

product news No.50

August 1, 1975

SUBJECT: BLUE AFRICAN ASBESTOS AND TEFLON PACKING

MODIFICATION: Elimination of Blue African Asbestos and Teflon Packing as Standards.

HISTORY: Blue African Asbestos packing has been our standard packing for these pumps: 3196, 3796, 3965.

Due to shortages of raw material, we can no longer maintain sufficient stock to continue this policy.

CHANGE: Replace Blue African Asbestos with interlaced braided white asbestos, each strand impregnated with an acid-resistant lubricant and graphited. Rings are die-formed and suitable for temperatures up to 300° F (149° C). Designation will be Goulds drawing 92423 and approved vendors are: Anchor 130S, John Crane 5810 SP, Garlock 731, SEPCO ML-420, Johns-Manville C-255.

(This new packing meets E. I. DuPont's packing code R-16.)

HISTORY: Teflon packing has been our standard packing for all sizes of Model 3196 in constructions more noble than 316SS. It is listed as an "extra" on several other lines. Our current offering is becoming more costly and is in short supply with long deliveries. This Multi-Filament Teflon Yarn has excellent corrosion resistance to chemicals and solvents. However, it has poor mechanical properties and poor heat transfer characteristics. For the majority of services where corrosion resistance is not required, other less expensive packings are more readily available. Examples are white asbestos or teflon-impregnated asbestos, both of which have superior mechanical packing properties.

CHANGE: Replace the present Teflon packing (as now standard on 3196 constructions over 316SS) with Teflon Impregnated Asbestos packing (interlaced braided asbestos teflon suspensoid and a special lubricant for run-in). Rings are die-formed and suitable for temperatures up to 300° F (149° C). Designation will be Goulds drawing 92424 and approved vendors are: Argo 715, Chesterton 322, Crane C-58 Interlaced, Garlock 5862, Johns-Manville C-2009, SEPCO ML-2253.

(This packing meets E. I. DuPont's packing code R-53.)

This packing will be listed as an "extra" in the catalog where Teflon packing is now listed. The original Multi-Filament type will also be listed as an "extra" for those customers who require it.

The following chart is an aid in packing selection:

SERVICES		Blue African Asbestos	White Asbestos	Teflon	Teflon Impregnated Asbestos
Acid	Mild	X	X	X	X
	Corrosive	X		X	
Alkalites	Mild	X	X	X	X
	Corrosive	X		X	
Oils	Petroleum		X	X	X
	Synthetics			X	X
Solvents	Aromatic			X	X
	Aliphatic			X	X
Water & Salt Solution			X	X	X
Fluids Where Non Contam. Req'd				X	X

On repairs white asbestos will be substituted where blue african was supplied. Teflon packing will be supplied where it was supplied on the original pump. If customer now requires teflon impregnated asbestos, this requires a special record product charge.

Between the documents we have, and the list below, (model numbers are on the far right column) the model numbers affected (affiliated with blue asbestos packing/gasket products) are as follows:

3175, 3189, 3195, 3196, 3316, 3360, 3405, 3415, 3420, 3706, 3735, 3796, 3965

3175: Horizontal Large End Suction Pulp & Paper Process Centrifugal Pump (industrial)

3189: Still researching, old model

3195: same

3196: Horizontal ANSI Chemical Process Centrifugal Pump

3316: Horizontal Axial Split Two Stage Centrifugal Pump

3360: Multistage pump for pipeline, waterflood, descaling, refinery, boiler feed, and other moderate of high head applications temps up to 400 degrees, pressures to 1200 PSIG.

3405: Single stage, double suction pumps, for crude, product and service water, pipelines, water works, utility feed; a wide variety of industrial, municipal and **marine** services.

3415: same processes as 3405, just different model number (all 3400 series can be used for **marine** service)

3420: Large capacity, single stage, double suction pumps designed for a wide variety of industrial, municipal and **marine** applications.

