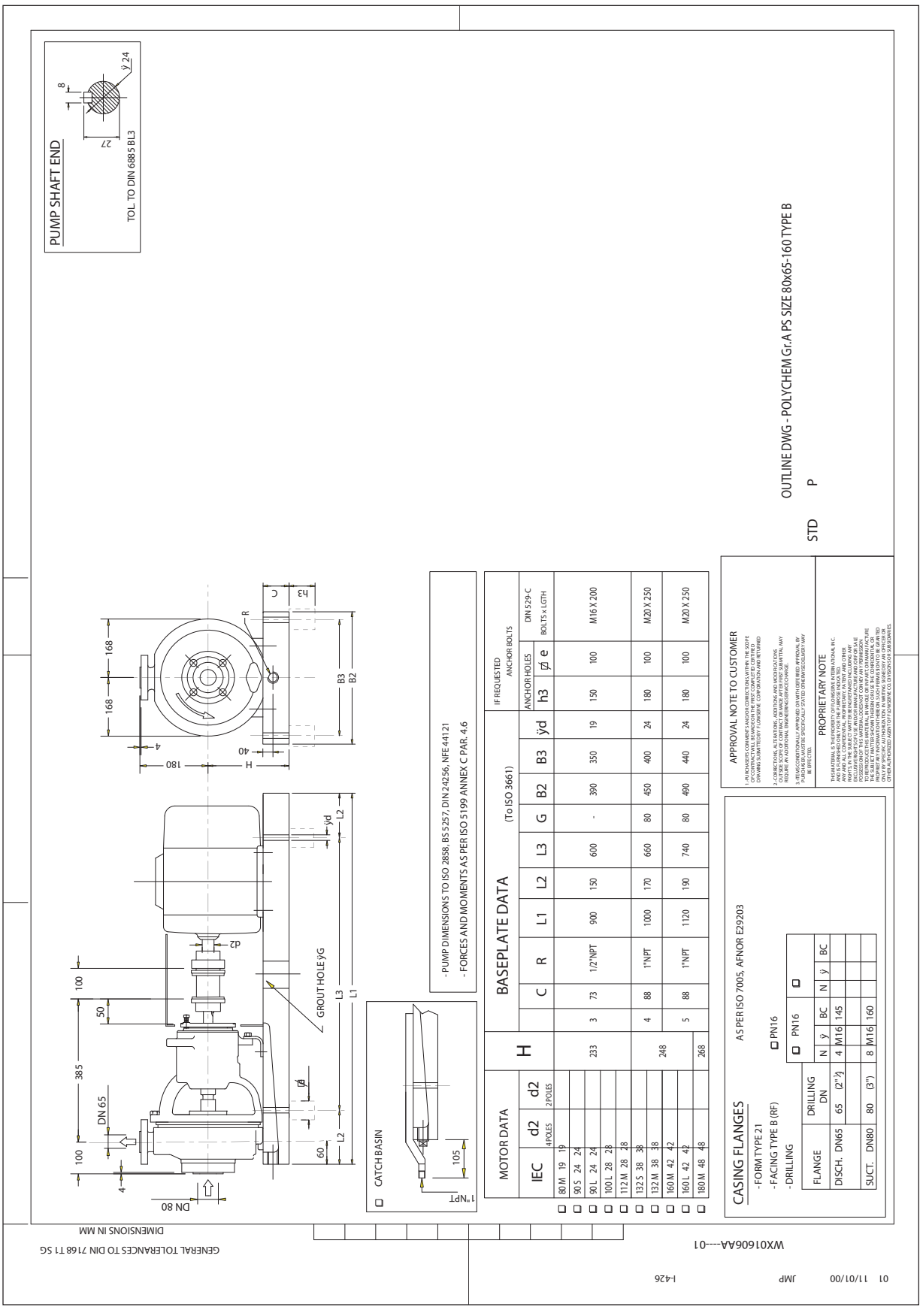
MOTOR DATA IEC	d2 4POLES	d2 2POLES	H	C	R	L1	L2	L3	G	B2	B3	⌀d	ANCHOR HOLES h3	⌀ e	DIN 529-C BOLTS x LGT
71 M															
80 M	19	19													
90 S	24	24	205	3	1/2"NPT	900	150	600	/	390	350	19	150	100	M16 X 200
90 L	24	24													
100 L	28	28													
112 M	28	28													
132 S	38	38	220	4	1"NPT	1000	170	660	80	450	400	24	180	100	M20 X 250
132 M	38	38													

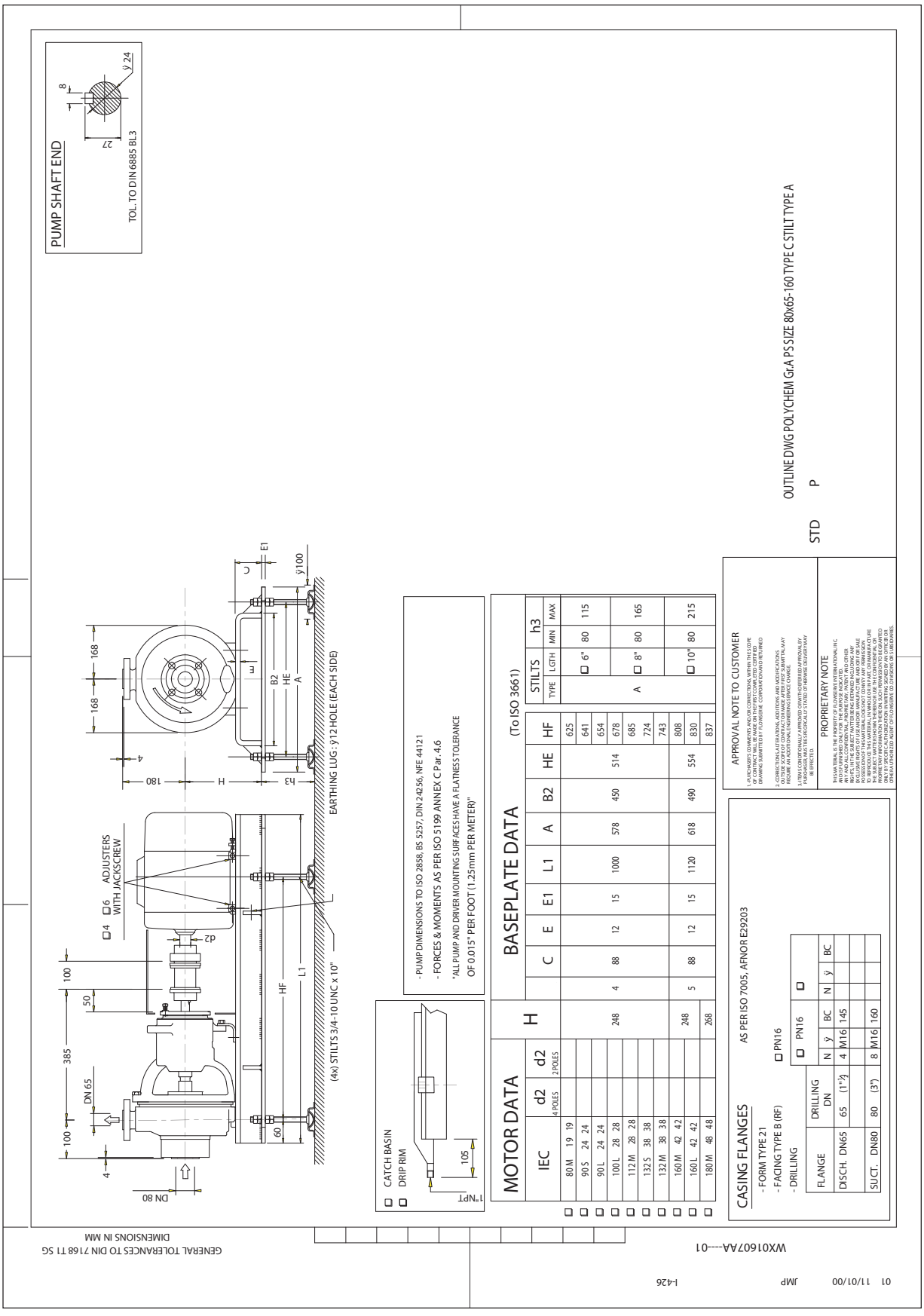
IF REQUESTED : ANCHOR BOLTS

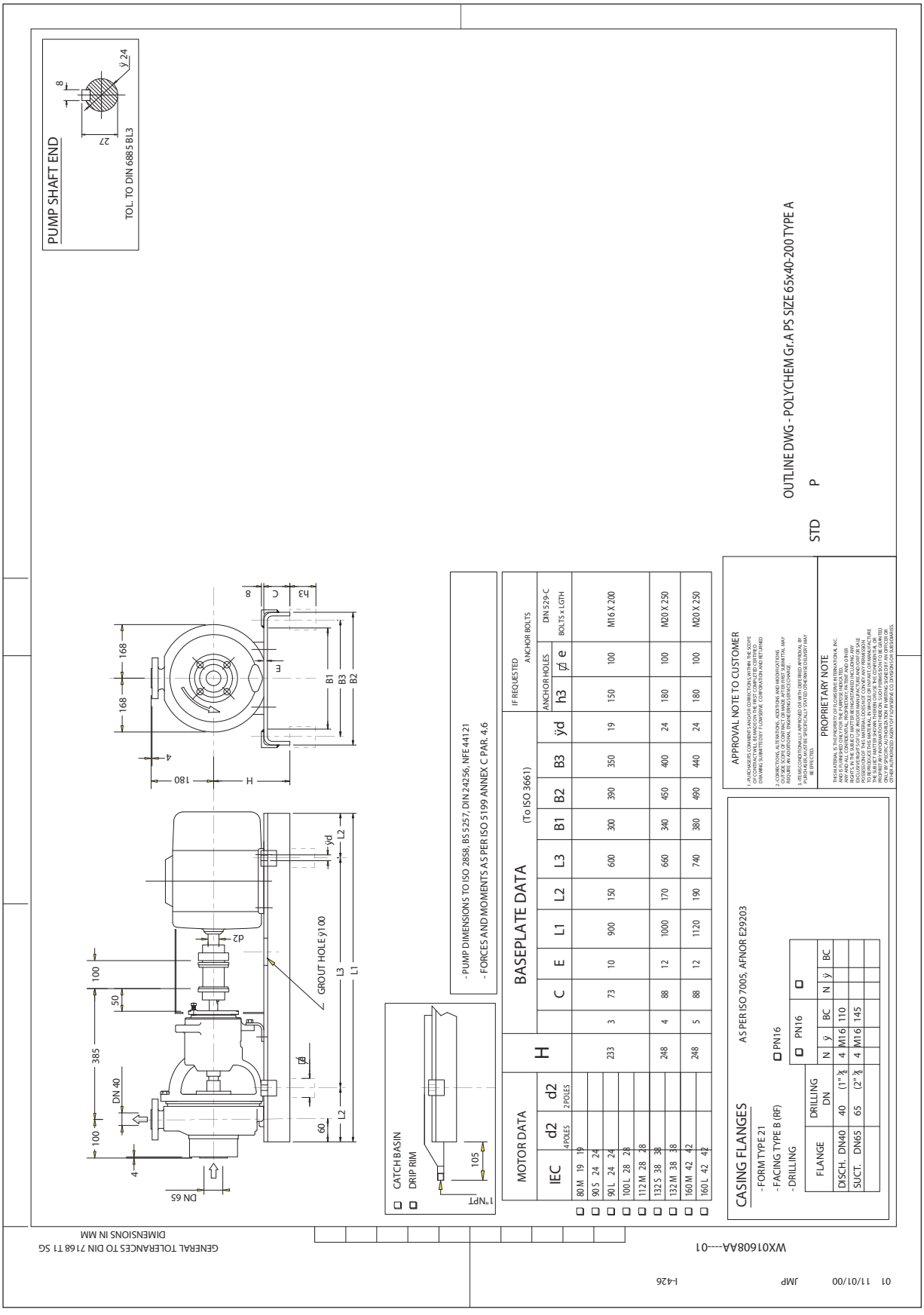
BASEPLATE DATA (To ISO 3661)

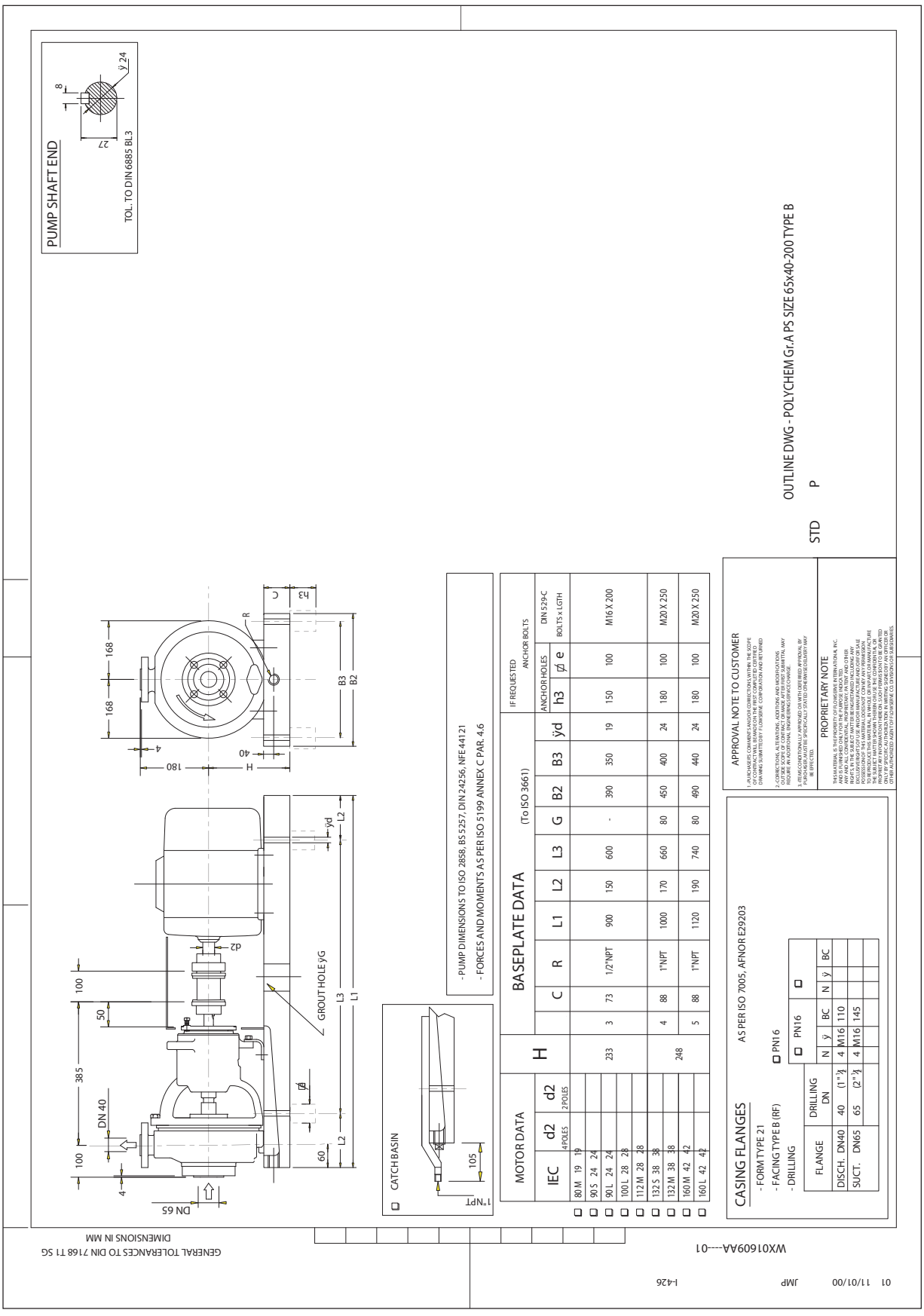
FLANGE	DRILLING DN	N	⌀	BC	N	⌀	BC
DISCH.	DN32	32 (1"¼)	4	M16	100		
SUCT.	DN50	50 (2")	4	M16	125		

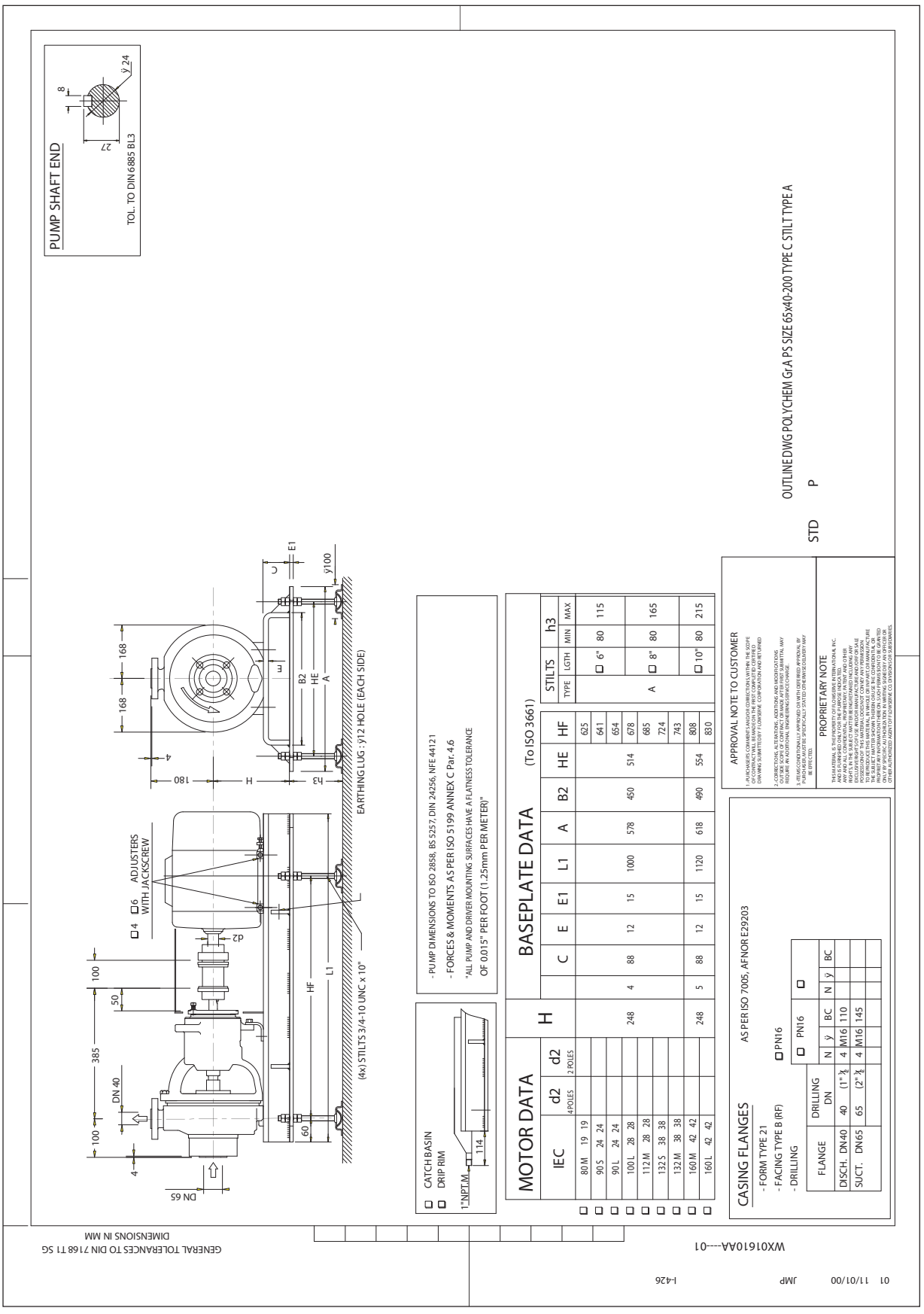

PUMP SHAFT END
TOL. TO DIN 6885 BL3
OUTLINE DWG POLYCHEM Gr.A PS SIZE 50x32-160 TYPE C STILT TYPE A
STD
P
APPROVAL NOTE TO CUSTOMER
PROPRIETARY NOTE
BASEPLATE DATA
(To ISO 3661)
MOTOR DATA
CASING FLANGES
AS PER ISO 7005, AFNOR E29203
- FORM TYPE 21
- FACING TYPE B (RF)
- DRILLING
PN16
- PUMP DIMENSIONS TO ISO 2858, BS 5257, DIN 24256, NFE 44121
- FORCES & MOMENTS AS PER ISO 5199 ANNEX C Par. 4.6
"ALL PUMP AND DRIVER MOUNTING SURFACES HAVE A FLATNESS TOLERANCE OF 0.015" PER FOOT (1.25mm PER METER)"
EARTHING LUG : ŷ12 HOLE (EACH SIDE)
(4x) STILTS 3/4-10 UNC x 10"
ADJUSTERS WITH JACKSCREW
CATCH BASIN
DRIP RIM
DN 50
DN 32
GENERAL TOLERANCES TO DIN 7168 T1 SG
DIMENSIONS IN MM
WX01410AA----01
JMP
I-426
01 11/01/00

