

Date 9-4-81

**Instruction Manual**

FOR  
DL HOMOGENIZER

Serial No. C-4040 (3DL112)

Order No. 27-41311

Drawing No. 06B-P-376677

When requesting information about your machine, always state serial number, name of machine, and model number, or any other pertinent information that might apply.

**READ COMPLETE INSTRUCTIONS BEFORE INSTALLATION**

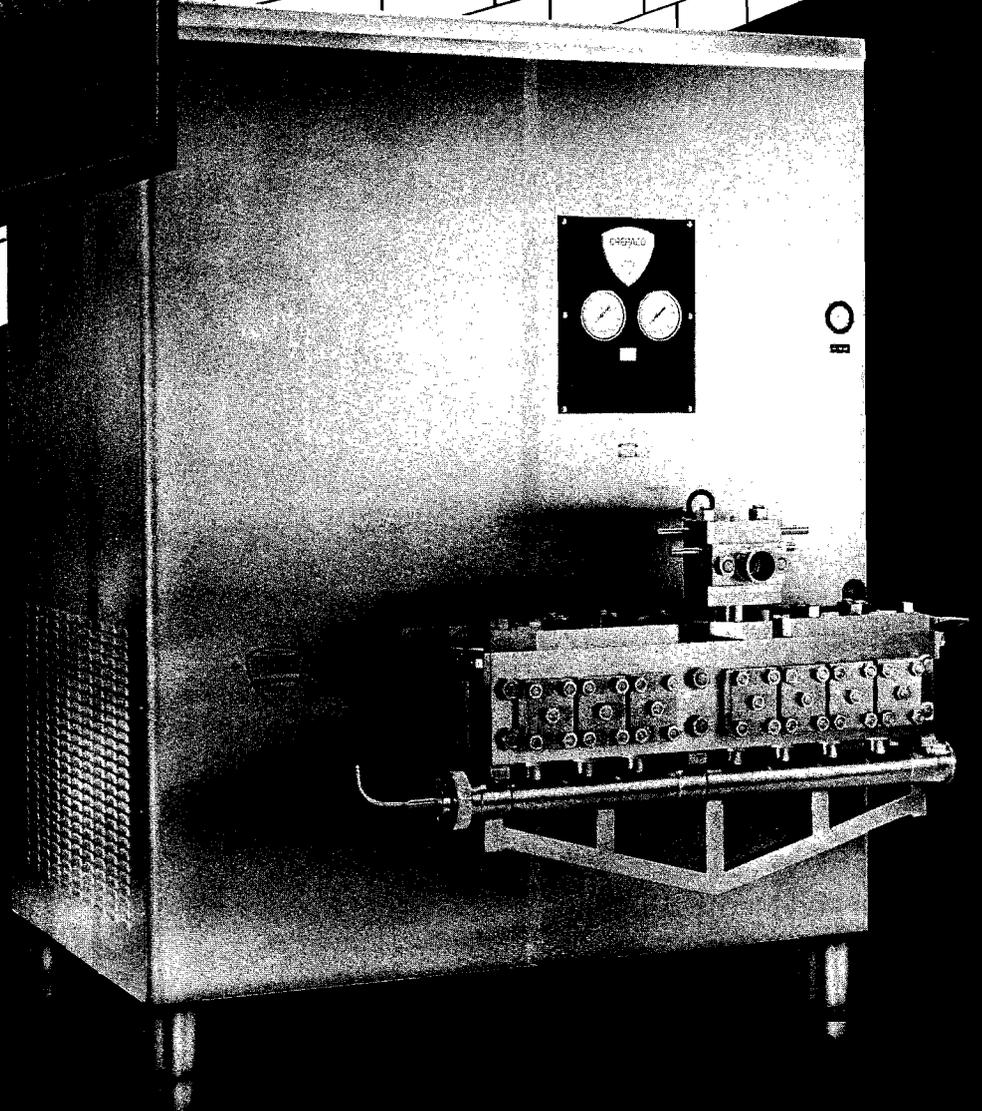
Keep this manual in a safe place for future reference.