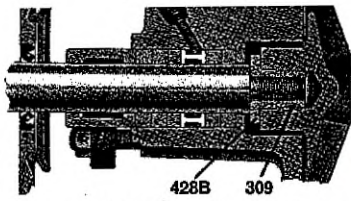
3706: Non-metallic chemical process, severe corrosive/abrasive services, metal-sensitive or sticky liquids.

3735: High temperature/pressure services, off site, transfer and special services, heat transfer liquids.

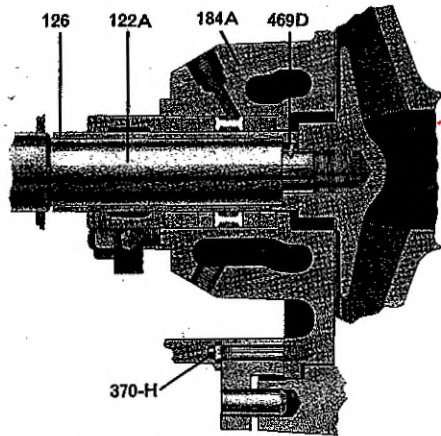
3796: Horizontal ANSI Chemical Process sealed self priming end suction centrifugal pumps.

3965: In-line process pumps; process, transfer and general service; corrosive and volatile.

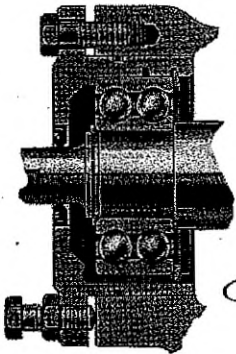
Temperatures to 350 degrees, pressure to 400 PSIG.



Group "S" Construction Showing Non-Cooled Stuffing Box and Solid Shaft.



Water Cooled Stuffing Box Showing Shaft Sleeve Construction and Frame Unit Holding Stud.



Optional Double Row Bearings for Models 3196-STD and 3197-STD.

PARTS LIST

Item No.	No. Req'd Per Pump	Part Name	STANDARD MATERIALS OF CONSTRUCTION								INTERCHANGEABILITY			
			All Ductile Iron	All Bronze	All 316 S.S.	All GA-20	All ISO-B	All ISO-C	All Monel	All Nickel	3197	3196		
105	1	Lantern Ring	Glass Filled Teflon								T	S	M	L
106	1 Set	Stuffing Box Packing	Blue African Asbestos								T	S	M	L
107	1	Gland—Packed Box	316								T	S	M	L
111	1	Bearing Housing	1000								T	S	M	L
112	1	Ball Bearing—Outboard	Steel								T	S	M	L
113-A	1	Bearing Frame Breather	Steel								T	S	M	L
122	1	Shaft (Less Sleeve)	2237	316		C-20	Hast-B	Hast-C	Monel	Nickel	T	S	M	L
122-A	1	Shaft (With Sleeve)	2238			316					T	S	M	L
123	1	Deflector	Glass Reinforced Nylon								T	S	M	L
126	1	Shaft Sleeve	420†	316		C-20	Hast-B	Hast-C	Monel	Nickel	T	S	M	L
132	1	Eyebolt	Steel								—	S		
168	1	Ball Bearing—Inboard	Steel								T	S	M	L
210	1	Gland Packing	Blue African Asbestos								T	S	M	L
228	1	Bearing Frame	1000								T	S	M	L
247	1	Drip Basin	316								T	S		
251	1	Constant Level Oiler	Glass & Steel								T	S		
309	1	Shaft Bushing	316								—	S	Not Req'd	
332-A	1	Oil Seal (Outboard)	Buna Rubber								T	S		
333-A	1	Oil Seal (Inboard)	Buna Rubber								T	S	M	L
353	2	Gland Stud	316								T	S		
355	2	Gland Stud Nut	304								T	S		
360-A	1	Gasket (Bearing Frame to Frame Adapter)	1/4" Vellumoid								①	S		
361	1	Retaining Ring (Shaft)	Steel								T	S	M	L
361-A	1	Retaining Ring (Bearing Housing)	Steel								T	S	M	L
370-A	4-12	Hex Head Mach. Bolt (Frame Adap. to Casing)	Steel			304*					T	S		
370-B	4	Hex. Head Mach. Bolt (Frame Adapter to Bearing Frame)	Steel								①	S		
370-C	3	Hex Head Tap Bolt (Bearing Housing)	Steel								S		M	
370-D	3	Hex Head Tap Bolt with Jam Nut (Impel. Adjust.)	Steel								S		M	
370-E	2	Hex Head Mach. Bolt with Lockwasher (Casing Foot to Casing) (Not Illus.)	Steel								③	S		
370-F	1	Dowel Bolt (Frame to Frame Foot)	Steel								①	S		
370-G	2	Hex Head Tap Bolt with Jam Nut (Bearing Frame Foot Adjustment)	Steel									S		
370-H	2	Hex Head Tap Bolt or Stud (Stuffing Box Cover to Frame or Frame Adapter)	Steel								T	S	M	L
412	1	"O"-Ring (Bear'g Hous'g)	Buna Rubber								T	S	M	L
428	1	Impeller Gasket	Teflon								T	S		
428-A	1	"O"-Ring (Impeller)	Teflon								—	S		
428-B	1	"O"-Ring (Shaft Bushing)	Teflon								—	S	Not Req'd	
469-A	2	Precision Aligner (Frame Adapter to Casing)	Steel								—	S		
469-B	2	Precision Aligner (Bearing Frame to Frame Adapter)	Steel								—	S		
469-C	2	Precision Aligner (Frame Adapter to Stuffing Box Cover)	420								—	S		
469-D	1	Roll Pin (Shaft Sleeve)	420									S		