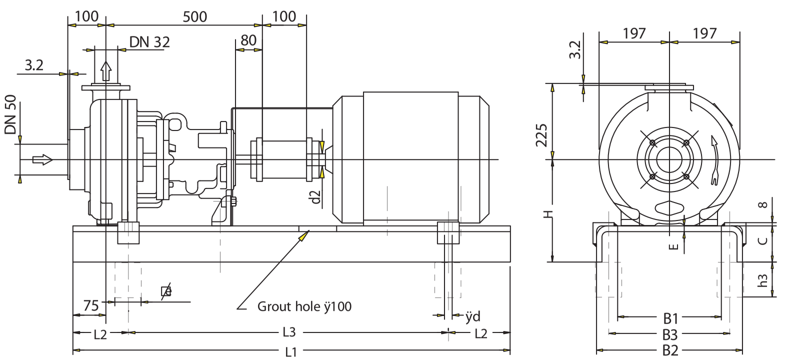

OUTLINE DWG - POLYCHEM Gr.A PS SIZE 80x65-160 TYPE B
STD
P
PUMP SHAFT END
TOL. TO DIN 6885 BL3
- PUMP DIMENSIONS TO ISO 2858, BS 5257, DIN 24256, NFE 44121
- FORCES AND MOMENTS AS PER ISO 5199 ANNEX C PAR. 4.6
BASEPLATE DATA (To ISO 3661)
MOTOR DATA
IEC
d2 4POLES
d2 2POLES
H
C
R
L1
L2
L3
G
B2
B3
IF REQUESTED ANCHOR BOLTS
ANCHOR HOLES
yd
h3
ø e
DIN 529-C BOLTS x LGTH
80 M 19 19 233 3 73 1/2"NPT 900 150 600 - 390 350 19 150 100 M16 X 200
90 S 24 24
90 L 24 24
100 L 28 28
112 M 28 28
132 S 38 38 248 4 88 1"NPT 1000 170 660 80 450 400 24 180 100 M20 X 250
132 M 38 38
160 M 42 42
160 L 42 42 268 5 88 1"NPT 1120 190 740 80 490 440 24 180 100 M20 X 250
180 M 48 48
CASING FLANGES
AS PER ISO 7005, AFNOR E29203
- FORM TYPE 21
- FACING TYPE B (RF)
- DRILLING
PN16
PN16
FLANGE
DRILLING DN
N
y
BC
N
y
BC
DISCH. DN65 65 (2"½) 4 M16 145
SUCT. DN80 80 (3") 8 M16 160
APPROVAL NOTE TO CUSTOMER
PROPRIETARY NOTE
CATCH BASIN
DN 80
DN 65
GROUT HOLE yG
GENERAL TOLERANCES TO DIN 7168 T1 SG
DIMENSIONS IN MM
WX01606AA----01
01 11/01/00 JMP I-426


OUTLINE DWG POLYCHEM Gr.A PS SIZE 80x65-160 TYPE C STILT TYPE A
STD P
PUMP SHAFT END
TOL. TO DIN 6885 BL3
APPROVAL NOTE TO CUSTOMER
PROPRIETARY NOTE
- PUMP DIMENSIONS TO ISO 2858, BS 5257, DIN 24256, NFE 44121
- FORCES & MOMENTS AS PER ISO 5199 ANNEX C Par. 4.6
"ALL PUMP AND DRIVER MOUNTING SURFACES HAVE A FLATNESS TOLERANCE OF 0.015" PER FOOT (1.25mm PER METER)"
BASEPLATE DATA (To ISO 3661)
MOTOR DATA
CASING FLANGES
- FORM TYPE 21
- FACING TYPE B (RF)
- DRILLING
AS PER ISO 7005, AFNOR E29203
PN16
ADJUSTERS WITH JACKSCREW
(4x) STILTS 3/4 - 10 UNC x 10"
EARTHING LUG : ŷ12 HOLE (EACH SIDE)
CATCH BASIN
DRIP RIM
DN 80
GENERAL TOLERANCES TO DIN 7168 T1 SG
DIMENSIONS IN MM
WX01607AA----01
01 11/01/00 JMP I-426


PUMP SHAFT END
TOL. TO DIN 6885 BL3
OUTLINE DWG - POLYCHEM Gr.A PS SIZE 65x40-200 TYPE A
STD
P
- PUMP DIMENSIONS TO ISO 2858, BS 5257, DIN 24256, NFE 44121
- FORCES AND MOMENTS AS PER ISO 5199 ANNEX C PAR. 4.6
BASEPLATE DATA (To ISO 3661)
MOTOR DATA
IEC
d2 4POLES
d2 2POLES
H
C
E
L1
L2
L3
B1
B2
B3
ÿd
IF REQUESTED ANCHOR BOLTS
ANCHOR HOLES
h3
ø e
DIN 529-C BOLTS x LGTH
80 M 19 19
90 S 24 24
90 L 24 24
100 L 28 28
112 M 28 28
132 S 38 38
132 M 38 38
160 M 42 42
160 L 42 42
233 3 73 10 900 150 600 300 390 350 19 150 100 M16 X 200
248 4 88 12 1000 170 660 340 450 400 24 180 100 M20 X 250
248 5 88 12 1120 190 740 380 490 440 24 180 100 M20 X 250
CASING FLANGES
AS PER ISO 7005, AFNOR E29203
- FORM TYPE 21
- FACING TYPE B (RF)
- DRILLING
PN16
PN16
FLANGE
DRILLING DN
N ÿ BC N ÿ BC
DISCH. DN40 40 (1" ½) 4 M16 110
SUCT. DN65 65 (2" ½) 4 M16 145
CATCH BASIN
DRIP RIM
1"NPT
105
APPROVAL NOTE TO CUSTOMER
PROPRIETARY NOTE
GENERAL TOLERANCES TO DIN 7168 T1 SG
DIMENSIONS IN MM
WX01608AA----01
01 11/01/00 JMP I-426


OUTLINE DWG - POLYCHEM Gr.A PS SIZE 65x40-200 TYPE B
STD
P
PUMP SHAFT END
TOL. TO DIN 6885 BL3
- PUMP DIMENSIONS TO ISO 2858, BS 5257, DIN 24256, NFE 44121
- FORCES AND MOMENTS AS PER ISO 5199 ANNEX C PAR. 4.6
CATCH BASIN
BASEPLATE DATA (To ISO 3661)
IF REQUESTED ANCHOR BOLTS
MOTOR DATA
IEC d2 d2
4 POLES 2 POLES
H C R L1 L2 L3 G B2 B3 ÿd ANCHOR HOLES h3 ø e DIN 529-C BOLTS x LGTH
80 M 19 19
90 S 24 24
90 L 24 24
100 L 28 28
112 M 28 28
132 S 38 38
132 M 38 38
160 M 42 42
160 L 42 42
233 3 73 1/2"NPT 900 150 600 - 390 350 19 150 100 M16 X 200
248 4 88 1"NPT 1000 170 660 80 450 400 24 180 100 M20 X 250
5 88 1"NPT 1120 190 740 80 490 440 24 180 100 M20 X 250
CASING FLANGES
AS PER ISO 7005, AFNOR E29203
- FORM TYPE 21
- FACING TYPE B (RF)
- DRILLING
PN16
PN16
FLANGE DRILLING DN N ÿ BC N ÿ BC
DISCH. DN40 40 (1"½ 4 M16 110
SUCT. DN65 65 (2"½ 4 M16 145
APPROVAL NOTE TO CUSTOMER
PROPRIETARY NOTE
GROUT HOLE ÿG
DN 40
DN 65
1"NPT
GENERAL TOLERANCES TO DIN 7168 T1 SG
DIMENSIONS IN MM
WX01609AA----01
JMP
I-426
01 11/01/00

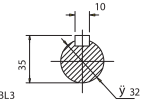

OUTLINE DWG POLYCHEM Gr.A PS SIZE 65x40-200 TYPE C STILT TYPE A
STD
P
PUMP SHAFT END
TOL. TO DIN 6885 BL3
- PUMP DIMENSIONS TO ISO 2858, BS 5257, DIN 24256, NFE 44121
- FORCES & MOMENTS AS PER ISO 5199 ANNEX C Par. 4.6
"ALL PUMP AND DRIVER MOUNTING SURFACES HAVE A FLATNESS TOLERANCE OF 0.015" PER FOOT (1.25mm PER METER)"
EARTHING LUG : ŷ12 HOLE (EACH SIDE)
(4x) STILTS 3/4-10 UNC x 10"
ADJUSTERS WITH JACKSCREW
CATCH BASIN
DRIP RIM
1"NPT M
MOTOR DATA
BASEPLATE DATA (To ISO 3661)
STILTS
CASING FLANGES
AS PER ISO 7005, AFNOR E29203
- FORM TYPE 21
- FACING TYPE B (RF)
- DRILLING
PN16
APPROVAL NOTE TO CUSTOMER
PROPRIETARY NOTE
GENERAL TOLERANCES TO DIN 7168 T1 SG
DIMENSIONS IN MM
WX01610AA----01
JMP
I-426
01 11/01/00



GENERAL TOLERANCES TO DIN 7168 T1 SG

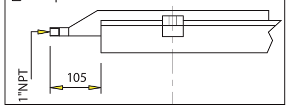
DIMENSIONS IN MM

PUMP SHAFT END



TOL. TO DIN 6885 BL3

- ☐ Catch basin
- ☐ Drip rim



- Pump dimensions to ISO 2858, BS 5257, DIN 24256, NFE 44121
- Forces and Moments as per ISO 5199 Annex C Par. 4.6

MOTOR DATA			
IEC	d2 4poles	d2 2poles	H
☐ 80 M	19	19	268
☐ 90 S	24	24	
☐ 90 L	24	24	
☐ 100 L	28	28	
☐ 112 M	28	28	
☐ 132 S	38	38	
☐ 132 M	38	38	
☐ 160 M	42	42	
☐ 160 L	42	42	
☐ 180 M	48	48	
☐ 180 L	48	48	
☐ 200 L	55	55	310

BASEPLATE DATA (To ISO 3661)										If requested: Anchor holes		Anchor bolts DIN 529-C
SIZE	C	E	L1	L2	L3	B1	B2	B3	ÿd	h3	∅ e	Bolts x lgt
4	88	12	1000	170	660	340	450	400	24	180	100	M20 X 250
5	88	12	1120	190	740	380	490	440	24	180	100	M20 X 250
6	88	12	1250	205	840	430	540	490	24	180	100	M20 X 250
7	110	15	1400	230	940	480	610	550	28	200	100	M24 X 320

CASING FLANGES

As per ISO 7005, AFNOR E29203

- Form Type 21 PN25
- Facing Type B (RF) PN25
- Drilling

Flange		Drilling DN(1"º)	☐ PN16			☐			☐		
			N	ÿ	BC	N	ÿ	BC	N	ÿ	BC
Disch.	DN32	32	4	M16	100						
Suct.	DN50	50 (2")	4	M16	125						

APPROVAL NOTE TO CUSTOMER

1.-PURCHASER'S COMMENTS AND/OR CORRECTIONS, WITHIN THE SCOPE OF CONTRACT WILL BE MADE ON THE FIRST COMPLETED CERTIFIED DRAWING SUBMITTED BY FLOWSERVE CORPORATION AND RETURNED

2.-CORRECTIONS, ALTERATIONS, ADDITIONS AND MODIFICATIONS OUTSIDE SCOPE OF CONTRACT OR MADE AFTER FIRST SUBMITTAL MAY REQUIRE AN ADDITIONAL ENGINEERING SERVICE CHARGE.

3.-ITEMS CONDITIONALLY APPROVED OR WITH DEFERRED APPROVAL BY PURCHASER, MUST BE SPECIFICALLY STATED OTHERWISE DELIVERY MAY BE EFFECTED.

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CUSTOMER:
ORDER No:
PROJECT:
LOCATION:
ITEM No | SERIAL No | FLOWSERVE REF.:

SUBJECT: OUTLINE DRAWING - POLYCHEM Gr B PS 50x32 - 250 TYPE A

STD | P

DO NOT SCALE

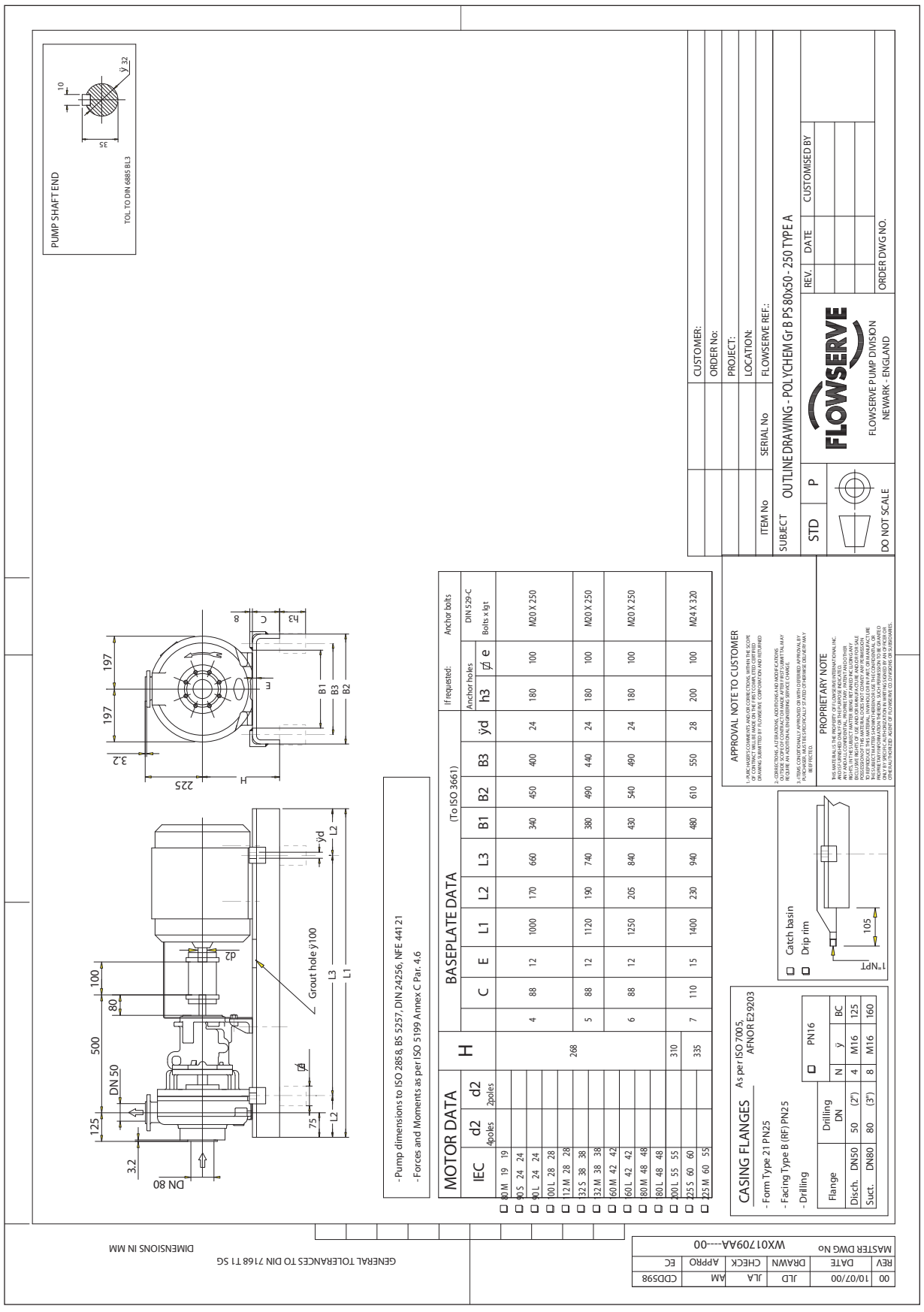
FLOWSERVE
FLOWSERVE PUMP DIVISION
NEWARK - ENGLAND

REV.	DATE	CUSTOMISED BY

ORDER DWG NO.