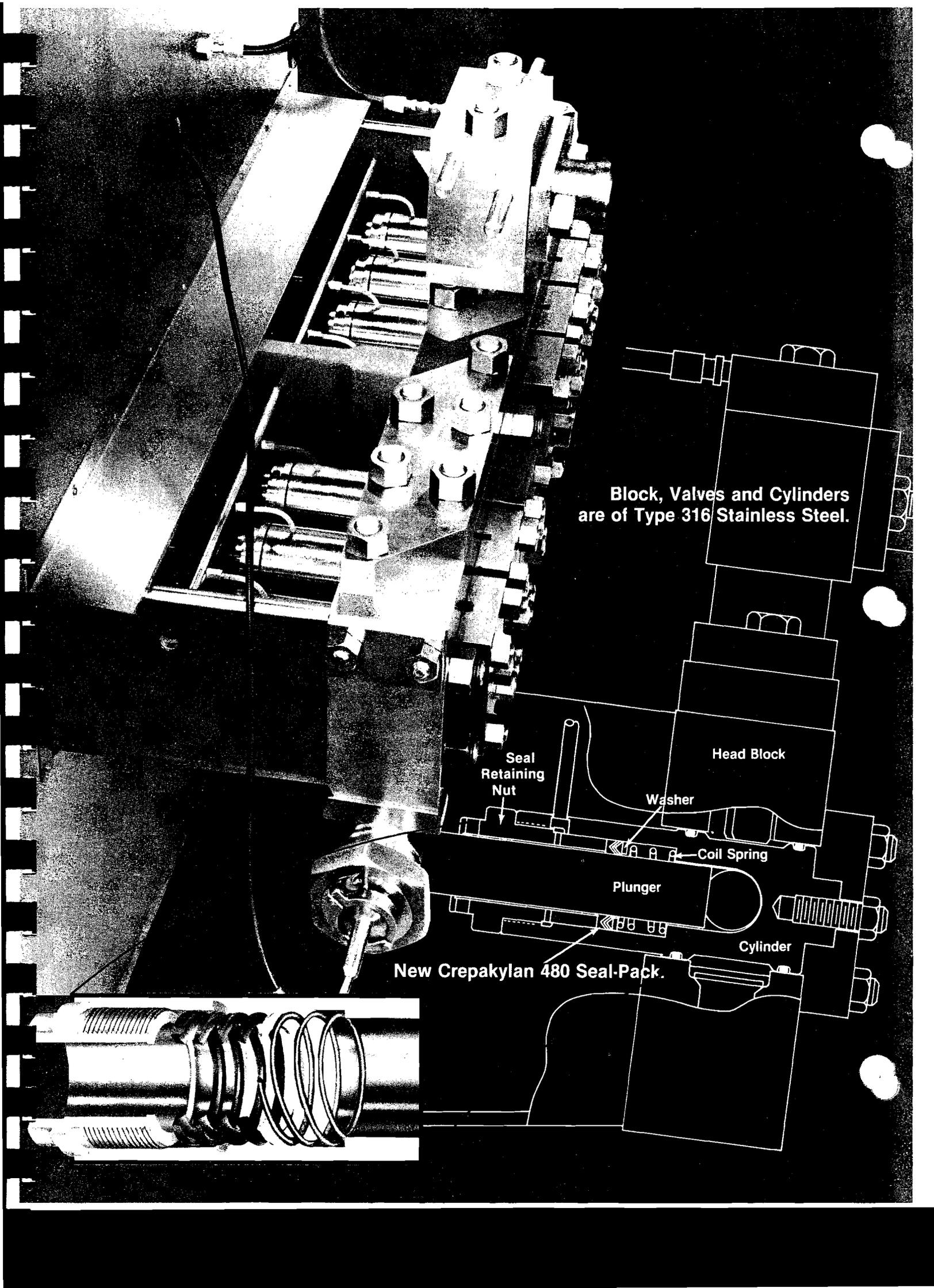
Additional copies may be purchased for \$ 7.00 each

**CREPACO, inc.**

# CREPACO

## Stainless Multi-Flow Homogenizers





Block, Valves and Cylinders  
are of Type 316 Stainless Steel.