① Optional *Steel on Model 3197

Complete Material Specification Table on page 19

CODE	MATERIAL AND SPECIFICATIONS
304	Wrought Stainless AISI type 304
316	Cast Stainless AISI-CF-8M
316	Wrought Stainless AISI type 316
420	Wrought Stainless AISI type 420
GA-20	Cast Goude-A-Loy 20 AISI CN-7MCO
C-20	Wrought Carpenter 20
1000	Cast Iron ASTM A48-50
1012	Ductile Iron, Heat Treated ASTM A395-50T Type 60-45-15
1103	Anti-Acid Bronze
2237†	Molybdenum Alloy Steel SAE 4150
2238	Steel SAE 4140 Hot Rolled Double Heat Treated
ISO-B	Cast ISO-B ASTM B336-58T
Hast-B	Wrought Hastelloy B ASTM B335-58T
ISO-C	Cast ISO-C ASTM B332-58T
Hast-C	Wrought Hastelloy C ASTM B336-58T
Monel	Cast (Goude 1119)
Monel	Wrought
Nickel	Cast (Goude 1601)
Nickel	Wrought

†Frame hardened to 500 Brinnell through Stuffing Box.

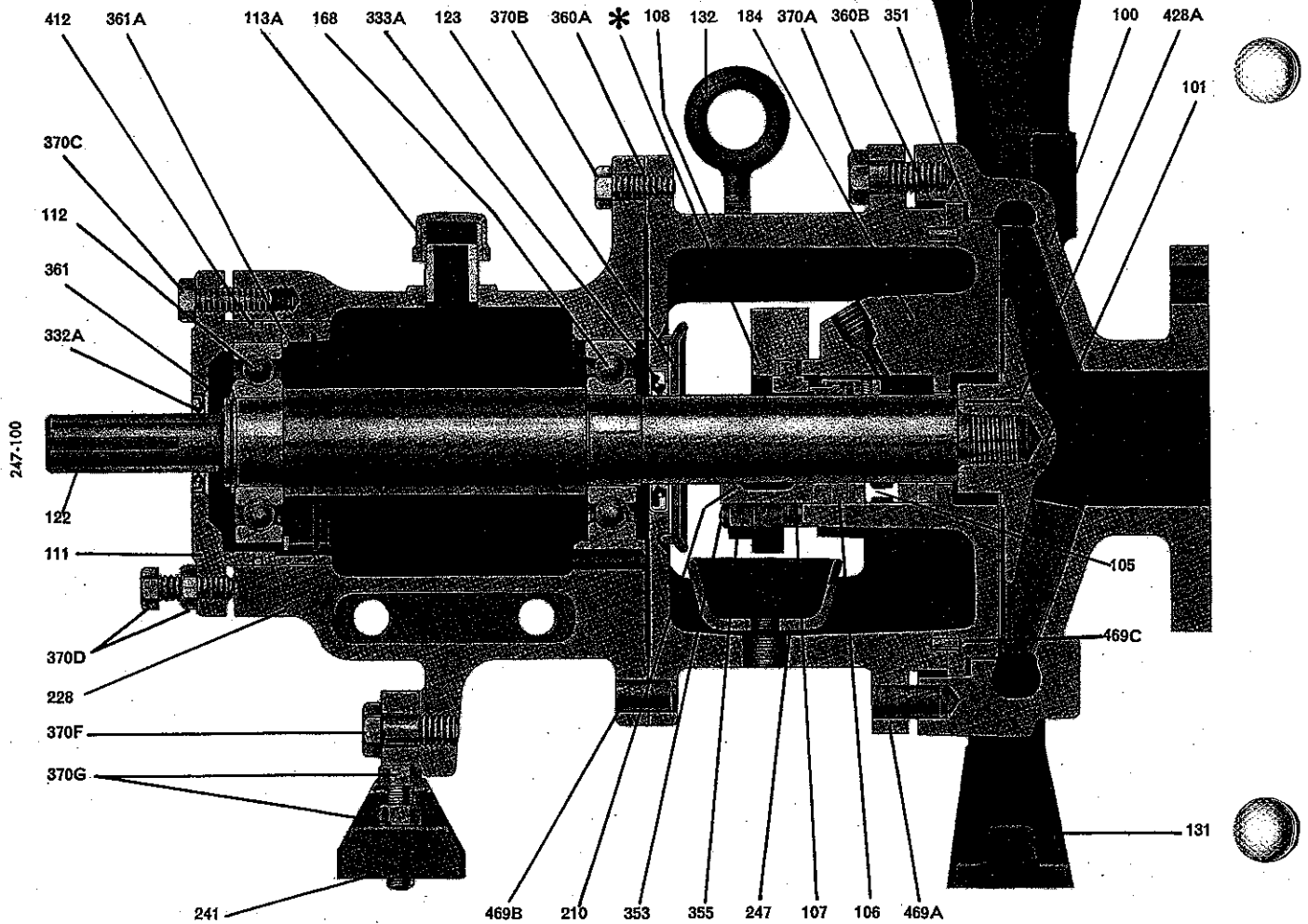
PUMP END PARTS—NUMBERS ON SECTIONAL END SHOWN IN BLUE

Item No.	No. Req'd Per Pump	Part Name	STANDARD MATERIALS OF CONSTRUCTION								INTERCHANGEABILITY BY CASING CLASS											
			All Ductile Iron	All Bronze	All 316 S.S.	All GA-20	All ISO-B	All ISO-C	All Monel	All Nickel	Model 3197	Model 3196										
100	1	Casing	1012	1103	316	GA-20	ISO-B	ISO-C	Monel	Nickel	1x1½-6 1½x3-6	6	8	10	11	13						
101	1	Impeller	1000	1103	316	GA-20	ISO-B	ISO-C	Monel	Nickel	1x1½-6 1½x3-6	6	8	10	11	13						
108	1	Frame Adapter	1000								①	6	8	10	11	13						