REV	DATE	DRAWN	CHECK	APPRO	EC
00	18/07/00	JLD	JLA	AM	CDD598

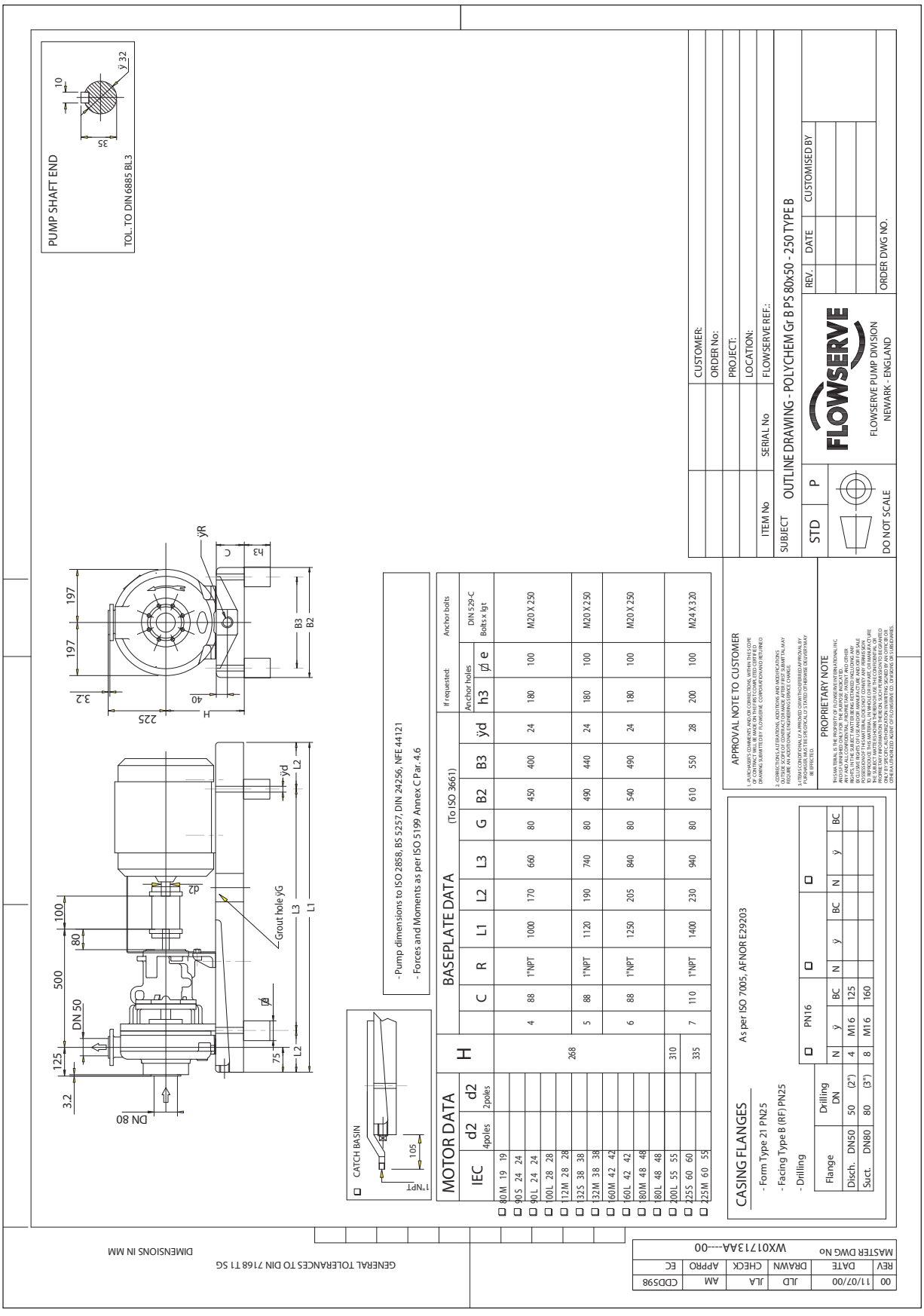
MASTER DWG No: WX01708AA----00

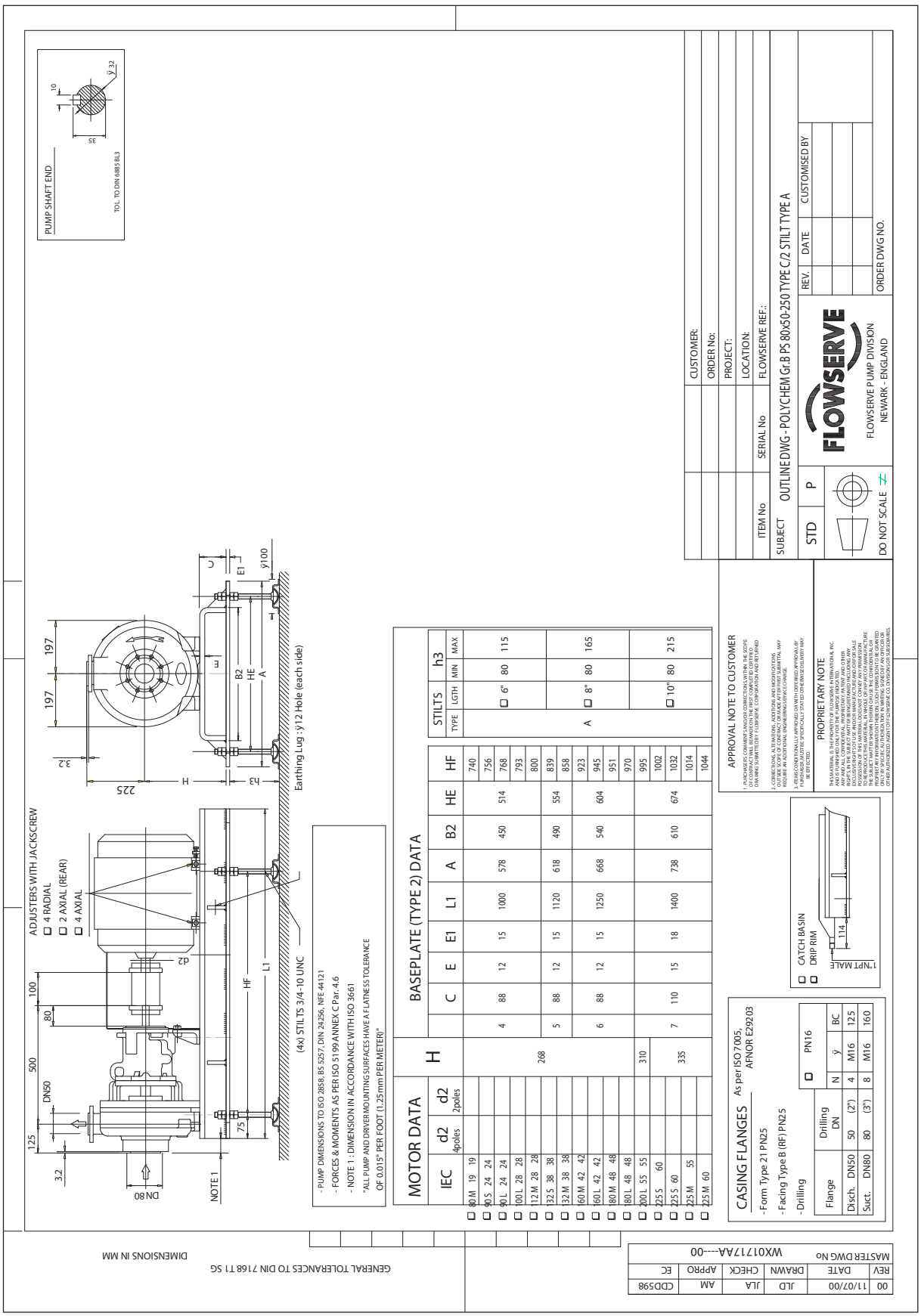


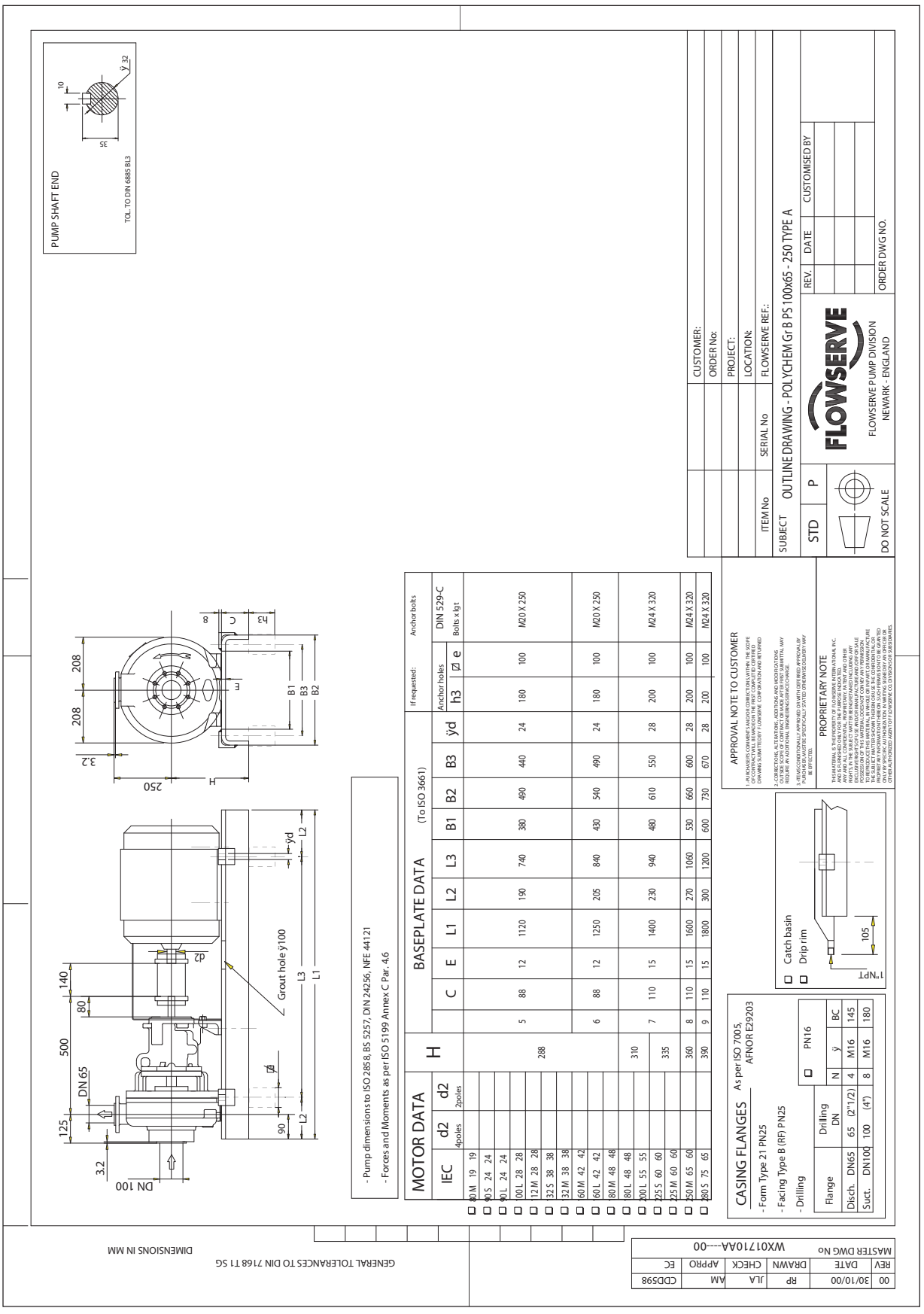
MOTOR DATA IEC	d2 4poles	d2 2poles	H	C	E	L1	L2	L3	B1	B2	B3	ÿd	Anchor holes h3	Anchor holes ⌀ e	Anchor bolts DIN 529-C Bolts x kgt
80 M 19	19		268	4	88	12	1000	170	660	340	450	400	24	180	100	M20 X 250
90 S 24	24															
90 L 24	24															
100 L 28	28															
112 M 28	28			5	88	12	1120	190	740	380	490	440	24	180	100	M20 X 250
132 S 38	38															
132 M 38	38															
160 M 42	42			6	88	12	1250	205	840	430	540	490	24	180	100	M20 X 250
160 L 42	42															
180 M 48	48															
180 L 48	48															
200 L 55	55		310	7	110	15	1400	230	940	480	610	550	28	200	100	M24 X 320
225 S 60	60															
225 M 60	55		335													

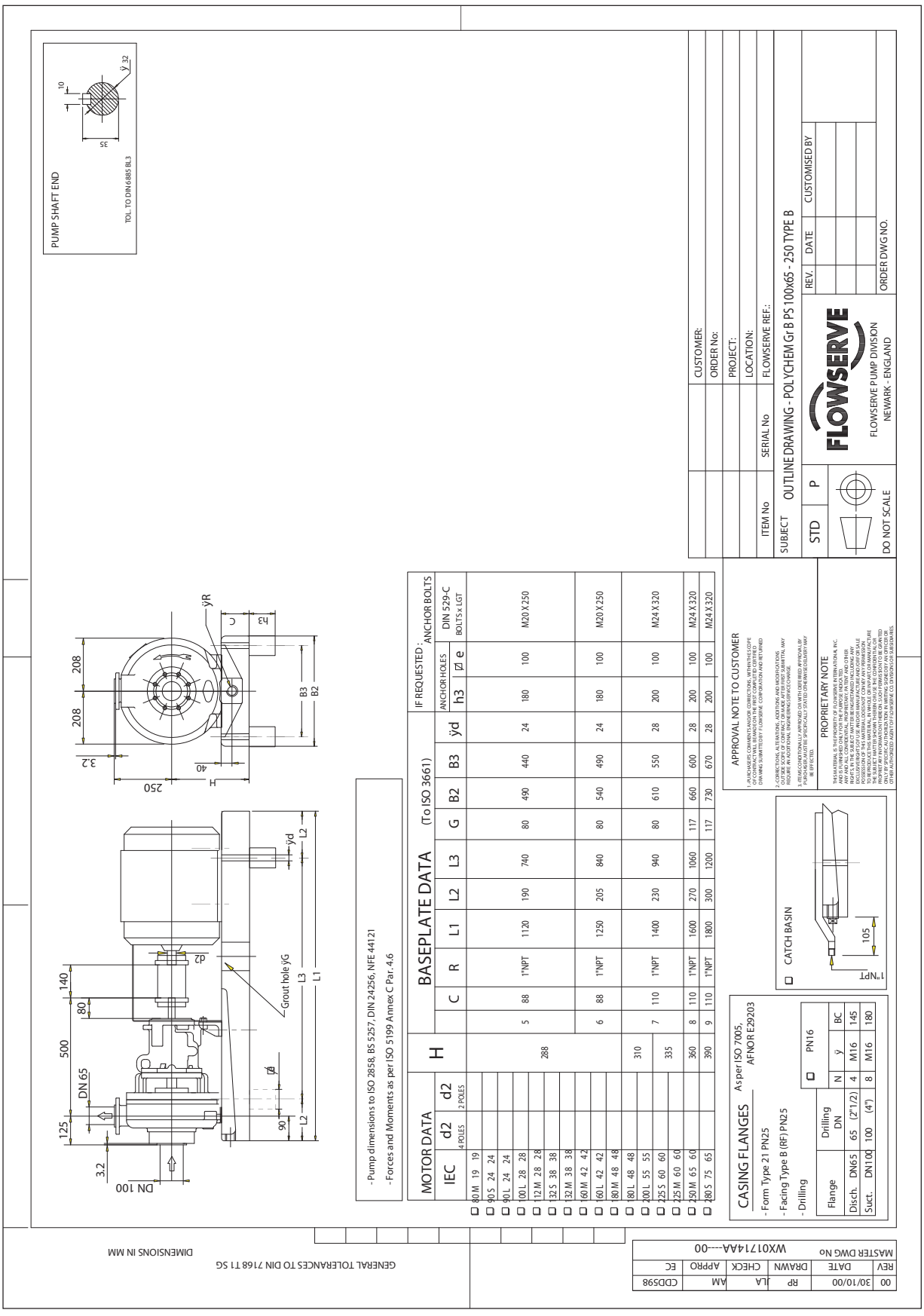
Flange	Drilling DN	N	ŷ	BC
Disch.	DN50 50 (2")	4	M16	125
Suct.	DN80 80 (3")	8	M16	160

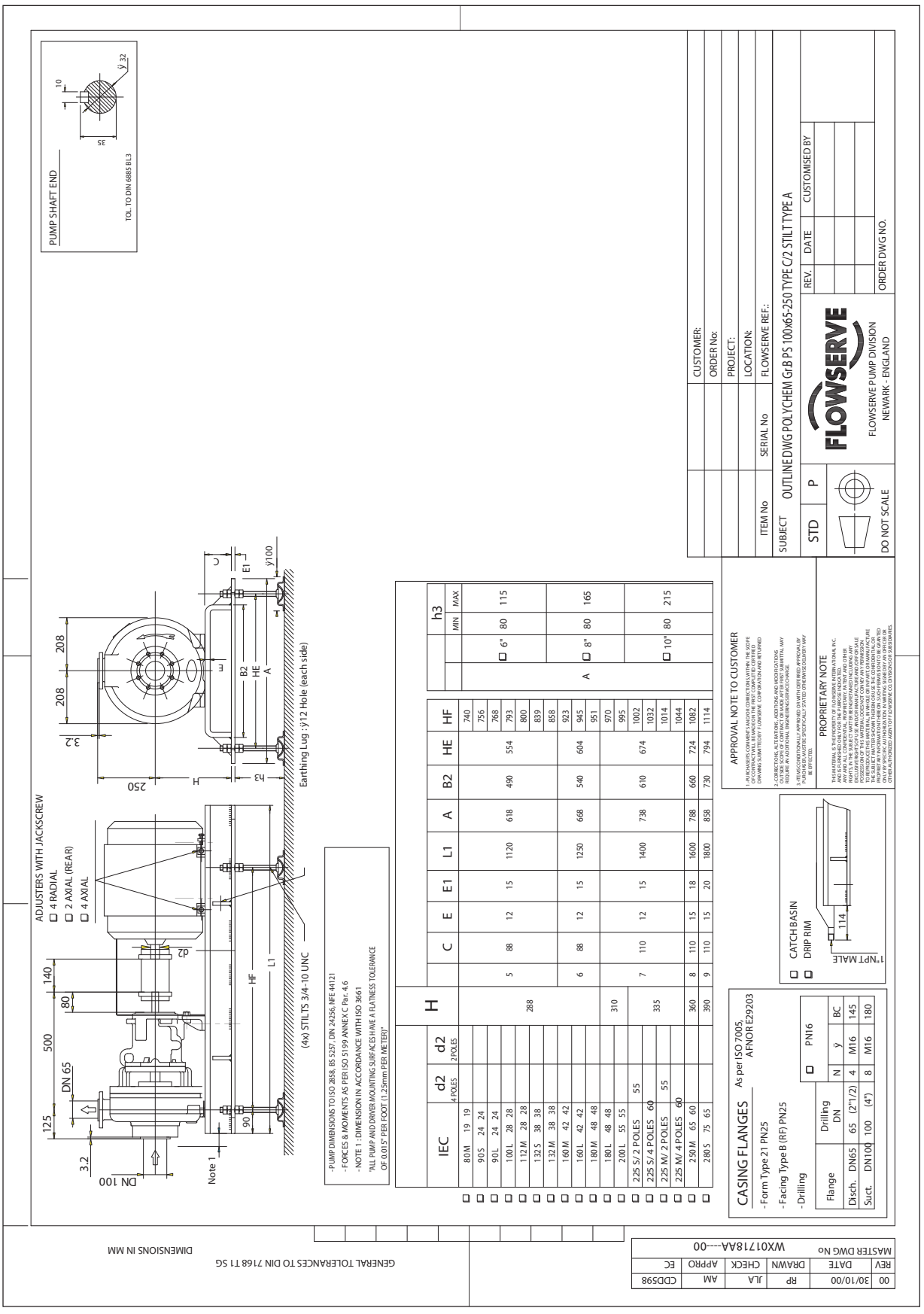
□ PN16


PUMP SHAFT END
TOL. TO DIN6885 BL3
- Pump dimensions to ISO 2858, BS 5257, DIN 24256, NFE 44121
- Forces and Moments as per ISO 5199 Annex C Par. 4.6
CATCH BASIN
MOTOR DATA
BASEPLATE DATA
(To ISO 3661)
If requested:
Anchor bolts
Anchor holes
CASING FLANGES
- Form Type 21 PN25
- Facing Type B (RF) PN25
- Drilling
As per ISO 7005, AFNOR E29203
PN16
APPROVAL NOTE TO CUSTOMER
PROPRIETARY NOTE
CUSTOMER:
ORDER No:
PROJECT:
LOCATION:
ITEM No
SERIAL No
FLOWSERVE REF.:
SUBJECT
OUTLINE DRAWING - POLYCHEM Gr B PS 80x50 - 250 TYPE B
STD
P
FLOWSERVE PUMP DIVISION
NEWARK - ENGLAND
DO NOT SCALE
REV.
DATE
CUSTOMISED BY
ORDER DWG NO.
GENERAL TOLERANCES TO DIN 7168 T1 SG
DIMENSIONS IN MM
MASTER DWG No
WX01713AA----00
00
11/07/00
JLD
JLA
AM
CDD598


PUMP SHAFT END
TOL TO DIN 6885 BL3
ADJUSTERS WITH JACKSCREW
4 RADIAL
2 AXIAL (REAR)
4 AXIAL
(4x) STILTS 3/4-10 UNC
Earthing Lug : ŷ12 Hole (each side)
- PUMP DIMENSIONS TO ISO 2858, BS 5257, DIN 24256, NFE 44121
- FORCES & MOMENTS AS PER ISO 5199 ANNEX C Par. 4.6
- NOTE 1 : DIMENSION IN ACCORDANCE WITH ISO 3661
"ALL PUMP AND DRIVER MOUNTING SURFACES HAVE A FLATNESS TOLERANCE OF 0.015" PER FOOT (1.25mm PER METER)"
MOTOR DATA
BASEPLATE (TYPE 2) DATA
STILTS
CASING FLANGES
As per ISO 7005, AFNOR E29203
- Form Type 21 PN25
- Facing Type B (RF) PN25
- Drilling
PN16
CATCH BASIN
DRIP RIM
APPROVAL NOTE TO CUSTOMER
PROPRIETARY NOTE
CUSTOMER:
ORDER No:
PROJECT:
LOCATION:
ITEM No
SERIAL No
FLOWSERVE REF.:
SUBJECT OUTLINE DWG - POLYCHEM Gr.B PS 80x50-250 TYPE C/2 STILT TYPE A
STD
P
FLOWSERVE PUMP DIVISION
NEWARK - ENGLAND
DO NOT SCALE
REV.
DATE
CUSTOMISED BY
ORDER DWG NO.
GENERAL TOLERANCES TO DIN 7168 T1 SG
DIMENSIONS IN MM
MASTER DWG No WX01717AA----00
00 11/07/00 JLD JLA AM CDD598