Seal  
Retaining  
Nut

Head Block

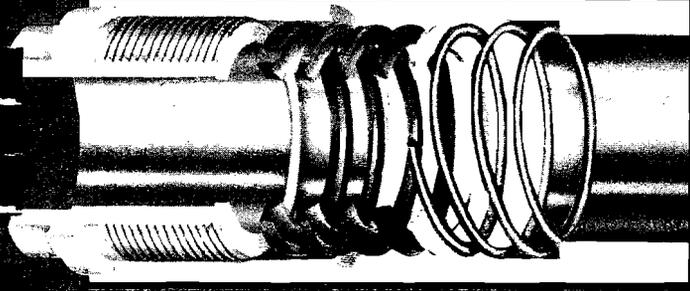
Washer

Coil Spring

Plunger

Cylinder

New Crepakylan 480 Seal-Pack.



**NEW DL MODELS  
with CREPAKYLAN  
480 SEAL-PACK  
assures long,  
trouble-free  
plunger seal  
performance.**

CREPACO Homogenizers, performance-proven in hundreds of installations, have earned world-wide recognition for rugged dependability.

Now, as a result of a continuing program of engineering development, CREPACO offers the CREPAKYLAN 480 SEAL-PACK for plunger seals.

This outstanding new feature eliminates the need for seats or followers and has been proven in field installations to be far superior in wear life.

A coil spring accurately compresses the CREPAKYLAN 480 SEAL-PACK when the seal nut is assembled into position against the rear of the cylinder. Water for lubrication and cooling is directed into the seal area through the cylinder wall, further extending plunger and seal life.

Keyless Cylinders are positioned and secured in place by individual covers bolted at the front of the Homogenizer Head. This assures true axial loading and eliminates any possibility of chucking or damage of the sealing grooves during operation.

**CREPACO High-Capacity Model Series DL Homogenizers  
are built:**

**Rugged.** Designed and built to meet the demanding requirements of effective homogenization. From the solid steel base to the heavy duty eccentric shaft, proven materials and standards are used to assure long, trouble-free operation.

**Quiet.** Minimum noise in operation is a good indication of effective operation. The special gearless drive provides smooth, quiet performance assuring maximum efficiency with minimum maintenance and wear.

**Compact.** Saves valuable floor space - yet all parts are conveniently located and readily accessible.

**Sanitary.** All stainless steel exterior is easily kept clean. The all stainless steel Head Block can be cleaned-in-place or readily disassembled for hand cleaning. Can be furnished with or converted to aseptic operation.

**Versatile.** Capacity may be changed simply by changing motor sheaves or by use of variable speed drives available on application. Homogenization of a variety of products is assured by selecting the most suitable homogenizing valve from four interchangeable single-stage designs or from a number of two-stage combinations.

**to process:**

**Foods.** Baby foods, chocolate syrups, coatings, catsup, tomato paste, fruit pulps, purees, gravies, gums, juice concentrates, sauces, syrups, spices, stabilizers and toppings.

**Dairy Products.** Milk, cream, half-and-half, evaporated milk, ice cream mix, cheese and dairy spreads, and others.

**Beverage Products.** Flavoring emulsions, juices with pulp, chocolate drink, essential oils.

**Cosmetics.** Hair creams, lotions, dressings, oils, liquid soaps, shampoos and suspensions.

**Pharmaceuticals.** Cod liver oil emulsions, vitamin emulsions, medicinal creams, cream lubricants, ointments, lotions and suspensions.