131	1	Casing Foot	1000								②	6	8	10	11	13						
184	1	Stuffing Box Cover, Standard, Model 3197	1012	1103	316	GA-20	ISO-B	ISO-C	Monel	Nickel	T	—	—	—	—	—						
184	1	Stuffing Box Cover, Standard, "S" Power End	1012	1103	316	GA-20	ISO-B	ISO-C	Monel	Nickel	—	6S	8S	10S	11S	—						
184	1	Stuffing Box Cover, Standard, "M" Power End	1012	1103	316	GA-20	ISO-B	ISO-C	Monel	Nickel	—	6M	8M	10M	11M	13M						
184	1	Stuffing Box Cover, Stand ard, "L" Power End	1012	1103	316	GA-20	ISO-B	ISO-C	Monel	Nickel	—	6L	8L	10L	11L	13L						
184-A	1	Stuffing Box Cover, Water Jacketed, Model 3197	1012	1103	316	GA-20	ISO-B	ISO-C	Monel	Nickel	T-A	—	—	—	—	—						
184-A	1	Stuffing Box Cover, Water Jacketed, "S" Power End	1012	1103	316	GA-20	ISO-B	ISO-C	Monel	Nickel	—	6S-A	8S-A	10S-A	11S-A	—						
184-A	1	Stuffing Box Cover, Water Jacketed, "M" Power End	1012	1103	316	GA-20	ISO-B	ISO-C	Monel	Nickel	—	6M-A	8M-A	10M-A	11M-A	13M-A						
184-A	1	Stuffing Box Cover, Water Jacketed, "L" Power End	1012	1103	316	GA-20	ISO-B	ISO-C	Monel	Nickel	—	6L-A	8L-A	10L-A	11L-A	13L-A						
241	1	Bearing Frame Foot	1000								③	8	11									
351	1	Gasket (Casing)	⅛" Thick Blue African Asbestos								6	6	8	10	11	13						
360-B	1	Gasket (Frame Adapter to Stuffing Box Cover)	.006" Thick Manila Paper								Not Req'd	6	8	10	11	13						

① Frame Adapter and Frame Foot are Integral with Frame on Model 3197.
③ Casing Foot is Integral with Casing on Model 3197.