PUMP SHAFT END
TOL. TO DIN 6885 BL3
- Pump dimensions to ISO 2858, BS 5257, DIN 24256, NFE 44121
- Forces and Moments as per ISO 5199 Annex C Par. 46
MOTOR DATA
BASEPLATE DATA (To ISO 3661)
If requested: Anchor bolts
CASING FLANGES As per ISO 7005, AFNOR E29203
- Form Type 21 PN25
- Facing Type B (RF) PN25
- Drilling
PN16
Catch basin
Drip rim
APPROVAL NOTE TO CUSTOMER
PROPRIETARY NOTE
CUSTOMER:
ORDER No:
PROJECT:
LOCATION:
ITEM No
SERIAL No
FLOWSERVE REF.:
SUBJECT OUTLINE DRAWING - POLYCHEM Gr B PS 100x65 - 250 TYPE A
STD
P
FLOWSERVE PUMP DIVISION
NEWARK - ENGLAND
DO NOT SCALE
REV.
DATE
CUSTOMISED BY
ORDER DWG NO.
GENERAL TOLERANCES TO DIN 7168 T1 SG
DIMENSIONS IN MM
MASTER DWG No WX01710AA----00
00 30/10/00 RP JLA AM CDD598

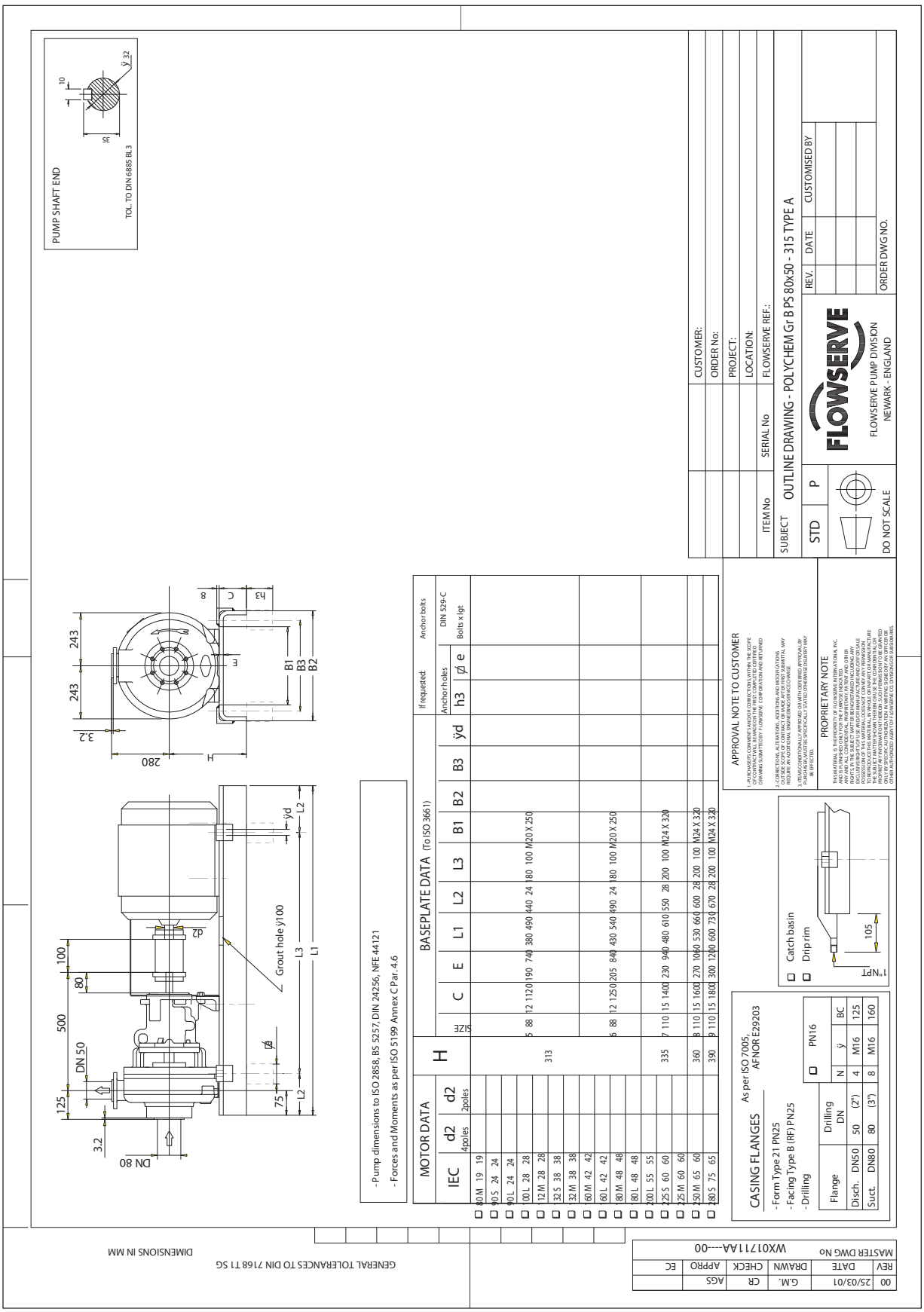

PUMP SHAFT END
TOL. TO DIN 6885 BL.3
- Pump dimensions to ISO 2858, BS 5257, DIN 24256, NFE 44121
- Forces and Moments as per ISO 5199 Annex C Par. 4.6
MOTOR DATA
IEC
d2 4 POLES
d2 2 POLES
H
BASEPLATE DATA (To ISO 3661)
IF REQUESTED : ANCHOR BOLTS
ANCHOR HOLES
DIN 529-C BOLTS x LGT
80 M 19 19
90 S 24 24
90 L 24 24
100 L 28 28
112 M 28 28
132 S 38 38
132 M 38 38
160 M 42 42
160 L 42 42
180 M 48 48
180 L 48 48
200 L 55 55
225 S 60 60
225 M 60 60
250 M 65 60
280 S 75 65
CASING FLANGES As per ISO 7005, AFNOR E29203
- Form Type 21 PN25
- Facing Type B (RF) PN25
- Drilling
PN16
Flange
Drilling DN
Disch. DN65 65 (2"1/2)
Suct. DN100 100 (4")
CATCH BASIN
APPROVAL NOTE TO CUSTOMER
PROPRIETARY NOTE
CUSTOMER:
ORDER No:
PROJECT:
LOCATION:
ITEM No
SERIAL No
FLOWSERVE REF.:
SUBJECT OUTLINE DRAWING - POLYCHEM Gr B PS 100x65 - 250 TYPE B
STD
P
FLOWSERVE PUMP DIVISION
NEWARK - ENGLAND
DO NOT SCALE
REV.
DATE
CUSTOMISED BY
ORDER DWG NO.
GENERAL TOLERANCES TO DIN 7168 T1 SG
DIMENSIONS IN MM
MASTER DWG No WX01714AA----00
REV 00
DATE 30/10/00
DRAWN RP
CHECK JLA
APPRO AM
EC CDD598

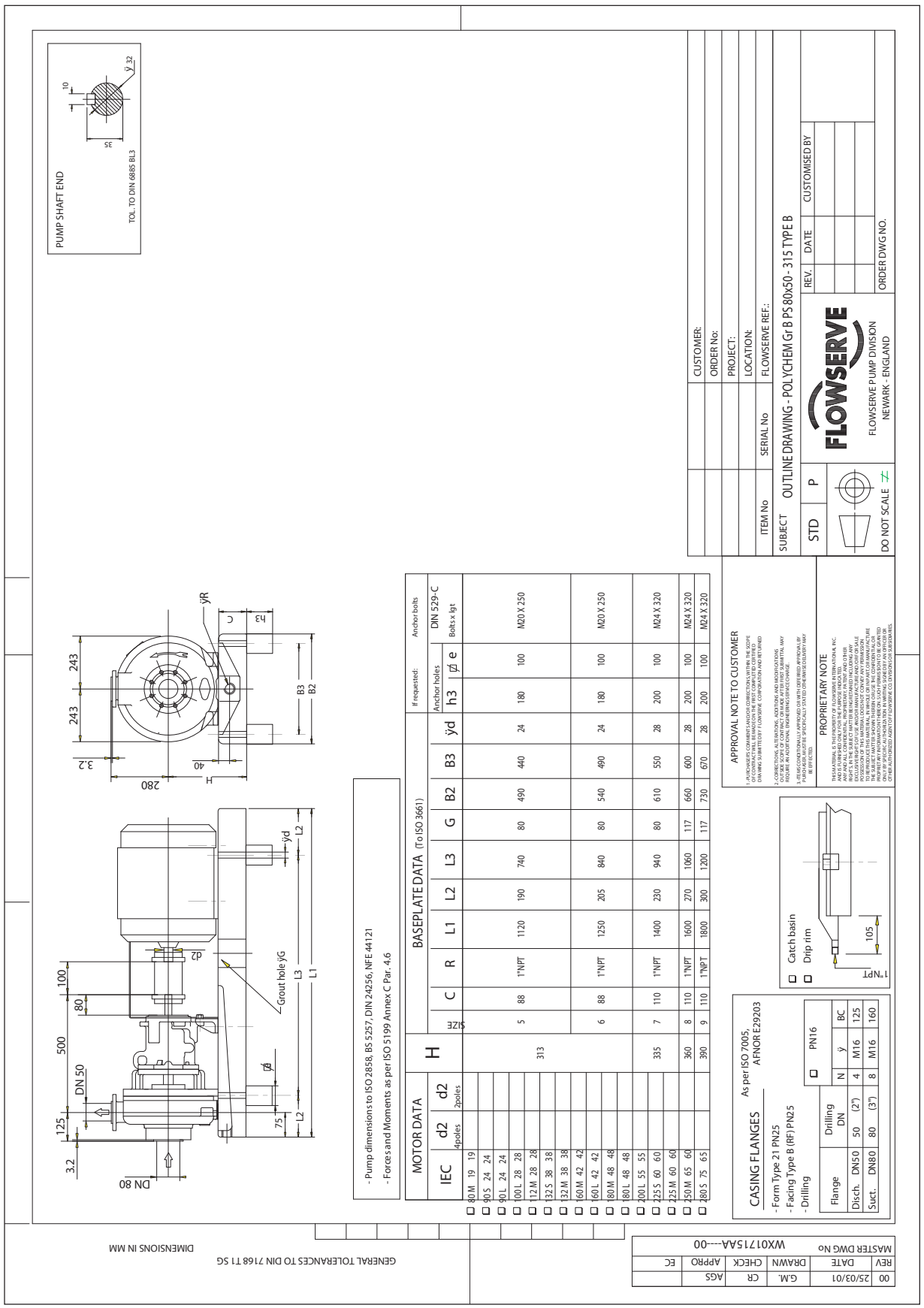


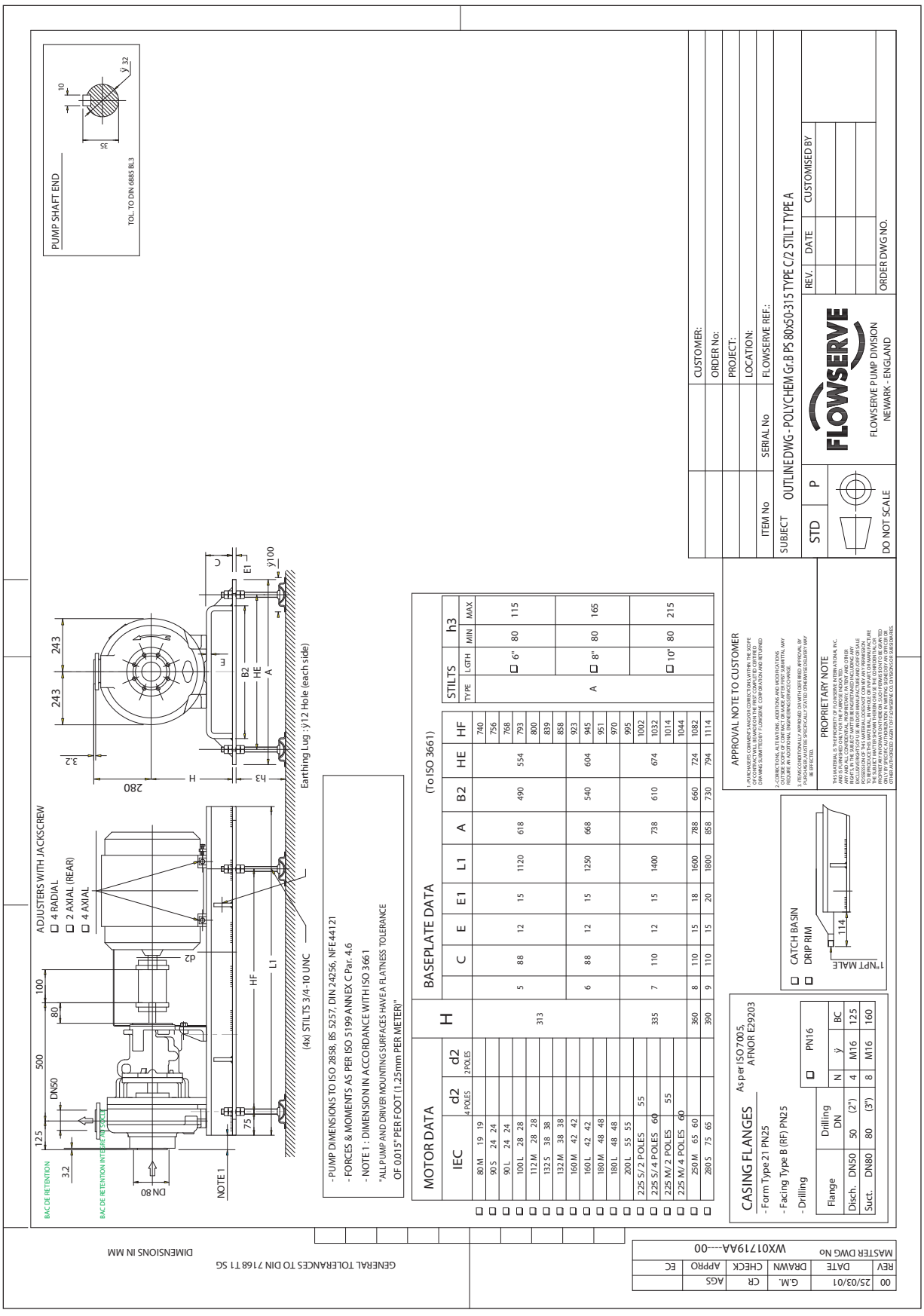
IEC	d2 4 POLES	d2 2 POLES	H	C	E	E1	L1	A	B2	HE	HF	h3 MIN	h3 MAX
80M	19	19									740		
90S	24	24									756		
90L	24	24									768		
100L	28	28									793		
112M	28	28	288	5	88	12	15	1120	618	490	554	800	839
132S	38	38											858
132M	38	38											923
160M	42	42											945
160L	42	42		6	88	12	15	1250	668	540	604	A	951
180M	48	48											970
180L	48	48	310										995
200L	55	55											1002
225 S/ 2 POLES	55			7	110	12	15	1400	738	610	674		1032
225 S/ 4 POLES	60		335										1014
225 M/ 2 POLES	55												1044
225 M/ 4 POLES	60												1082
250 M	65	60	360	8	110	15	18	1600	788	660	724		1114
280 S	75	65	390	9	110	15	20	1800	858	730	794		

Flange	Drilling DN	N	ŷ	BC
Disch. DN65	65 (2"1/2)	4	M16	145
Suct. DN100	100 (4")	8	M16	180

A	h3 MIN	h3 MAX
□ 6"	80	115
□ 8"	80	165
□ 10"	80	215

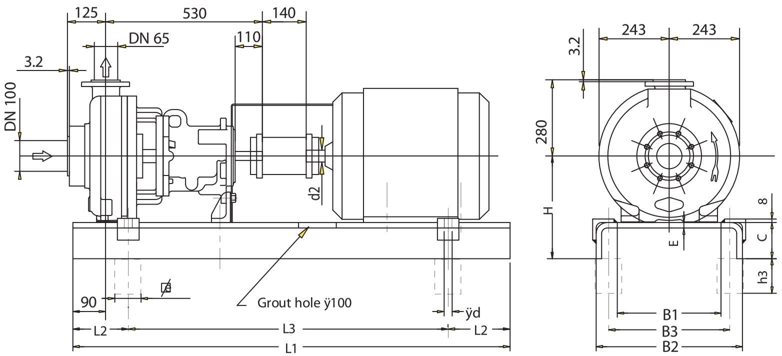

PUMP SHAFT END
TOL. TO DIN 6885 BL.3
- Pump dimensions to ISO 2858, BS 5257, DIN 24256, NFE 44121
- Forces and Moments as per ISO 5199 Annex C Par. 4.6
MOTOR DATA
IEC
d2 4poles
d2 2poles
H
BASEPLATE DATA (To ISO 3661)
SIZE
C
E
L1
L2
L3
B1
B2
B3
If requested:
Anchor holes
Anchor bolts
DIN 529-C
CASING FLANGES
As per ISO 7005, AFNOR E29203
- Form Type 21 PN25
- Facing Type B (RF) PN25
- Drilling
Flange
Drilling DN
PN16
Disch. DN50 50 (2")
Suct. DN80 80 (3")
Catch basin
Drip rim
APPROVAL NOTE TO CUSTOMER
PROPRIETARY NOTE
CUSTOMER:
ORDER No:
PROJECT:
LOCATION:
ITEM No
SERIAL No
FLOWSERVE REF.:
SUBJECT OUTLINE DRAWING - POLYCHEM Gr B PS 80x50 - 315 TYPE A
STD
P
FLOWSERVE PUMP DIVISION
NEWARK - ENGLAND
DO NOT SCALE
REV.
DATE
CUSTOMISED BY
ORDER DWG NO.
GENERAL TOLERANCES TO DIN 7168 T1 SG
DIMENSIONS IN MM
MASTER DWG No WX01711AA----00
REV 00
DATE 25/03/01
DRAWN G.M.
CHECK CR
APPRO AGS
EC

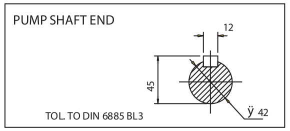

PUMP SHAFT END
TOL. TO DIN 6885 BL3
- Pump dimensions to ISO 2858, BS 5257, DIN 24256, NFE 44121
- Forces and Moments as per ISO 5199 Annex C Par. 4.6
MOTOR DATA
IEC
d2 4poles
d2 2poles
H
BASEPLATE DATA (To ISO 3661)
If requested:
Anchor bolts
SIZE
C
R
L1
L2
L3
G
B2
B3
ÿd
Anchor holes h3
ø e
DIN 529-C Bolts x lgt
80M 19 19 313 5 88 1"NPT 1120 190 740 80 490 440 24 180 100 M20 X 250
90S 24 24
90L 24 24
100L 28 28
112M 28 28
132S 38 38
132M 38 38
160M 42 42 6 88 1"NPT 1250 205 840 80 540 490 24 180 100 M20 X 250
160L 42 42
180M 48 48
180L 48 48
200L 55 55
225S 60 60 335 7 110 1"NPT 1400 230 940 80 610 550 28 200 100 M24 X 320
225M 60 60
250M 65 60 360 8 110 1"NPT 1600 270 1060 117 660 600 28 200 100 M24 X 320
280S 75 65 390 9 110 1"NPT 1800 300 1200 117 730 670 28 200 100 M24 X 320
CASING FLANGES
As per ISO 7005, AFNOR E29203
- Form Type 21 PN25
- Facing Type B (RF) PN25
- Drilling
Flange
Drilling DN
PN16
N
ý
BC
Disch. DN50 50 (2") 4 M16 125
Suct. DN80 80 (3") 8 M16 160
Catch basin
Drip rim
105
APPROVAL NOTE TO CUSTOMER
PROPRIETARY NOTE
CUSTOMER:
ORDER No:
PROJECT:
LOCATION:
ITEM No
SERIAL No
FLOWSERVE REF.:
SUBJECT OUTLINE DRAWING - POLYCHEM Gr B PS 80x50 - 315 TYPE B
STD
P
FLOWSERVE PUMP DIVISION
NEWARK - ENGLAND
DO NOT SCALE
REV.
DATE
CUSTOMISED BY
ORDER DWG NO.
GENERAL TOLERANCES TO DIN 7168 T1 SG
DIMENSIONS IN MM
MASTER DWG No WX01715AA----00
REV 00
DATE 25/03/01
DRAWN G.M.
CHECK CR
APPRO AGS
EC