**Chemicals.** Adhesives, colloidal dispersions, pigments, dyes, greases, lubricants, inks, plastics, resins, polymers, glycerides, waxes, photographic emulsions.

**Others.** Textile sizing, paper sizing and synthetic textile fibers.

## Features basic to all CREPACO Homogenizers

**Gearless Drive.** Direct multiple V-Belt Drive with Single Speed Reduction from motor sheave to drive Pulley.

**Special Drive.** Electric or hydraulic variable speed drives available for some applications.

**Motor Air-Cooling System.** Ample air circulation by fan blades and side-cabinet louvers keep the motor running cool under continuous load. Motor is mounted above drive to help keep motor heat away from crankcase.

**Easy Start-up.** The eccentric shaft starts the compression stroke off dead center, cushions the hydraulic load, and assures uniform thrust on the Crossheads... more reasons why the CREPACO Homogenizer requires less maintenance and has longer life. The massive crankshaft is mounted in heavy duty Timken Roller Bearings. Connecting Rods are equipped with removable, steel-backed Babbitt bearing surfaces which make maintenance easy and economical.

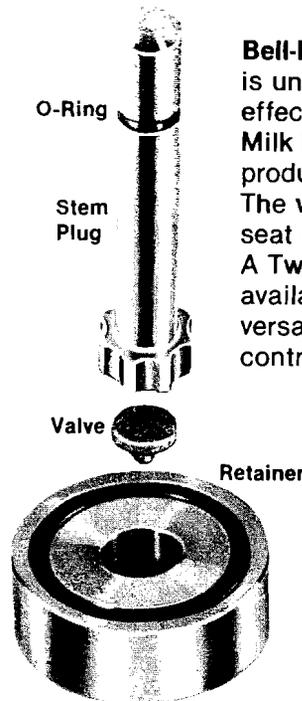
**Rugged, Solid Steel Base.** Supported on heavy-duty ball feet—carries all weight of crankcase assembly, motor drive, head block assembly, etc. The housing is completely self-supporting and carries only the additional weight of the Gauge Panel and Cover.

**Pressure Gauges.** Reliably indicate homogenizing suction as well as discharge pressures. Gauges are panel mounted in housing for easy reading. Model 3DL38 and low-capacity model DD Series have single Standard Indicating Gauge mounted direct on Head Block.

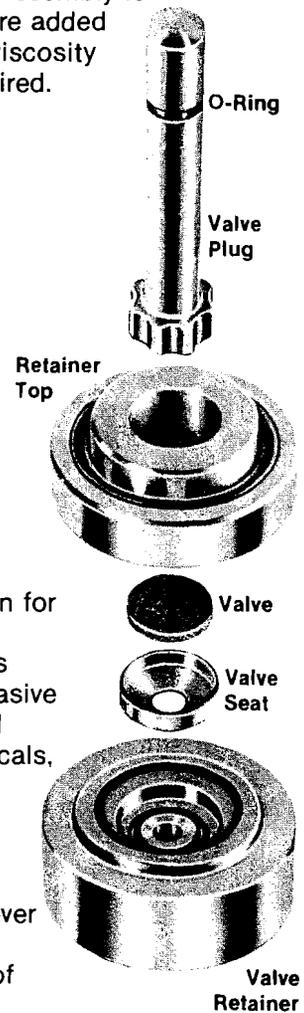
**Lubrication.** Dependable splash system—proven fail-safe and positive for high-pressure hydraulic pump duty. Large oil reservoir has full width sight panel at rear for observing lubrication and level. Plunger stub-shaft oil seals are efficient double-acting seals designed to keep the oil in and moisture out of crankcase.

Single Service Valves are made of a single strand of fine stainless steel wire formed into a compact, resilient valve element. The product flows through the labyrinth of minute passages formed between the wire loops and folds. Here the product is subjected to hydraulic shear forces, turbulence and innumerable changes in flow direction. These forces applied over a relatively long flow path produce a Maximum Homogenizing Effect with the Lowest Operating Pressures. By replacing the Valve on a scheduled basis, repeatability of homogenization efficiency is assured.