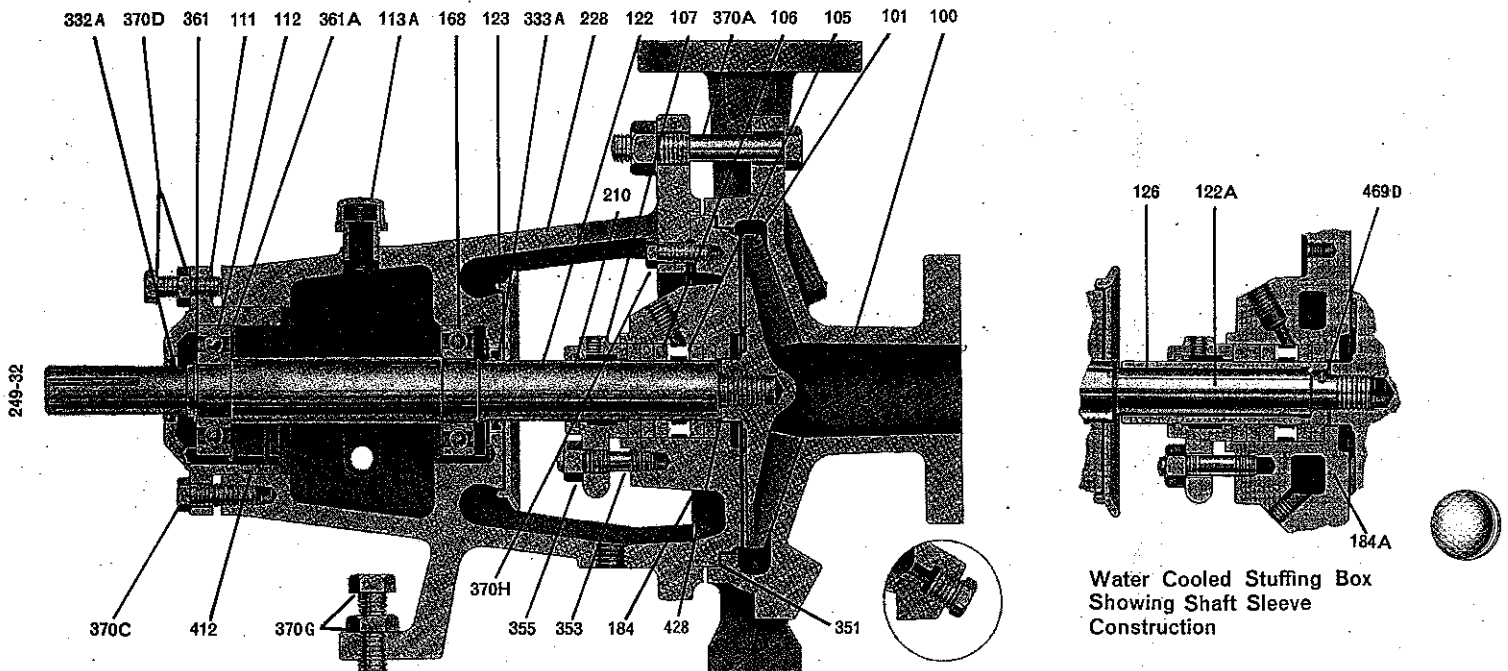
SECTION DRAWING

Model 3196-STD

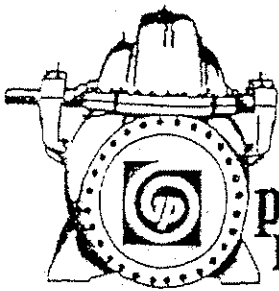


*Upper half of Stuffing Box shows Type 9 Unbalanced Mechanical Seal. Lower half shows Packing.

Model 3197-STD



Water Cooled Stuffing Box
Showing Shaft Sleeve
Construction



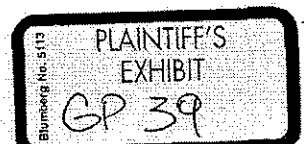
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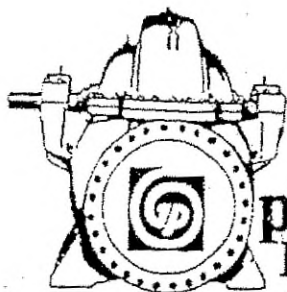
August 1, 1975

SUBJECT: STUFFING BOX PACKING

HISTORY: Goulds has furnished one spare ring of packing for each stuffing box for many years. This practice has often led to problems wherein the customer did not know how to use the extra ring.

MODIFICATION: Elimination of the spare ring of packing per packing set that had previously been furnished. Sufficient rings of packing will be furnished to pack the stuffing box, using the standard lantern ring.





product news No. 89

March 31, 1978

MODIFICATION:

Standard packing for all constructions is changed from Crane super seal #1 to white asbestos.

HISTORY:

Crane Packing Company is Goulds sole supplier of super seal #1. Because of a shortage of the long fiber asbestos used to manufacture super seal #1, Crane has been forced to substitute shorter asbestos fibers. This results in a coarse stiff packing. This requires excessive tightening of the packing gland to effect a seal at the shaft sleeve and prevent excessive leakage. Results are shorter packing and sleeve life. The interlaced braided white asbestos packing is much softer and flexible requiring less packing gland adjustment to effect a seal on the shaft sleeve.

DESCRIPTION:

Replace Crane super seal #1 with a packing that is an interlaced braided white asbestos with each strand impregnated with an acid resistant lubricant and graphited. The rings are die formed and suitable for temperatures to 300°F. (149°C). The packing meets DuPont packing code R-16; Approved vendors are as follows:

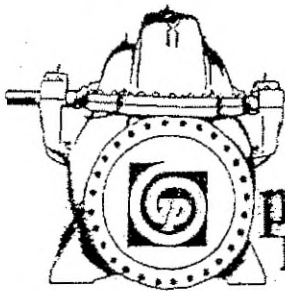
Anchor 1300S
John Crane 5811SP
Garlock 731
Johns-Manville C-225
Sepco ML-402

Goulds Drawing Number is:

S 92423-4
M 92423-2
L 92423-3

On repairs, the new packing will be furnished, unless otherwise specified.





product news No. 90

March 31, 1978

NOTE: The following information supersedes Product News #60 of 6/2/76

Modification:

Addition of Chesterton 880 mechanical seals for 3196, 3796, and 3996 ST and MT bearing frames.