PUMP SHAFT END
TOL. TO DIN 6885 BL3
ADJUSTERS WITH JACKSCREW
4 RADIAL
2 AXIAL (REAR)
4 AXIAL
(4x) STILTS 3/4-10 UNC
Earthing Lug : ŷ12 Hole (each side)
- PUMP DIMENSIONS TO ISO 2858, BS 5257, DIN 24256, NFE44121
- FORCES & MOMENTS AS PER ISO 5199 ANNEX C Par. 4.6
- NOTE 1 : DIMENSION IN ACCORDANCE WITH ISO 3661
ALL PUMP AND DRIVER MOUNTING SURFACES HAVE A FLATNESS TOLERANCE OF 0.015" PER FOOT (1.25mm PER METER)
MOTOR DATA
BASEPLATE DATA (To ISO 3661)
CASING FLANGES
As per ISO 7005, AFNOR E29203
- Form Type 21 PN25
- Facing Type B (RF) PN25
- Drilling
CATCH BASIN
DRIP RIM
APPROVAL NOTE TO CUSTOMER
PROPRIETARY NOTE
CUSTOMER:
ORDER No:
PROJECT:
LOCATION:
ITEM No
SERIAL No
FLOWSERVE REF.:
SUBJECT OUTLINE DWG - POLYCHEM Gr.B PS 80x50-315 TYPE C/2 STILT TYPE A
STD
P
FLOWSERVE PUMP DIVISION
NEWARK - ENGLAND
DO NOT SCALE
REV.
DATE
CUSTOMISED BY
ORDER DWG NO.
MASTER DWG No WX01719AA----00
REV 00
DATE 25/03/01
DRAWN G.M.
CHECK CR
APPRO AGS
EC
GENERAL TOLERANCES TO DIN 7168 T1 SG
DIMENSIONS IN MM

DIMENSIONS IN MM

GENERAL TOLERANCES TO DIN 7168 T1 SG





- Pump dimensions to ISO 2858, BS 5257, DIN 24256, NFE 44121
- Forces and Moments as per ISO 5199 Annex C Par. 4.6

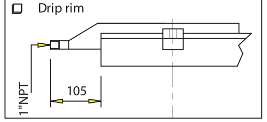
MOTOR DATA			H	BASEPLATE DATA (To ISO 3661)										If requested: Anchor holes		Anchor bolts DIN 529-C
IEC	d2 4poles	d2 2poles		SIZE	C	E	L1	L2	L3	B1	B2	B3	ÿd	h3	∅ e	Bolts x lgt
☐ 100 L 28 28			313	6	88	12	1250	205	840	430	540	490	24	180	100	M20 X 250
☐ 112 M 28 28																
☐ 132 S 38 38																
☐ 132 M 38 38																
☐ 160 M 42 42																
☐ 160 L 42 42			335	7	110	15	1400	230	940	480	610	550	28	200	100	M24 X 320
☐ 180 M 48 48																
☐ 180 L 48 48																
☐ 200 L 55 55																
☐ 225 S 60 60																
☐ 225 M 60 60				8	110	15	1600	270	1060	530	660	600	28	200	100	M24 X 320
☐ 250 M 65 60			360													
☐ 280 S 75 65			390	9	110	15	1800	300	1200	600	730	670	28	200	100	M24 X 320
☐ 280 M 75 65																

CASING FLANGES As per ISO 7005, AFNOR E29203

- Form Type 21 PN25
- Facing Type B (RF) PN25
- Drilling

Flange	Drilling DN(2")	☐ PN16 N	ÿ	BC
Disch. DN65	65	4	M16	145
Suct. DN100	100 (4")	8	M16	180

☐ Catch basin
☐ Drip rim



APPROVAL NOTE TO CUSTOMER

1.-PURCHASER'S COMMENTS AND/OR CORRECTIONS, WITHIN THE SCOPE OF CONTRACT WILL BE MADE ON THE FIRST COMPLETED CERTIFIED DRAWING SUBMITTED BY FLOWSERVE CORPORATION AND RETURNED

2.-CORRECTIONS, ALTERATIONS, ADDITIONS AND MODIFICATIONS OUTSIDE SCOPE OF CONTRACT OR MADE AFTER FIRST SUBMITTAL MAY REQUIRE AN ADDITIONAL ENGINEERING SERVICE CHARGE.

3.-ITEMS CONDITIONALLY APPROVED OR WITH DEFERRED APPROVAL BY PURCHASER, MUST BE SPECIFICALLY STATED OTHERWISE DELIVERY MAY BE EFFECTED.

PROPRIETARY NOTE

		CUSTOMER:
		ORDER No:
		PROJECT:
		LOCATION:
ITEM No	SERIAL No	FLOWSERVE REF.:

SUBJECT OUTLINE DRAWING - POLYCHEM Gr C PS 100x65 - 315 TYPE A

STD P

DO NOT SCALE

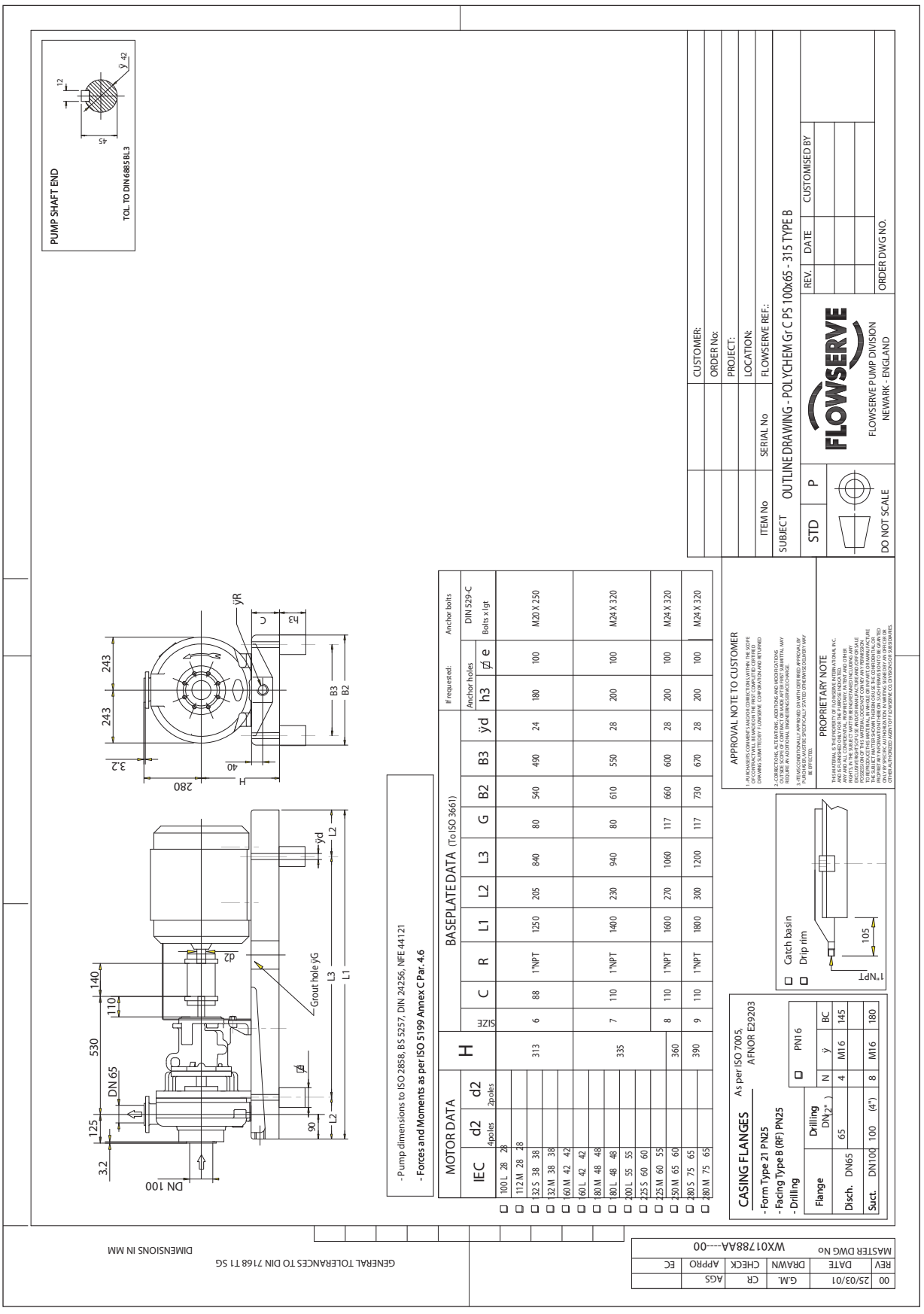
FLOWSERVE
FLOWSERVE PUMP DIVISION
NEWARK - ENGLAND

REV.	DATE	CUSTOMISED BY

ORDER DWG NO.

REV	DATE	DRAWN	CHECK	APPRO	EC
00	25/03/01	G.M.	CR	AGS	

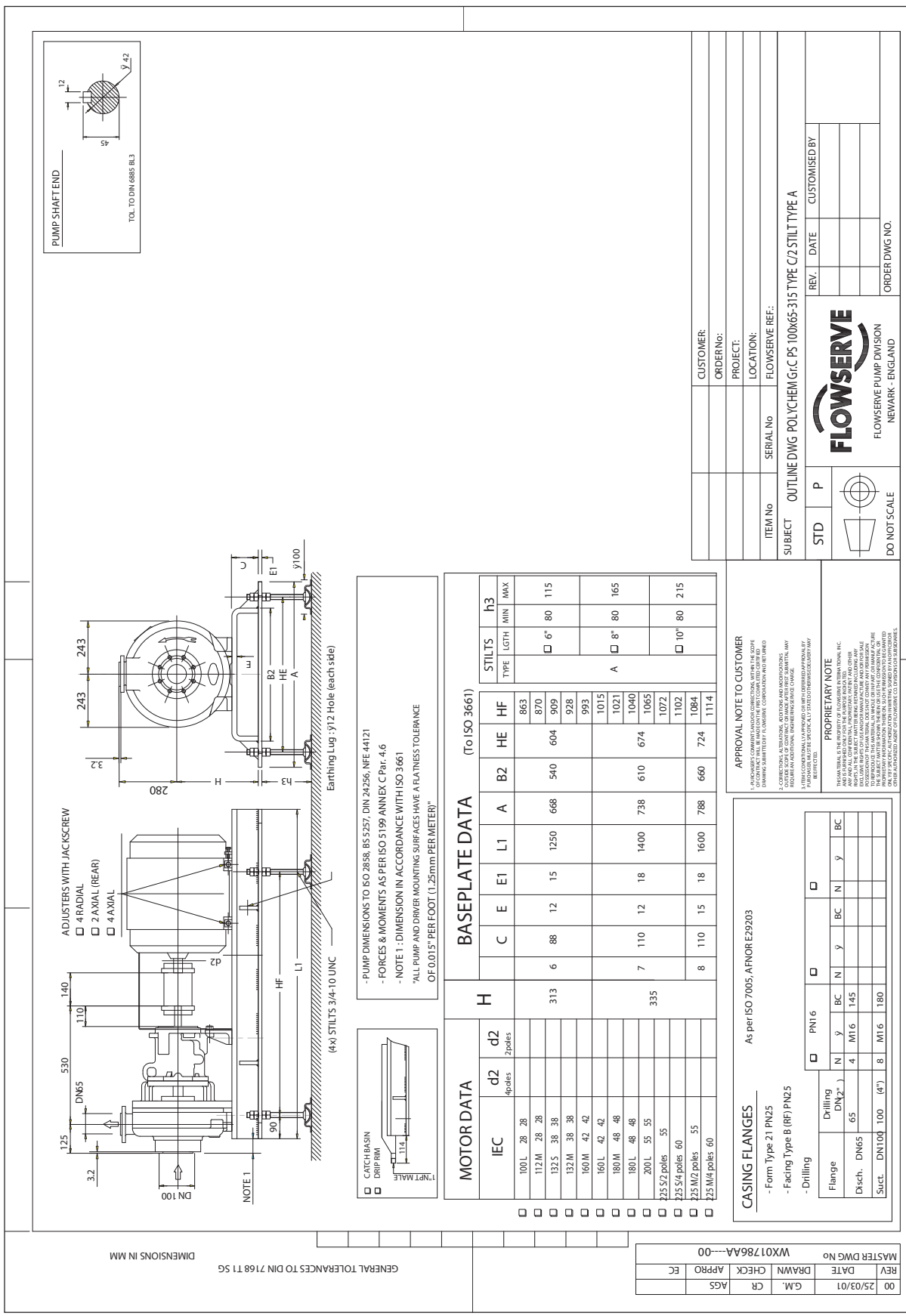
MASTER DWG No WX01787AA----00



IEC	d2 4poles	d2 2poles	H	SIZE	C	R	L1	L2	L3	G	B2	B3	ýd	Anchor holes h3	Anchor holes ⌀ e	DIN 529-C Bolts x lgt
100 L	28	28														
112 M	28	28														
132 S	38	38	313	6	88	1"NPT	1250	205	840	80	540	490	24	180	100	M20 X 250
132 M	38	38														
160 M	42	42														
160 L	42	42														
180 M	48	48														
180 L	48	48	335	7	110	1"NPT	1400	230	940	80	610	550	28	200	100	M24 X 320
200 L	55	55														
225 S	60	60														
225 M	60	55		8	110	1"NPT	1600	270	1060	117	660	600	28	200	100	M24 X 320
250 M	65	60	360													
280 S	75	65														
280 M	75	65	390	9	110	1"NPT	1800	300	1200	117	730	670	28	200	100	M24 X 320

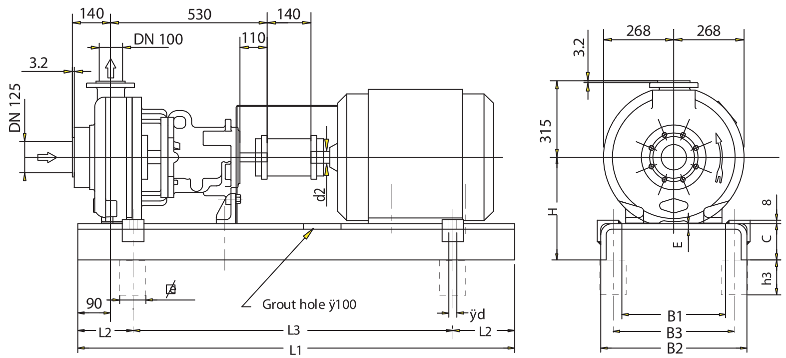
Flange	Drilling DN2^n	N	ý	BC
Disch. DN65	65	4	M16	145
Suct. DN100	100 (4")	8	M16	180

PN16

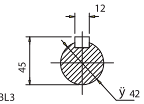


MOTOR DATA IEC	d2 4poles	d2 2poles	H	C	E	E1	L1	A	B2	HE	HF	STILTS TYPE	STILTS LGTH	h3 MIN	h3 MAX
100 L	28	28	313	6	88	12	15	1250	668	540	604	863	A	□ 6"	80	115
112 M	28	28										870				
132 S	38	38										909				
132 M	38	38										928				
160 M	42	42										993				
160 L	42	42	335	7	110	12	18	1400	738	610	674	1015		□ 8"	80	165
180 M	48	48										1021				
180 L	48	48										1040				
200 L	55	55										1065				
225 S/2 poles	55											1072		□ 10"	80	215
225 S/4 poles	60											1102				
225 M/2 poles	55			8	110	15	18	1600	788	660	724	1084				
225 M/4 poles	60											1114				

Flange	Drilling DN(2")	N	ý	BC	N	ý	BC	N	ý	BC
Disch. DN65	65	4	M16	145						
Suct. DN100	100 (4")	8	M16	180						



PUMP SHAFT END

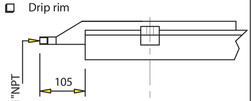


TOL. TO DIN 6885 BL3

DIMENSIONS IN MM

GENERAL TOLERANCES TO DIN 7168 T1 SG

- ☐ Catch basin
- ☐ Drip rim



- Pump dimensions to ISO 2858, BS 5257, DIN 24256, NFE 44121
- Forces and Moments as per ISO 5199 Annex C Par. 4.6

MOTOR DATA			H	BASEPLATE DATA (To ISO 3661)											If requested: Anchor holes		Anchor bolts DIN 529-C
IEC	d2 4poles	d2 2poles		SIZE	C	E	L1	L2	L3	B1	B2	B3	ÿd	h3	∅ e	Bolts x lgt
☐ 132 S	38	38	338	6	88	12	1250	205	840	430	540	490	24	180	100	M20 X 250
☐ 132 M	38	38														
☐ 160 M	42	42														
☐ 160 L	42	42	360	7	110	15	1400	230	940	480	610	550	28	200	100	M24 X 320
☐ 180 M	48	48														
☐ 180 L	48	48														
☐ 200 L	55	55														
☐ 225 S	60	60														
☐ 225 M	60	55		8	110	15	1600	270	1060	530	660	600	28	200	100	M24 X 320
☐ 250 M	65	60														
☐ 280 S	75	65	390	9	110	15	1800	300	1200	600	730	670	28	200	100	M24 X 320
☐ 280 M	75	65														

CASING FLANGES

As per ISO 7005, AFNOR E29203

- Form Type 21 PN25
- Facing Type B (RF) PN25
- Drilling

Flange		Drilling DN	☐ PN16 N	ÿ	BC	☐ N	ÿ	BC	☐ N	ÿ	BC
Disch.	DN100	100 (4")	8	M16	180						
Suct.	DN125	125 (5")	8	M16	210						

APPROVAL NOTE TO CUSTOMER

1.-PURCHASER'S COMMENTS AND/OR CORRECTIONS, WITHIN THE SCOPE OF CONTRACT WILL BE MADE ON THE FIRST COMPLETED CERTIFIED DRAWING SUBMITTED BY FLOWSERVE CORPORATION AND RETURNED

2.-CORRECTIONS, ALTERATIONS, ADDITIONS AND MODIFICATIONS OUTSIDE SCOPE OF CONTRACT OR MADE AFTER FIRST SUBMITTAL MAY REQUIRE AN ADDITIONAL ENGINEERING SERVICE CHARGE.

3.-ITEMS CONDITIONALLY APPROVED OR WITH DEFERRED APPROVAL BY PURCHASER, MUST BE SPECIFICALLY STATED OTHERWISE DELIVERY MAY BE EFFECTED.