## The Heart of any Homogenizer is the Valve. Choose from four designs



**Bell-Flow Single Service Valve** is unequaled in homogenizing effect when used for Market Milk Products or other all-liquid products of similar consistency. The valve does not lift off its seat during normal operation. A Two-Stage Assembly is available where added versatility in viscosity control is desired.



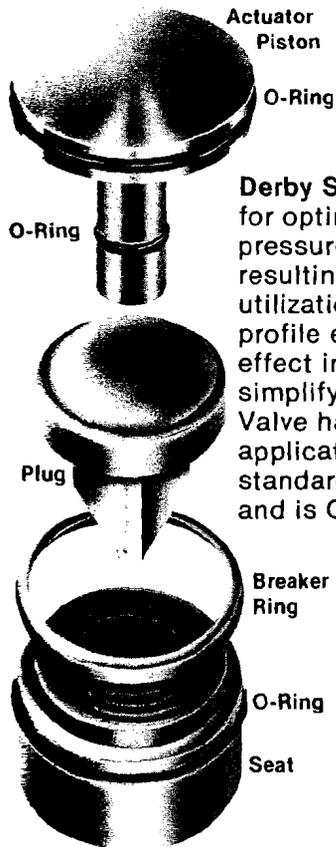
**Turbo-Flow Single Service Valve** is an exclusive CREPACO design for processing Ice Cream Mix, evaporated milk, salad dressings and for products containing abrasive particles, fibers and undissolved solids. Suitable for pharmaceuticals, cosmetics, waxes and similar emulsions and suspensions. The Turbo-Flow Valve is strengthened by an integral perforated stainless steel face over the wire valve element. Valve is designed to lift and clear itself of fibers, undissolved solids, etc., subjecting these to shear forces during travel between face and seat.



Most CREPACO Homogenizing Valves are available as two-stage assemblies for special homogenizing effect.

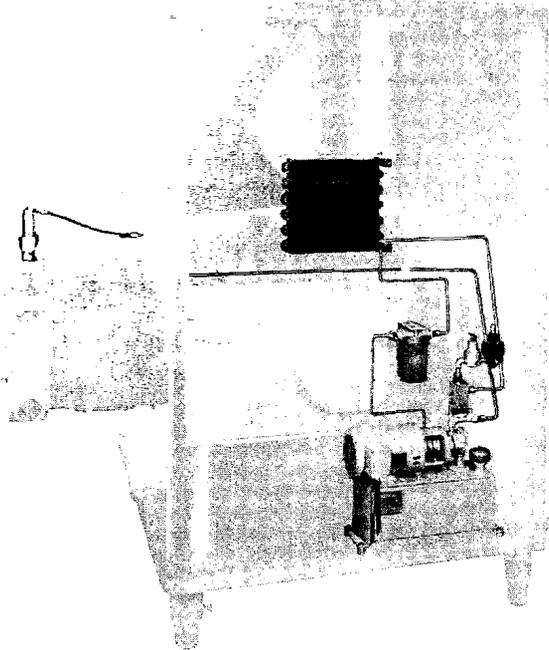
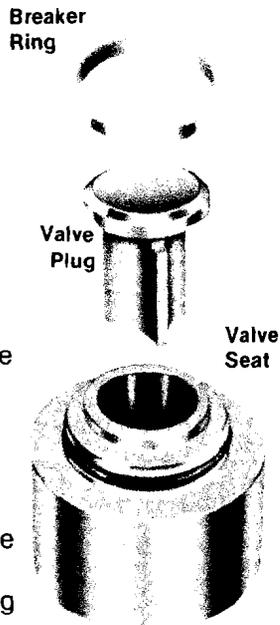
Two methods of adjusting homogenization pressure are available. The smaller capacity models utilize a manually adjusted handle. Larger capacity models utilize the manual handle or a hydraulic actuation system depending on the model size and type of valve.

to assure optimum efficiency.