History:

Due to increased usage of Chesterton seals to fill our customers' requirements, Goulds Pumps is adding the 880 1-3/8" and 1-3/4" seals with 316ss metal parts to our inventory.

Description:

1-3/8" seals for ST bearing frame

<u>Code</u>	<u>Goulds Part No.</u>	
880-11-E1W/Z1	92721-1137	Clamped Stationary
880-11-D1W/Z1	92721-2137	Clamped Stationary
880-11D sub 1 W/Z1	92721-4137	O-ring Mounted Stationary

1-3/4" seals for MT bearing frame

<u>Code</u>	<u>Goulds Part No.</u>	
880-14E1W/Z1	92720-1175	Clamped Stationary
880-14D1W/Z1	92720-2175	Clamped Stationary
880-14D sub 1	92720-4175	O-ring Mounted Stationary

The Chesterton 880 seal is a single balanced seal. It mounts on our standard shaft sleeve and requires no balancing step. The 880 seal is suitable for a stuffing box pressure of 500 PSI. It is available with Viton (code W), EPD (code Z) or Vanway O-ring code Q. Viton and EPD are standard and will be stocked. The 880 seal is available in 316, C-20, titanium and Hast. C

The Chesterton Code System

First letter faces

D	Carbon vs plated TC
D sub 1	Carbon vs solid tungsten carbide
E	Carbon vs ceramic

Second letter metal parts

1	316ss
2	C-20

Third letter

W	Viton
Z	EPD
Q	Vanway (teflon coated)