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CUSTOMER:	
ORDER No:	
PROJECT:	
LOCATION:	
ITEM No	SERIAL No	FLOWSERVE REF.:

SUBJECT: OUTLINE DRAWING - POLYCHEM Gr C PS 125x100 - 315 TYPE A

STD | P

FLOWSERVE PUMP DIVISION
NEWARK - ENGLAND

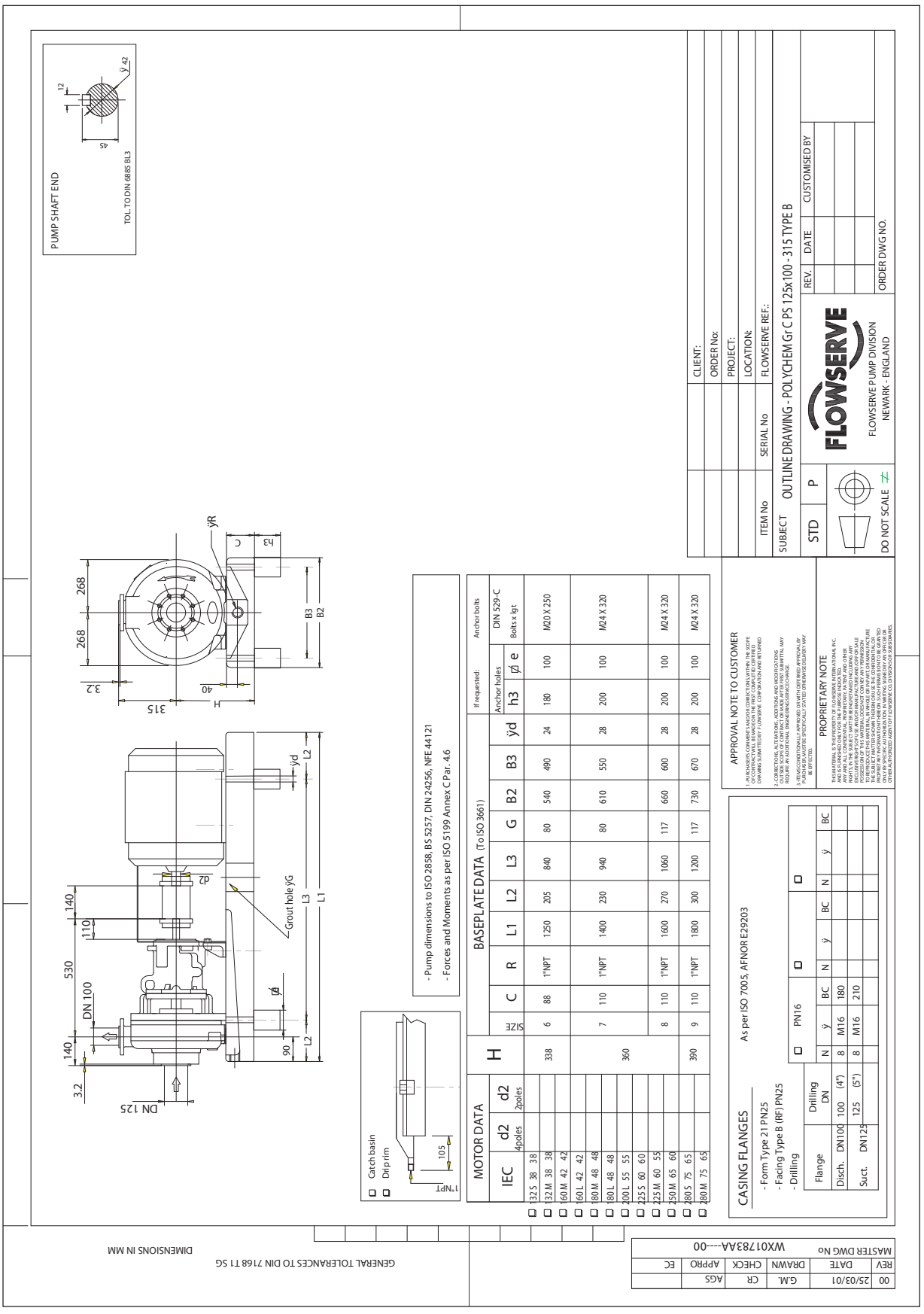
DO NOT SCALE

REV.	DATE	CUSTOMISED BY

ORDER DWG NO.

REV	DATE	DRAWN	CHECK	APPRO	EC
00	25/03/01	G.M.	CR	AGS	

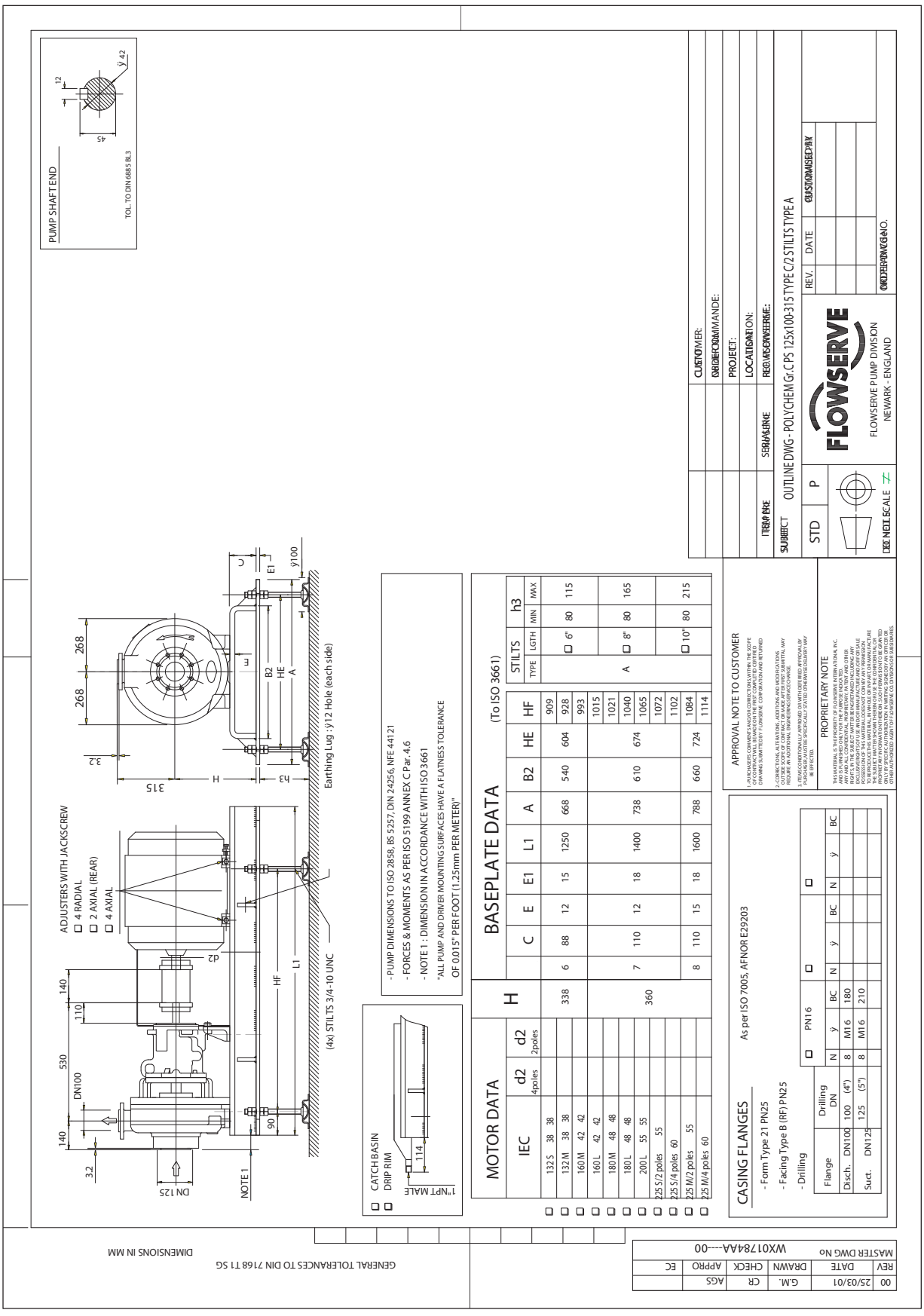
MASTER DWG No WX01782AA----00



MOTOR DATA IEC	d2 4poles	d2 2poles	H	SIZE	C	R	L1	L2	L3	G	B2	B3	ÿd	Anchor holes h3	Anchor holes ⌀ e	Anchor bolts DIN 529-C Bolts x lgt
132S	38	38	338	6	88	1"NPT	1250	205	840	80	540	490	24	180	100	M20 X 250
132M	38	38														
160M	42	42	360	7	110	1"NPT	1400	230	940	80	610	550	28	200	100	M24 X 320
160L	42	42														
180M	48	48														
180L	48	48														
200L	55	55														
225S	60	60														
225M	60	55		8	110	1"NPT	1600	270	1060	117	660	600	28	200	100	M24 X 320
250M	65	60														
280S	75	65	390	9	110	1"NPT	1800	300	1200	117	730	670	28	200	100	M24 X 320
280M	75	65														

If requested:

CASING FLANGES Flange	Drilling DN	PN16 N	PN16 ÿ	PN16 BC	☐ N	☐ ÿ	☐ BC	☐ N	☐ ÿ	☐ BC
Disch.	DN100 100 (4")	8	M16	180						
Suct.	DN125 125 (5")	8	M16	210						


PUMP SHAFT END
TOL. TO DIN 6885 BL.3
ADJUSTERS WITH JACKSCREW
4 RADIAL
2 AXIAL (REAR)
4 AXIAL
(4x) STILTS 3/4-10 UNC
Earthing Lug : ÿ12 Hole (each side)
CATCH BASIN
DRIP RIM
1"NPT MALE
- PUMP DIMENSIONS TO ISO 2858, BS 5257, DIN 24256, NFE 44121
- FORCES & MOMENTS AS PER ISO 5199 ANNEX C Par. 4.6
- NOTE 1 : DIMENSION IN ACCORDANCE WITH ISO 3661
"ALL PUMP AND DRIVER MOUNTING SURFACES HAVE A FLATNESS TOLERANCE OF 0.015" PER FOOT (1.25mm PER METER)"
MOTOR DATA
BASEPLATE DATA (To ISO 3661)
CASING FLANGES
As per ISO 7005, AFNOR E29203
- Form Type 21 PN25
- Facing Type B (RF) PN25
- Drilling
APPROVAL NOTE TO CUSTOMER
PROPRIETARY NOTE
CUSTOMER:
PROJECT:
LOCATION:
SUBJECT OUTLINE DWG - POLYCHEM Gr.C PS 125x100-315 TYPE C/2 STILTS TYPE A
FLOWSERVE PUMP DIVISION
NEWARK - ENGLAND
GENERAL TOLERANCES TO DIN 7168 T1 SG
DIMENSIONS IN MM
MASTER DWG No WX01784AA----00

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General Engineering Data

a. Hydraulic performance HI versus ISO
Information not provided

b. Temperature and pressure limits
Information not provided

c. Noise levels
Information not provided

d. Nozzle loads F/M
Information not provided

e. Cooling requirements for pumps
Information not provided

f. Lubrication oil flow and pressure
Information not provided

g. Pump data sheet forms
Information not provided

h. Minimum/maximum rotating speeds
Information not provided

i. Seal piping plans
Information not provided

j. External pump connections/locations schematic
Information not provided

k. Seal housing dimensions and pressures
Information not provided

l. Weights (pumps and baseplates)
Information not provided

m. Critical speeds and suction specific speeds (NSS)
Information not provided

n. Shaft diameters at seal, bearings, couplings, impeller
Information not provided

o. L^3/D^4
Information not provided

p. WR^2 and generic % speed torque curve
Information not provided

q. Bearing span
Information not provided

r. Shaft sag
Information not provided

s. Impeller type, solids max, settings, thrust factors, balancing, inducers options
Information not provided

t. Minimum flows
Information not provided

u. Running clearances (rings, bearings)
Information not provided

v. Product line engineering calculations and performance correction factors
Information not provided

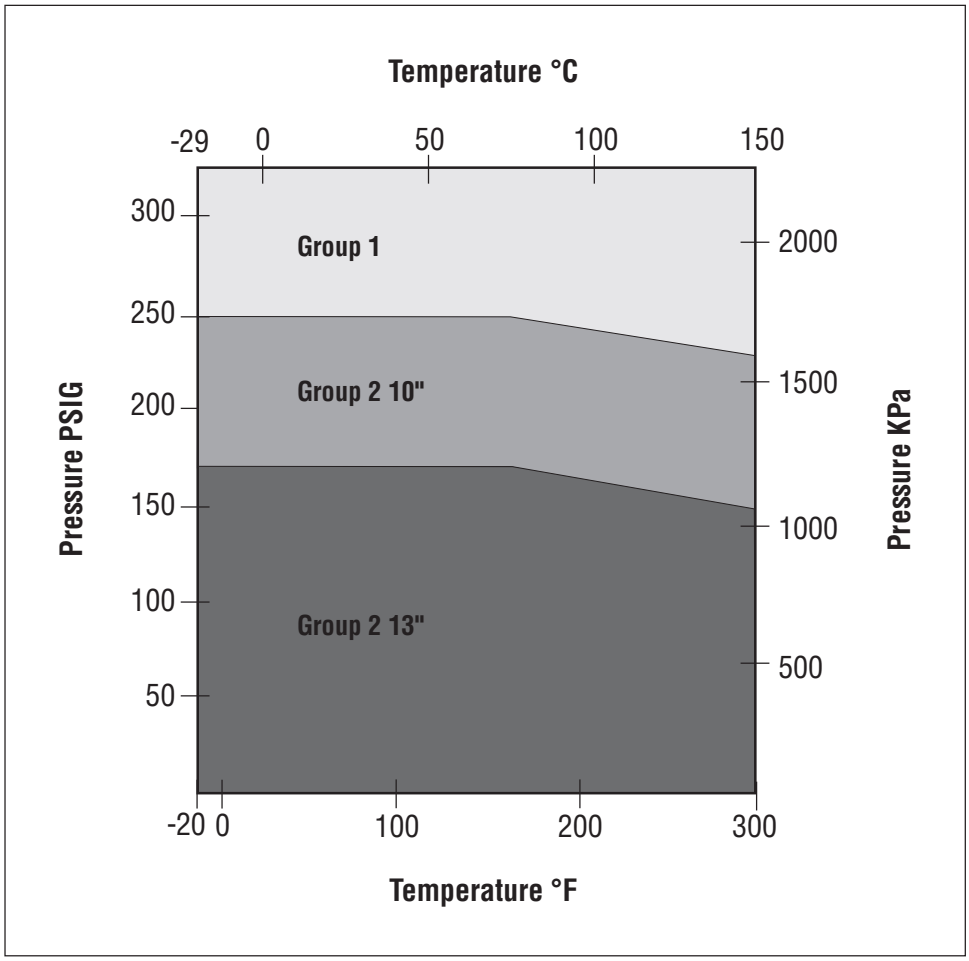
w. Pump rotation options
Information not provided

x. Rotor balancing
Information not provided

y. Axial thrust balancing options
Information not provided

z. Casing style and flange options
Information not provided

General Engineering Data



Mechanical Seals

The PolyChem S-Series offers a broad range of both component and cartridge seals from multiple seal manufacturers. The S-Series product line utilizes one rear cover type which is an oversized taper bore design complete with flow modifiers (FML, E). An attachment canister device can be added to accommodate double component internal seals. The PolyChem S-Series pump allows the customers flexibility in terms of selecting seals based off their individual preferences.

Essentially, eight different seal types can be utilized in the PolyChem S-Series pump:
- Non-Metallic Double Cartridge Seal
- Double Component Seals (Utilizing Non-Metallic Canister)
- Metallic Double Cartridge Seals
- Non-Metallic Single External Seals
- Non-Metallic Single Cartridge Seals (Internal)
- Metallic Single Cartridge Seals (Internal)
- Metallic Single Component Seals (Internal)
- Gas Seal Technology Cartridge Seals

Flowserve has worked with the following seal manufacturers during development:
- A.E.S. Engineering Ltd.
- Burgmann
- Flowserve (formally Durametallic)
- John Crane Inc.
- Utex Industries, Inc.

The following pages will identify the various seal types, as referenced above, that each given seal company offers in their commercial packages. Please see PolyChem price pages for specifics concerning each manufacturer's offering, material combinations, and pricing.

Special Notes:
- Component seals must use glands designed exclusively for PolyChem FML / E seal chambers. See pump price pages for details.
- Although many of the seals offered with the PolyChem S-Series use standard, stocked components, one must refer to the S-Series seal price pages when selecting seals. In some cases, unique components (component seals) or gland modifications (cartridge seals) are required. Also, when ordering spare seals from the seal supplier, be sure to note that the seal is for a PolyChem S-Series pump to ensure the order is filled properly.

Non-Metallic Double Cartridge Seals

Key Features and Benefits
- Design takes full advantage of Flow Modifier Seal Chamber environment
- Economical option to expensive high alloy arrangements
- Metal components are not exposed to corrosive process

Application Considerations / Limitations
- Applications should be reviewed with local seal representative. Different designs have levels of sensitivity to high temperatures

Models Available

ANSI	ISO
A.E.S. – DSNM, FI-DSNM	A.E.S. – DSNM, FI-DSNM
Burgmann* – Cartex K-DE (Halar)	Burgmann* – Cartex K-DE (Halar)
Flowserve (Dura) – PL-200	Flowserve (Dura) – PL-200

Special Notes:
- All questions pertaining to process compatibility/limits should be directed to the local seal representative or the manufacturer's sales department

** Burgmann seal is limited to 180°F due to its Halar coating material. Consult Burgmann for applications exceeding 180°F.*

Double Component Seals

Key Features and Benefits

- Accepts seal designs familiar to the industry
- Economical double seal solutions
- Metal components are not exposed to corrosive process

Application Considerations / Limitations

- Non-metallic Canister option required; consult factory if greater than 121°C (250°F)
- Seal type will either utilize a special split collar or friction drive mounting method for the rotating assembly when used with silicon carbide sleeve
- Note that seal seats employ anti-rotation pins
- Gaskets are clamped on both sides of the canister (cover to canister and canister to metal gland)

Models Available

ANSI	ISO (DIN 24960)
Burgmann – M2Z, MG1, M32	Burgmann – MG12, M2N, M32N
Flowserve (Dura) – RO, ROTT, 52-PAC	Flowserve (Dura) – SRO, SROTT, RO, ROTT, 52-PAC
John Crane – 8-1T, 9T, 1	John Crane – 58U, 59U, 502

Metallic Double Cartridge Seals

Key Features and Benefits

- Accepts full range of metallic cartridge seals from multiple manufacturers
- Enables customers to use seals out of existing stock

Application Considerations / Limitations

- Remember that the corrosion resistance of the seal's alloy components should be comparable to the fluoropolymer material of the pump. Therefore, it is likely that noble alloys such as Hastelloy should be required making the seal an expensive choice. However, there will be times that the process conditions will allow for less noble alloys in the form of metallic cartridge seals.

Models Available

ANSI	ISO
A.E.S. – DCIV, CDSA	A.E.S. – DCIV, CDSA
Burgmann – Cartex-DE	Burgmann – Cartex-DE
Flowserve (Dura) – ISC, P-200, X-200	Flowserve (Dura) – ISC, P-200, X-200
John Crane – 5620 (P), 5625 (P)	John Crane – 5620 (P), 5625 (P)

Special Note:

– Metallic cartridge seals may require slight modifications to fit the PolyChem S-Series seal chamber. Be sure to refer to S-Series seal price pages for special requirements and pricing.

Non-Metallic Single External Seals

Key Features and Benefits

- No metal components exposed to aggressive process media
- Economical seal offering
- Simple installation procedure
- Familiar seal offerings from various popular seal manufacturers

Application Considerations / Limitations

- Be sure to stay within seal manufacturer's pressure limit recommendations
- All external seals are of "clamped" seat design

Models Available

ANSI	ISO
A.E.S. – ESNM	A.E.S. – ESNM
Burgmann – Tefcore	Burgmann – Tefcore
Flowserve (Dura) – RAC, TBR	Flowserve (Dura) – RAC, TBR
John Crane – 8B2, 20R	John Crane – 10R, 10T

Special Notes:

– Clamped seats are designed specifically to fit FML / E style seal chamber.

– Group 2/B/C Teflon bellows, external seals (20R, TBR, 10R, 10T) require special shaft / sleeve combination with longer sleeve length. See price pages.

Non-Metallic Single Cartridge Seals (Internal)

Key Features and Benefits

- Design takes full advantage of Flow Modifier Seal Chamber environment
- Economical option to expensive high alloy arrangements
- Metal components are not exposed to corrosive process

Application Considerations / Limitations

- Applications should be reviewed with local seal representative. Different designs have levels of sensitivity to high temperatures

Models Available

ANSI	ISO
A.E.S. – SSNM	A.E.S. – SSNM
Burgmann – N/A	Burgmann* – Cartex K-DE (Halar)
Flowserve (Dura) – PL-100	Flowserve (Dura) – PL-100
Utex – Unilite	Utex – Unilite

Special Notes:

– All questions pertaining to process compatibility/limits should be directed to the local seal representative or the manufacturer's sales department

** Burgmann seal is limited to 180°F due to its Halar coating material. Consult Burgmann for applications exceeding 180°F.*

Metallic Single Cartridge Seals (Internal)

Key Features and Benefits

- Accepts full range of metallic cartridge seals from multiple manufacturers
- Enables customers to use seals out of existing stock

Application Considerations / Limitations

- Remember that the corrosion resistance of the seal's alloy components should be comparable to the fluoropolymer material of the pump. Therefore, it is likely that noble alloys such as Hastelloy should be required making the seal an expensive choice. However, there will be times that the process conditions will allow for less noble alloys in the form of metallic cartridge seals.

Models Available

ANSI	ISO
A.E.S. – Converter IV, BI-Metal CURC	A.E.S. – Converter IV, BI-Metal CURC
Burgmann – Cartex-QE	Burgmann – Cartex-QE
Flowserve (Dura) – ISC, P-50, X-100	Flowserve (Dura) – ISC, P-50, X-100
John Crane – 5610 (Q), 5611 (Q), 5615 (Q)	John Crane – 5610 (Q), 5611 (Q), 5615 (Q)

Special Note:

– Metallic cartridge seals may require slight modifications to fit the PolyChem S-Series seal chamber. Be sure to refer to S-Series seal price pages for special requirements and pricing.

Metallic Single Component Seals (Internal)

Key Features and Benefits

- Design takes full advantage of Flow Modifier Seal Chamber environment
- Customers can use familiar seal types from multiple manufacturers
- Can be a cost effective package

Application Considerations / Limitations

- ANSI Market – John Crane and Burgmann have opted to utilize the same clamped seat that they are utilizing for their external seals. This keeps the gland out of the process material; thus, the standard alloy 20 clamped gland can be utilized. Due to Durametallic's soft seat material (carbon), they need to utilize a conventional elastomer mounted seat arrangement (except for CBR) that calls for a high alloy gland material (Hastelloy) being that the gland is exposed to the process media.
- ISO Market – From a marketing perspective, the seal companies opted not to utilize the clamped seat arrangement. Therefore, conventional G9 (DIN 24960) elastomer mounted seats have been accounted for that utilize a Hastelloy gland.
- All single internal metallic seals utilize the Hastelloy sleeve option; therefore, they can be set screwed down directly to the sleeve in the traditional manner.
- The major drawback to this seal arrangement is the fact that metal components are now exposed to the process media in a non-metallic pump.

Models Available

ANSI	ISO (DIN 24960)
Burgmann – M2, MG1, M32, MFL85N	Burgmann – MG12, M2N, M32N, MFL85N
Flowserve (Dura) – RO, ROTT, CBR	Flowserve (Dura) – RO, ROTT, CBR, SRO, SROTT
John Crane – 8-1T, 9T, 215, 670	John Crane – 58U, 59U, 215, 670

Gas Seal Technology Cartridge Seals

Key Features and Benefits

- Dry running seals designed to allow zero emission leakage
- Seal face wear is virtually zero for increased seal life
- Eliminates maintenance intensive liquid support system requirements

Application Considerations / Limitations

- Mainly available in 316SS hardware; therefore, Hastelloy materials would cause long lead times and expensive upgrade if deemed necessary for process compatibility

Models Available

ANSI	ISO
Flowserve (Dura) – GB-200 (In-Line also) GF-200	Flowserve (Dura) – GB-200 (In-Line also)
John Crane – 2800	John Crane – 2800

Non-Metallic Single External Seals

Key Features and Benefits

- No metal components exposed to aggressive process media
- Economical seal offering
- Simple installation procedure
- Familiar seal offerings from various popular seal manufacturers

Application Considerations / Limitations

- Be sure to stay within seal manufacturer's pressure limit recommendations
- All external seals are of "clamped" seat design

Models Available

ANSI	ISO
A.E.S. – ESNM	A.E.S. – ESNM
Burgmann – Tefcore	Burgmann – Tefcore
Flowserve (Dura) – RAC, TBR	Flowserve (Dura) – RAC, TBR
John Crane – 8B2, 20R	John Crane – 10R, 10T

Special Note:

– Clamped seats are designed specifically to fit FML / E style seal chamber.

– Group 2/B PFA bellows, external seals (20R, TBR, 10R, 10T) require special shaft / sleeve combination with longer sleeve length. See price pages.

QUOTE:
ITEM:

FLOWSERVE CORPORATION

POLYCHEM S-SERIES

DATE:
PAGE 1 OF 2

PUMP MODEL
SIZE CODE: _____
ALLOY: DIPA
WEIGHT: _____

CASING
ALLOY: _____
FLANGES: _____
TAPS: _____
MISC.: _____

REAR COVER/STUFFING BOX
ALLOY: DIPA
SEAL SENTRY
MISC.: _____
MISC.: _____

IMPELLER
ALLOY: SRPA
TRIM: _____ MIN/MAX: _____
O-RING: _____
MISC.: _____

SHAFT
BB HOOK SHAFT
SLEEVE: _____

BEARING HOUSING / LANTERN
ALLOY: DCI4
TAPS: _____
LUBE: _____
SEALS: _____
MISC: _____
MISC: _____

SEAL

CUSTOMER:

DESTINATION:

TAG NUMBER: _____

QUANTITY: _____
STATUS: _____

INQUIRY NO: _____
JOB/PROJ. NO: _____
SALES REP:

OPERATING CONDITIONS

		UNITS:
CAPACITY:		
TDH REQUIRED:		
TDH OFFERED:		
PWR OPERATING:		
PWR MAX:		
NPSH AVAILABLE:		
NPSH REQUIRED:		
MINIMUM FLOW:		
SUCTION PRESSURE:		
FLUID PUMPED (1):		
CONCENTRATION:		
FLUID PUMPED (2):		
CONCENTRATION:		
TEMPERATURE		
VISCOSITY		
SPECIFIC GRAVITY		
VAPOR PRESSURE		
SOLIDS % WEIGHT:		
SOLIDS MAX SIZE:		
SOLIDS HARDNESS:		
EFFICIENCY:		
PWR AT MIN. FLOW:		

QUOTE:
ITEM:

FLOWSERVE CORPORATION
POLYCHEM S-SERIES

DATE:
PAGE 2 OF 2

INSTRUMENTATION CAT #:
#1: _____
#2: _____
#3: _____
#4: _____

MOTOR
MFR: _____ HP/KW: _____
RPM: _____ P/H/V: _____
S.F.: _____ INSUL.: _____
FRAME: _____ ENCLOS: _____
FURNISHED BY: _____
MOUNTED BY: _____
MISC.: _____

BASEPLATE
NO.: _____ TYPE: _____ MTL: _____
STILT: (Y/N): _____ MTL: _____
STILT LENGTH: _____
MISC.: _____
MISC.: _____

COUPLING
MFR: _____
TYPE: _____
MISC.: _____
GUARD: _____ MTL: _____

TESTING
#1: _____
#2: _____
#3: _____

MISCELLANEOUS

TOTAL NET:

CUSTOMER:

DESTINATION:

TAG NUMBER:

QUANTITY:
STATUS:

INQUIRY NO:
JOB/PROJ. NO:
SALES REP:

DOCUMENTATION REQUIRED

	QTE C/R	APP C/R	REV C/R	FIN C/R
	__/__	__/__	__/__	__/__
	__/__	__/__	__/__	__/__
	__/__	__/__	__/__	__/__
	__/__	__/__	__/__	__/__
	__/__	__/__	__/__	__/__
	__/__	__/__	__/__	__/__
	__/__	__/__	__/__	__/__

NOTES

DURCO ORDER:

CUSTOMER PO:

SERIAL NO.:

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Standard Lead Times

Delivery

Consult local order coordinator/customer service for all delivery commitments and expediting. All pumps will be built either in Chesapeake, VA (USA) or in Newark (UK).

Note: DIN seals and IEC motors, motor hardware, and accompanying bases will not be stocked in our Houston QRC.

Delivery commitments for pumps and parts originating in our Houston QRC will be handled by our Houston customer service representative.

Newark will quote and coordinate total delivery times for any order that requires value added work to be performed at Newark.

Air and sea (container consolidation) arrangements will be handled by the Houston QRC per shipping instructions submitted with all orders.

Standard Lead Times

S-Series Pumps	Standard lead time*
ANSI	6-8 weeks
ISO	6-8 weeks
JIS drilling	Contact factory

Non-standard (optional) flange drilling: contact factory

** Standard lead times are for pumps built from normal stock and required components that can be ordered in cycle. Special non-stock items may increase standard times. Consult your customer service representative. Shorter lead times based on availability are feasible – please call.*

Quick Ship Program

A quick ship program is offered for Polychem pumps out of the Chesapeake, VA (USA) and Newark (UK) facilities. Under this program, Polychem pumps will ship in 48 hours or less. Consult your local order coordinator or customer service representative for detail's about of the program.

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Typical Specifications

Durco PolyChem S-Series

How to Specify Non-Metallic Process Pumps

Flowserve suggests the following specification when purchasing non-metallic ANSI pumps:

Design
Shall be of a horizontal, end suction, single-stage, centerline discharge, back pull-out construction, meeting the design criteria of the ASME B73.1M and ISO 2858 dimensional standards.

General
All wetted parts shall be fluoropolymer lined (PFA compatibility) throughout. Pump shall be suitable to handle processes up to 150ºC (300ºF). Cast parts shall have a conditional lifetime casting guarantee.

Casing
Shall be foot mounted, end suction with top centerline discharge, and shall permit disassembly without disturbing the suction or discharge piping. ANSI casings shall be certified to ASTM A395 60-40-18 (E3020). ISO casings shall be certified to EN1563 JS1025 (E2025). PFA liner thickness is nominal 3.18 mm (0.125 in). The casing shall be of raised face flange design and be available in ASME 150# and ISO 16 PN.

Impeller
Shall be fully enclosed impeller design. The impeller clearance shall be set against the rear cover, the casing. No wetted nuts, fasteners, or threads shall be used in securing the impeller to the pump shaft. An elastomeric o-ring consisting of either Viton or Kalrez shall be used to protect the impeller threads.

Shaft
Shall be solid end to end steel hook type shaft and designed to accept a ceramic or metal shaft sleeve.

Rear Cover
Shall be suitable for accepting various seal designs from multiple manufacturers. The rear cover is a cast iron component lined with PFA fluoropolymer. Standard configuration is an oversized tapered bore with flow modifiers. The flow modifiers shall facilitate movement of solids, vapors, and heat away from the mechanical seal. The tapered seal chamber shall be designed to be self-flushing. An optional non-metallic canister may be installed to create an inboard seat for a double component seal. The bolt circle conforms to the ASME (ANSI) and DIN standard for a large bore style box.

Bearings
Shall be large, heavy-duty ball bearings. The inboard bearing shall be a single row, deep groove. The outboard shall be double row angular contact, deep groove. Both bearings shall be located by a shoulder on the shaft. The inboard bearing shall float in the bearing housing, while the outboard bearing shall be locked in place in the bearing carrier. The bearings shall exceed B10 life of 17 500 hours and allow less than 0.0025 mm (0.001 in) end play.

Bearing Housing
ANSI group 1 bearing housings shall be constructed of ductile cast iron which meets ASTM A536 65-32-12 (E3035). ISO group A bearing housings are constructed from ductile cast iron which meets DIN EN1563 JS1030 (E2008). Group 2/B/C ANSI and ISO bearing housings are constructed from cast iron which meets ASTM A48 25A (E3006) for ANSI and EN1561 JL1040 (E2004) for ISO. The bearing housing shall be sealed to prevent contamination of the lubricant. The oil fill hole at the top of the housing shall be plugged. No vented constant level oiler shall be used. The housing shall be sealed with bearing isolators. A magnetic drain pug shall be used. A large, easy to read, 25.4 mm (1 in) sight glass shall be used. The impeller clearance shall be set by the micrometer adjuster method. Indicators which represent 0.102 mm (0.004 in) of axial impeller travel shall be cast into the bearing carrier. This allows accurate impeller clearance to be established externally without the use of measurement devices. The bearing carrier threads shall be protected by two o-rings.

Coupling Guard
Shall be of the clamshell design. It shall extend from the motor to the bearing housing, but shall not be attached to either. The guard shall be bolted to the baseplate.

Baseplate
Shall be constructed of corrosion resistant polymer concrete. Baseplate shall be drilled and tapped to accommodate various size motor frames with reinforced inserts.

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Typical Applications

Typical Applications for Plastic Lined Pumps

- Production of hydrochloric, acetic, sulfuric, nitric, and many other acids, caustic soda, etc.
- Purification and concentration of waste acid
- Intermediate and base products used in pharmaceuticals
- Treatment of chemical effluents / waste water (e.g., acid, caustics, solvents, etc.)
- Chemical processes containing corrosive media
- Production base products for fertilizers
- Chlorination plants
- Galvanizing and pickling lines
- Dosing stations for waste water treatment plants
- Mining industry for the chemical extraction of metals out of the metal ore
- Production of herbicides, insecticides, pesticides
- Multi-purpose plants for the fine-chemical industry

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Representative Installation Lists

Information not provided

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Competitive Analysis

A Goulds - Model 3198 / 3107

1. Dimensional Standards
   a. ANSI B73.1

2. Wet End Materials
   a. Virgin Teflon (PFA) rated to 150°C (300°F)

3. Hydraulic Capacities
   a. 170 m^3/h (750 gpm)
   b. 122m (400 ft)

4. Impeller Type – Open with back pump out vanes (metal core)

5. Bearing Housing – Standard X-Series available (STX, MTX)
   a. Standardize on carbon filled PFA labryinth oil seals

6. Sizes
   a. 1x1-6, 1.5x3-7, 3x1.5-10, 4x3-10, 4x3-13

7. Seal Chamber – flat plate style utilizes an auxilliary stuffing box or “clamped” style seal seats.

8. Price – (1.5x3-7 PFA lined DCI armor) – $3326.00 USD

9. Potential Market Strengths
   a. Goulds name recognition
   b. Virgin PFA material as standard – rated to 150°C (300°F)
   c. X-Series power end interchangeability

10. Potential Market Weaknesses
    a. Limited direct sales force (essentially move product entirely through distribution network)
    b. Open impeller design relies on critical setting point which proves difficult with fluoropolymer pumps
    c. Limited on seal selections – can not utilize popular seal types
    d. Flat rear cover plate has no seal chamber. Requires auxiliary gland
    e. Dated product should prove to be higher in price then new S-Series
    f. Require a metal sleeve with double seal selections

B. Richter – Model SCK

1. Dimensional Standards
   a. ISO 2858 / DIN 24256

2. Wet End Materials
   a. PFA, PTFE, TFA – rated to 150°C (300°F)
   b. PE-RCH 1000, PP – rated to 80°C (176°F)
   c. PVDF – rated to 110°C (230°F)
   d. Optional metal impeller versions – Hastelloy®, titanium, etc.

3. Hydraulic Capacities
   a. 300 m^3/h (1320 gpm)
   b. 90 m (300 tdh)

4. Impeller Type – semi-open or closed-designed radial impeller
   a. Protected against reverse rotation

5. Bearing Housing – standard is permanently-greased ball bearings
   a. Shaft constructed of high-strength stainless steel
   b. Closed-coupled construction available up to 50-200 size

6. Sizes
   a. 25-160
      32-160
      40-200
      50-200
      80-200
      50-250
      100-250
      125-315

7. Seal Chamber – Flat plate design.
   a. Offer full range of single and double mechanical seal options

8. Price – (32-160 PFA lined GGG40 DCI armor. Stainless steel with ceramic sleeve and double seal – $5300.00 USD

9. Potential Market Strengths
   a. Richter name recognition and historic market base
   b. Wide material range
   c. Broad hydraulic coverage
   d. Available accessories to customize the pump package
   e. Considered a very technically sound pump

10. Potential Market Weakness
    a. Major weakness is COST of pump
    b. Seals can be considered “unique” arrangements

®Hastelloy is a registered trademark of Haynes International.

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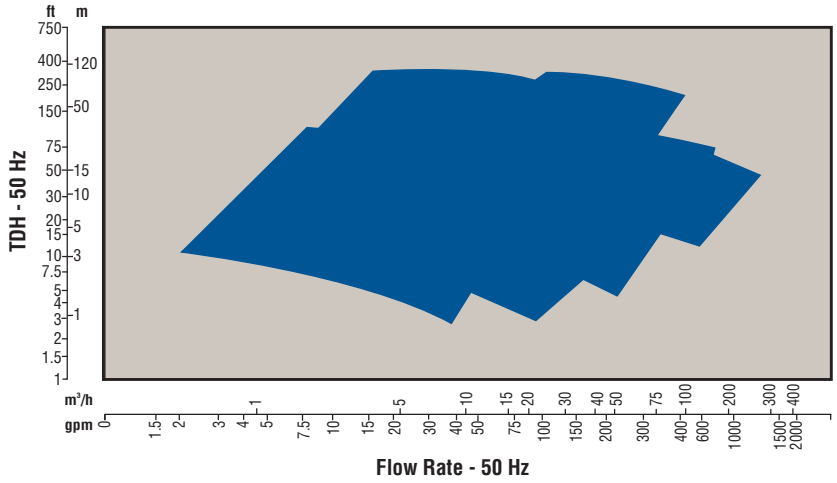
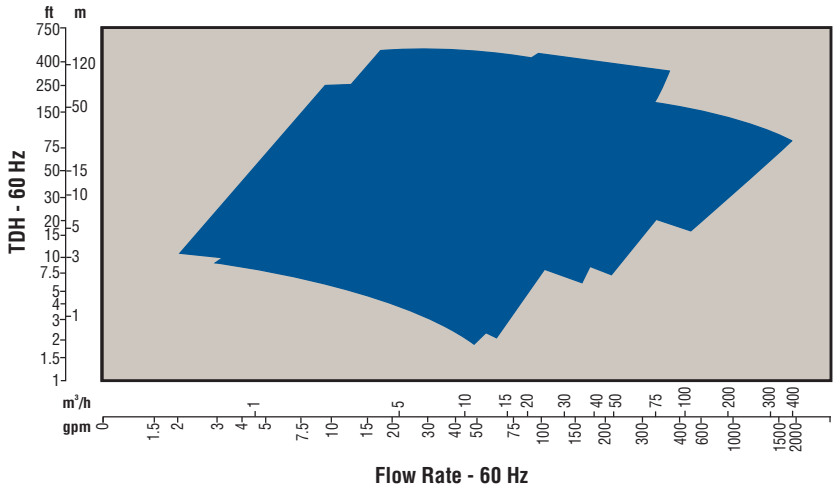
Coverage Charts

S-Series ISO Range Chart



S-Series ANSI Range Chart



Performance Curves

The PolyChem product line is fully supported in Affinity™ and performance curves can be generated and printed there. Flowserve Pump Division's Affinity

Pump Selection Program Guidelines

Selection Checklist

Listed below are a series of recommended items to consider when properly selecting a PolyChem pump for an application:

1. Review material (PFA) compatibility with process conditions
   Consider mechanical seal components material compatibility
   Refer to Materials and Product Design Sections

2. Review "Application Limitations"
   See below

3. Use latest version of Affinity software containing PolyChem to size and evaluate.

4. Use Affinity to develop data sheet (Flowserve Sales Offices – U.S.)
   For all those sales offices that can not access Affinity, please use the blank data sheets appearing in section 15.