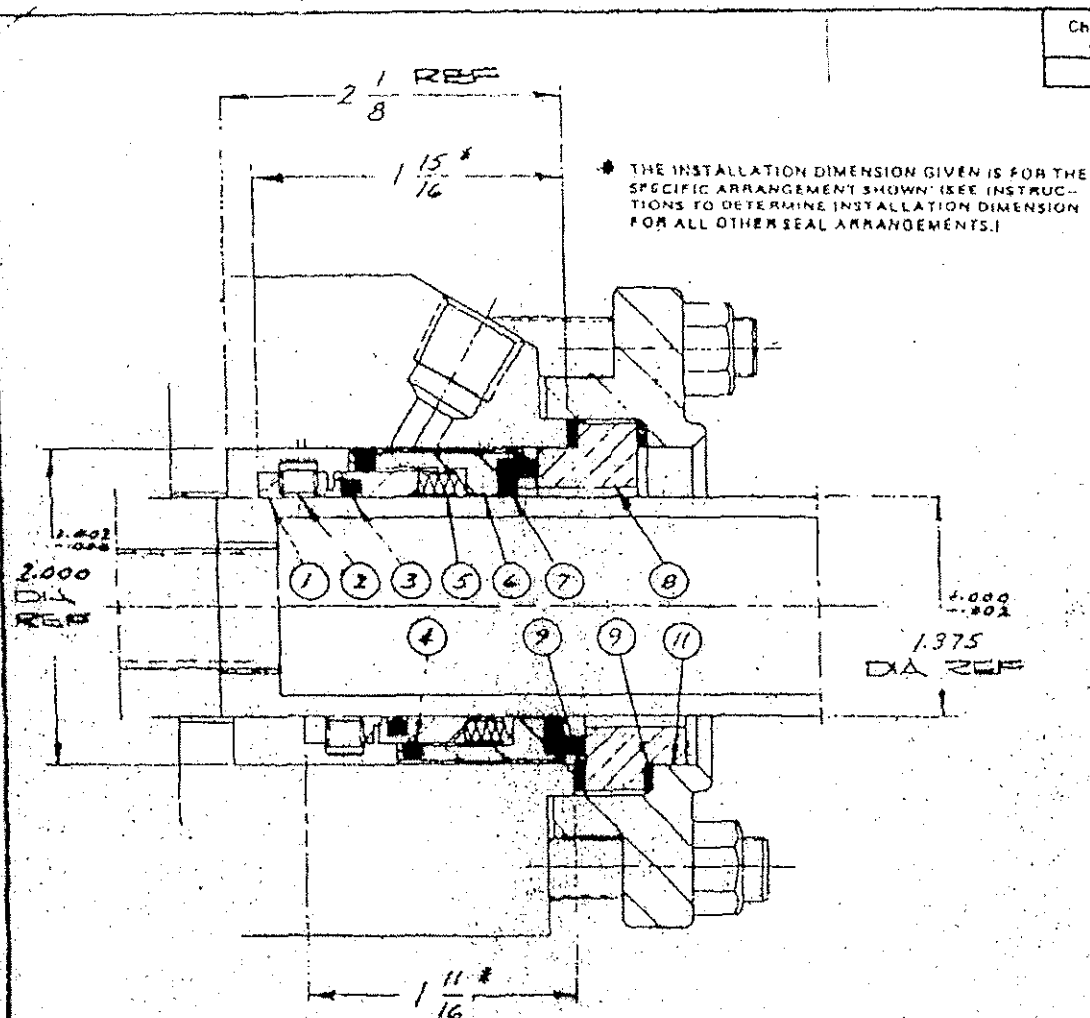
Fourth letter

1	316ss
2	C-20

The addition of this seal will add to [REDACTED] ability to satisfy our customers' requirements.

PLAINTIFF'S
EXHIBIT

GP 44



* "W" VITON "O" RINGS ARE INSTALLED AT FACTORY. SEE THE CHEMICAL LISTING (ENCLOSED) TO DETERMINE THE PROPER "O" RING COMPOUND. IF "Z" - ETHYLENE PROPYLENE IS CHOSEN, REPLACE THE VITON WITH ETHYLENE PROPYLENE.

Tolerances: Unless Otherwise Specified $\pm .010$ Frac. $\pm .003$ Dec.

REF. ENG. 90280-32499 REV 1

MATERIAL CODE				
SEAL SIZE	FACE MAT'L.	METAL PARTS	"O" RING MAT'L.	GLAND MAT'L.
11	E	I	W / Z	GOULDS

Change No.	Alteration	Date
A	GOULDS REQUEST (REV)	12-28-77

This document contains proprietary information concerning our product and is loaned subject to return upon demand and upon the expressed condition that it will not be used directly or indirectly in any way detrimental to the interests of the A. W. Chesterton Co.

11	GLAND GOULDS	92499
9	BASKETS (2) 1/16" INK	B710-11 270
8	STATIONARY SEAL RING	DT4A-11 CERAMIC
7	ROTARY SEAL RING	DB1A-11 CARBON
6	ROT. SEAL RG. HOLDER	DB2B-11 316 SS
5	SPRINGS (8)	AB70 HAST-6
4	DYNAMIC "O" RING	2-132 90
3	STATIC "O" RING	2-120 90
2	DRIVE SCREWS (3)	DT4A-1 316 SS
1	MOUNTING COLLAR	DB1B-11 316 SS
PART NAME		PT. NO. MAT'L.
EQUIP GOULDS PUMP		
MODEL / TYPE 3196576-8		
SERIAL NO.		SHAFT SPEED RPM

CHESTERTON PACKERS & SEALS
A. W. Chesterton Co.
Woburn, Mass. 01801 U.S.A.

880
SEAL INSTALLATION
1 7/8 DIA SEAL

Date 12-28-77	Scale NONE	REV
DR. DET	CH. 12-28-77	AB8424 A