5. Review / Select instrumentation options
   Refer to Product Description section for additional information

Application Limitations

- Viscosity: 1000cP
- Solids: 3000 micro size
- Temperature: -30°C to 150°C (-20°F to 300°F)
- Max. Working Pressure: Refer to Pressure Temperature Curve

Chemical Compatability

One of the inherent benefits of non-metallic pumps constructed of PFA fluoropolymer is that the material is relatively inert to all aggressive chemicals found in the Chemical Process Industries (CPI). Unlike metallic pumps, PFA pumps enjoy the flexibility of being utilized in various mixed chemical and batch processes. Also, they maintain a long life cycle due to the fact that there is no gradual corrosive degradation as found in metallic pumps.

Refer to the PFA column in the Guide to the Selection of Durco Corrosion Resisting Non-Metallics **(Bulletin A/4p)** for process compatibility.

In the interest of eliminating concerns with regards to whether or not carbon additives may cause adverse conditions in terms of corrosion resistance, the Flowserve Materials Engineering Department states that the carbon reinforced materials will still meet 99% of our pursuant market applications in the Chemical Process Industries. However, per Materials Engineering, there are two particular services at various concentrations and temperatures that are of concern regarding the presence of carbon reinforcements:

- Nitric Acid (Consult Materials Engineering for all applications)
- Sulfuric Acid (For 96%≠ to 300°F – Consult Materials Engineering)

Until the upper limits of both Nitric and Sulfuric Acid are defined, please consult Materials Engineering should a suspect process be inquired for the PolyChem line. As with any Flowserve pump application in terms of material compatibility:

WHEN IN DOUBT - CALL!

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Drivers, Mechanical Seals and Accessories

a. *Drivers, mechanical seals, couplings, instrumentation, insulation, lube oil systems, and seal flush accessories*
Information not provided

b. *Baseplates, lube oil piping, coupling guard*
Information not provided

c. *Export requirements for buyouts*
Information not provided

d. *Accessory Prices*
Refer to Affinity

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Optional and Alternate Configurations

Information not provided

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Aftermarket and Recommended Spare Parts

The decision on what spare parts to stock varies greatly depending on many factors such as the criticality of the application, the time required to buy and receive new spares, the erosive/corrosive nature of the spare part. The IOM and the attached cross sectional parts lists identify the parts for a typical PolyChem S-Series pump.

Typically the same parts recommended for a Mark 3 standard pump for either critical or non-critical services should be followed. Listed below are some general suggestions. This list should serve only as a guideline and should be modified based on the application or customer needs:

S-Series Recommended Spare Parts		
Item No.	**Description**	**Service**
2200	Impeller	Critical
4610.8	O-ring gasket - impeller	Critical
2100	Shaft	Critical
4310.1	Oil seal	
3011	Bearing - inboard	
3013	Bearing - outboard	
4310.2	Oil seal - outboard	
2400	Sleeve	Critical
4590.3	Gasket - gland	
4610.2	O-ring - carrier	

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FAQs (Frequently Asked Questions)

Information not provided

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Typical User Instructions (formerly IOMs)

PolyChem S-Series Pump User Instructions

or see Flowserve.com

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Submittal Documentation (Software)

Information not provided

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Performance Testing

Information not provided

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Sales Policies

General Information

All Durco PolyChem M & S-Series pumps will be marketed through the Flowserve Pump Division's (FPD) field sales organization, authorized distributors and sales representatives as well as Flowserve subsidiaries and authorized licensees. Flowserve reserves the right to review market areas and distribution alternatives to determine the best means of marketing the product. The product line is grandfathered by any agreement pertaining to any other product line except where contract violations exist (i.e., competing lines, etc.)

The product shall be sold and distributed in accordance with Flowserve's standard business practices. Equipment warranties are limited to our standard policies, unless previously approved by the FPD Sales and Marketing department.

Order Entry

All pumps will be built in our Houston, TX USA FPD Quick Response Center.

All orders for PolyChem M & S-Series pumps and parts to be shipped from our Houston QRC must be entered in the FPD Sales Office Automation Program (S.O.A.P.)

Orders from international locations should follow current procedures in place.

All quotes must be converted to orders to ship from our Houston location.

Non-US locations requiring support should utilize their current factory and service representatives prior to contacting our Houston QRC directly.

Technical Assistance and Support

Distributors and representative should contact the Flowserve regional sales office for assistance. If further assistance is required, please contact the following FPD personnel:

Technical Support Contact List

Department	Contact	Phone	Fax	e-mail	Timezone
PolyChem Sales	Dave Braner	757.485.8035	757.485.8191	Dbraner@flowserve.com	US – ET
PolyChem M & S - Series Engineering	Kees VanDerSluijs	937.226.4374	937.226.4130	Kvandersluijs@flowserve.com	US – ET

Pricing for Pumps and Parts

The price sheets for the PolyChem S-Series pump are located on the FPD Literature On-Demand website. The document number is FPD-1059 and the address is:

http://www.fpdlit.com/pdf/fpd-1059.pdf

The following price sheets cover the PolyChem S-Series pumps:
- PCM-ANSI PolyChem S-Series ANSI Pumps
- PCM-ANSI-Mod PolyChem S-Series Mods
- PCM-ISO PolyChem S-Series ISO Pumps
- PCM-ISO-Mod PolyChem S-Series Mods

Discount Schedules, Distributor Multiplier and Special Pricing

Many PolyChem end-users have some sort of contractual pricing agreement with FPD. If there are questions concerning who might have an agreement or specifics regarding any agreement, please contact Dave Braner (see previous contact information). Requests for special pricing should also be directed to Dave Braner, (again, see contact list).

WORLDWIDE TERMS AND CONDITIONS OF SALE

1. **Applicability:**

   These Worldwide Terms and Conditions of Sale ("Terms") shall govern all sales of Seller's Equipment or Services to Buyer "(Order"). These Terms supersede any prior written or oral agreement, understanding, representation or promise, and any pre-printed or standard terms and conditions contained in Buyer's request for quote, purchase order, invoice, order acknowledgement, or similar document. These Terms may not be amended, supplemented, changed or modified except by concurrent or subsequent written agreement, signed by an authorized representative of Seller and Buyer. Seller's acknowledgement of Buyer's purchase order shall not constitute acceptance of any terms and conditions contained therein, regardless of how such terms and conditions may be prefaced or described.

2. **Definitions:**

   "Buyer" means the company who accepted Seller's offer or is named in the Order.

   "Equipment" means all equipment and parts manufactured and sold by Seller.

   "Seller" means the company named on the Order for Equipment or Services.

   "Service(s)" means work, direction of work, technical information or technical consulting and advice or other services furnished by Seller to Buyer.

3. **Delivery/Suspension/Force Majeure:**

   For the delivery of Equipment within the United States, delivery shall be made EXW (in accordance with INCOTERMS 2010, as amended) Seller's plant. For the delivery of Equipment outside the United States, delivery shall be made FCA Seller's plant. Shipping dates are approximate and are based on prompt receipt of all necessary information. In case of delay in furnishing complete information, dates of shipment may be extended for a reasonable time. In the event Seller provides transport services, these will be quoted as a lump sum price based on destination and shipping mode.

   In the event Buyer requests a delay or suspension in completion and/or shipment of the Equipment or any part thereof for any reason, the parties shall agree upon any cost and/or scheduling impact of such delay and all such costs to Buyer's account. Any delay period beyond thirty (30) days after original scheduled shipment date shall require Buyer to (i) take title and risk of loss of such Equipment, and (ii) make arrangements for storage of such Equipment with the Seller or other party. Seller's invoice, which is contractually based on shipment, shall be issued upon Seller's readiness to ship the Equipment.

   Seller shall not be liable for delay in delivery due to causes beyond its reasonable control including, but not limited to, acts of God, acts of government, acts of Buyer, fires, labor disputes, boycotts, floods, epidemics, quarantine restrictions, war, insurrection, terrorism, riot, civil or military authority, freight embargoes, transportation shortages or delays, unusually severe weather or inability to obtain necessary labor, materials or manufacturing facilities due to such causes. In the event of any such delay, the date of delivery shall be extended for a length of time equal to the period of the delay.

4. **Warranty:**

   Subject to the limitations in Section 17 herein, Seller warrants that the Equipment shall be free from defects in material, workmanship and title. If it appears within twelve (12) months from the initial Equipment startup or until eighteen (18) months after shipment, whichever occurs first, that the Equipment or any part thereof does not conform to this warranty, and Buyer so notifies Seller within a reasonable time after discovery, Seller shall thereupon promptly correct such nonconformity by repair or replacement EXW Seller's factory or service center. Seller's sole obligation and Buyer's sole remedy under this warranty is repair or replacement at Seller's election. Seller's warranty obligation for Services shall be the earlier of either ninety (90) days from the date of initial startup or six (6) months after completion of the Service work. Seller shall not be responsible for any on-site costs, including removal and reinstallation of any warranted Equipment. Buyer agrees to provide Seller reasonable and clear access to its Equipment which may include removal of materials or structures as well as supplying any equipment, materials or structures which are necessary to provide reasonable access to the Equipment being repaired or replaced. All Equipment repaired or replaced will be re-warranted only for the remainder of the original warranty period. **THE EXPRESS WARRANTY SET FORTH HEREIN IS THE EXCLUSIVE WARRANTY OF SELLER, AND NO OTHER WARRANTY, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE, SHALL APPLY**. Seller is not responsible for repairs or alterations made by others without mutual written agreement between Seller and Buyer. Seller does not warrant the Equipment or any repair/replacement part against the effects of erosion, corrosion, or normal wear and tear due to operation or the environment. The warranty and remedies set forth herein are conditioned upon proper storage, installation, use and maintenance of the Equipment in all material respects, and in accordance with Seller's written recommendations. Replacement parts or repairs furnished under this warranty shall be subject to the warranty provisions herein for the remaining original warranty period.

5. **Payment:**

   All prices are net cash thirty (30) days from date of Seller's invoice, unless otherwise stated in Seller's proposal, quotation or offer. Should Buyer for any reason default in the payment of the contract of purchase, Buyer agrees to pay all collection costs, attorney fees and expenses incurred in collecting payment, including interest on the amount due at the maximum legal rate. All transportation, insurance and similar charges incident to delivery shall be paid by Buyer. Seller shall issue its invoice upon shipment, or upon notice to Buyer that Seller is ready to ship, whichever is earlier. Depending on the value of the order, Seller may at its sole discretion require progress payments.

   If Buyer's financial condition is or becomes unsatisfactory to Seller, Seller reserves the right to: (a) require payment from Buyer on a Cash In Advance (CIA) basis; (b) require a letter of credit or other acceptable security before shipment; or (c) cancel shipment at any time prior to delivery of the Equipment without further obligation or liability on the Seller's part.

6. **Changes:**

   Buyer may request modifications as to the amount, scope and/or nature of the Equipment to be supplied by a written change request. If, in the opinion of Seller, any modification will affect the agreed fixed price and/or time of delivery, Seller will notify Buyer thereof in writing and will not be obligated to perform any modification unless agreed to by Seller. Buyer shall confirm that such change is authorized and accepted by issuing an Order revision.

7. **Buyer Cancellation:**

   Buyer may cancel this Order only upon written notice and payment to Seller of reasonable and proper cancellation charges. Notwithstanding the foregoing, Buyer reserves the right to cancel any portion of an Order affected by any insolvency or suspension of Seller's operations or any petition filed or proceeding commenced by or against Seller under any state or federal law relating to bankruptcy, arrangement, reorganization, receivership or assignment for the benefit of creditors.

8. **Set-off:**

   All amounts that Buyer owes Seller under an Order shall be due and payable according to the terms of an Order. Buyer is prohibited from, and shall not set off such amounts or any portion thereof, whether or not liquidated, against sums which Buyer asserts are due it, its parent affiliates, subsidiaries or other divisions or units under other transactions with Seller, its parent affiliates, subsidiaries or other divisions or units.

9. **Non-Disclosure and Non-Use of Sellers' Information:**

   Buyer agrees that it will not use Seller's data for the manufacture or procurement of Equipment which are the subject of an Order or any similar Equipment, or cause said

continued

Equipment to be manufactured by, or procured from, any other source or reproduce said data and information or otherwise appropriate them without the written authorization of the Seller. Buyer agrees that it will not disclose or make available to any third party any of Seller's data or other information pertaining to this Order which is proprietary to Seller without obtaining Seller's prior written consent.

10. Special Tooling and Data:

Unless otherwise agreed in writing, all material, software, data processes, equipment, facilities and special tooling, which term includes but is not limited to jigs, dies, fixtures, molds, patterns, special taps, special gages, special test equipment, other special equipment and manufacturing aids and replacements thereof, used in the manufacture of the Equipment covered by an Order shall be and remains the property of Seller. Seller retains all rights, title and interest in drawings, engineering instructions, specifications, and all other written data, if any, furnished and/or specified to be supplied with the Equipment.

11. Export/Import

Buyer agrees that it will comply with all applicable import and export control laws and/or regulations, including without limitation those of the United States and/or other jurisdictions from which the Equipment and/or technology may be supplied or to which the Equipment and/or technology may be shipped. In no event shall Buyer use, transfer, release, import, export or re-export the Equipment and/or technology in violation of such applicable laws and/or regulations.

12. Taxes:

Seller's price, unless otherwise agreed, shall be fixed and does not include, and Seller is not responsible for, payment of any tax levied for sales, use, excise, value-added, goods and services, business (franchise or privilege) or any duties, charges or other such taxes. Seller is only responsible for any tax imposed on Seller, by taxing authorities in Seller's jurisdiction, which are based on Seller's revenue, income, net income, net assets, net worth, or capital or any taxes imposed in lieu thereof. If Seller is required to pay any taxes or other charges that are the responsibility of the Buyer, then Buyer shall promptly reimburse Seller those amounts.

13. Assignment:

Neither party shall assign an Order or any portion thereof without the advance, written consent of the other party, which consent shall not be unreasonably withheld.

14. Waiver/Severability:

Failure by Seller to assert all or any of its rights upon any breach of an Order shall not be deemed a waiver of such rights either with respect to such breach or any subsequent breach, nor shall any waiver be implied from the acceptance of any payment of service. No waiver of any right shall extend to or affect any other right Seller may possess, nor shall such waiver extend to any subsequent similar or dissimilar breach.

If any portion of these Terms are determined to be illegal, invalid, or unenforceable, for any reason, then such provision shall be deemed stricken for purposes of the dispute in question and all other provisions shall remain in full force and effect.

15. Applicable Law/Disputes:

This Order shall be interpreted in accordance with the laws of the jurisdiction in which the Seller's facility accepting the Order hereunder is located, exclusive of any choice of law provisions. The Seller and Buyer expressly agree to exclude from this Order the United Nations Convention on Contracts for the International Sale of Goods, 1980, and any successor thereto and the Contracts (Rights of Third Parties) Act of 1999.

Except as otherwise specifically agreed in writing by Buyer and Seller, any dispute relating to an Order placed by a Buyer incorporated in the United States which is not resolved by the parties shall be adjudicated by a court of competent jurisdiction in the state of Texas. All disputes arising out of or in connection with an Order placed by a Buyer incorporated outside the United States that shall be finally settled by binding arbitration in London, England, under the Rules of Arbitration of the International Chamber of Commerce then in effect by one or more arbitrators appointed in accordance with said Rules.

16. Compliance With Laws/Anti-bribery:

Seller and Buyer agree to comply with all applicable laws, regulations, codes and standards, including but not limited to those of the United States and other jurisdictions where the parties conduct business. Additionally, Buyer has not and will not offer, promise, authorize or make, directly or indirectly, any payments (in money or any other item of value), contributions or gifts to any non-U.S. government agency, department, official or government owned or controlled entity in order to obtain or retain business, or secure any other improper business advantage, which would violate the U.S. Foreign Corrupt Practices Act and/or any other applicable anti-bribery laws.

17. Limitation of Liability/Exclusion of Consequential Loss:

The remedies set forth herein are exclusive, and the total liability of the Seller with respect to this Order, or any breach thereof, whether based on contract, warranty, tort (including negligence), indemnity, strict liability or otherwise, shall not exceed the Order price of the specific Equipment or Service which gives rise to the claim.

In all cases where Buyer claims damages allegedly arising out of defective or nonconforming Equipment or Services, Buyer's exclusive remedies and Seller's sole liability shall be those specifically provided for under Section 4 "Warranty."

IN NO EVENT, WHETHER ARISING BEFORE OR AFTER COMPLETION OF ITS OBLIGATIONS UNDER THE CONTRACT, SHALL SELLER BE LIABLE FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES OF ANY KIND (INCLUDING BUT NOT LIMITED TO LOSS OF USE, REVENUE OR PROFITS, INVENTORY OR USE CHARGES, COST OF CAPITAL, OR CLAIMS OF CUSTOMERS) INCURRED BY THE BUYER OR ANY THIRD PARTY.

18. General Provisions:

(a) No Action, regardless of form, arising out of transactions under the Order, may be brought by the Buyer more than one (1) year after the cause of action has accrued.

(b) Any modification to these Terms must be set forth in a written instrument signed by a duly authorized representative of Seller.

(c) In the event Buyer has reason to believe the Equipment could be subject to a claim for damages or personal injury, Buyer shall immediately provide Seller with written notice of such claim, and shall provide Seller reasonable opportunity to inspect said Equipment and/or investigate the basis for such potential claim.

(d) **UNLESS OTHERWISE SPECIFICALLY PROVIDED IN SELLER'S QUOTATION, EQUIPMENT AND SERVICES HEREUNDER ARE NOT INTENDED FOR USE IN ANY NUCLEAR OR NUCLEAR RELATED APPLICATIONS. IF SELLER'S QUOTATION EXPRESSLY STATE THAT THE EQUIPMENT AND SERVICES ARE INTENDED FOR NUCLEAR OR NUCLEAR RELATED APPLICATIONS, SELLER'S ADDENDUM (P-62) FOR NUCLEAR LIABILITY PROTECTION IS HEREBY INCORPORATED.** Buyer (i) accepts the Equipment and Services in accordance with the restriction set forth in the immediately preceding sentences, (ii) agrees to communicate such restriction in writing to any and all subsequent purchasers or users, and (iii) agrees to defend, indemnify and hold harmless Seller from any and all claims, losses, liability, suits, judgments and damages, including incidental and consequential damages, arising from the use of the Equipment or Services in any nuclear or nuclear related applications, whether the cause of action be based in tort, contract or otherwise, including allegations that the Seller's liability is based on negligence or strict liability.

19. Translations/Governing Language:

English shall be the legal language of this Order, and all parties waive any right to use and/or rely upon any other language, translation or interpretation. The parties specifically agree that in the case of any inconsistencies or interpretation disputes, the English language version shall control.

FLOWSERVE

POLYCHEM S-SERIES

ANSI AND ISO NON-METALLIC CHEMICAL PROCESS PUMPS

Product Reference Manual

FPD-1138M

1 Product Summary and Description	2 Standard and Optional Construction	3 Pump Features and Benefits	4 Product Brochure
5 Product Presentation	6 Pump Cross Sectional Drawings	7 General Arrangement Drawings	8 Engineering Data
9 Standard Lead Times	10 Typical Specifications	11 Typical Applications	12 Representative Installation Lists
13 Competitive Analysis	14 Coverage Charts	15 Pump Selection Program Guidelines	16 Drivers, Mechanical Seals and Accessories
17 Optional and Alternative Configurations	18 Aftermarket and Recommended Spare Parts	19 FAQs (Frequently Asked Questions)	20 User Instructions (Formerly IOMs)
21 Submittal Documentation (Software)	22 Testing Capabilities	23 Pricing for Pumps, Parts and Accessories	24 Terms and Conditions

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