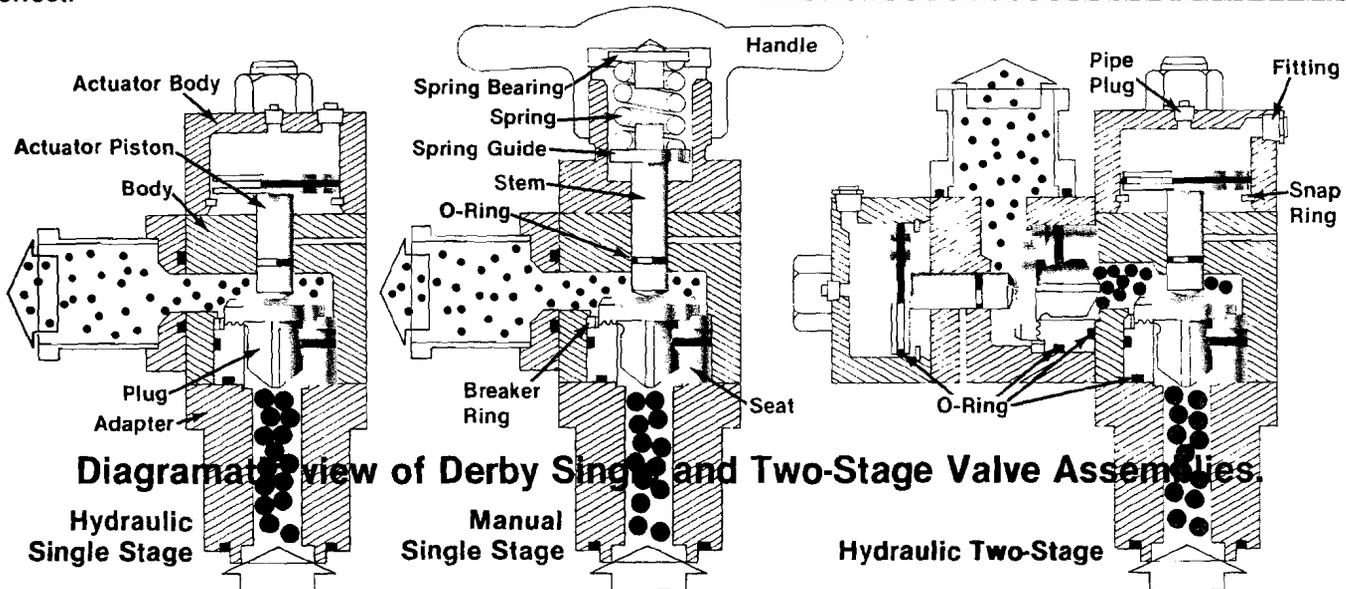


Derby Solid Valve is designed for optimum homogenization at lowest pressure for a solid construction valve, resulting in more efficient energy utilization. The concentric "saw-tooth" profile enables multiple-stage effect in a single-stage valve, simplifying operation. The Derby Solid Valve has a wide range of product application, is available for most standard homogenizer capacities and is CIP cleanable.

SPB Solid Valve is similar in construction to the Derby Solid Valve except the shear faces are flat and are made from a special very hard material. The SPB Solid Valve is superior for abrasive products and extended wear life. When operating on milk products the SPB Solid Valve normally requires more operating pressure for equivalent homogenizing effect.



A Hydraulically Actuated Homogenizing Valve Option is available for CREPACO Model DL homogenizers with single or two stage homogenization. A self-contained hydraulic power pack supplies oil at adjustable pressure to maintain a uniform force on the homogenizing valve stem. Specifically designed system components relieve pressure surges thus protecting the homogenizer from over pressure due to valve blockage or other pressure inducing incidents. This flexible system allows precise control of homogenizing pressure with either a manual adjustment or an automatic controller. The controls may be located on the homogenizer or in a remote control panel. When applied to two stage homogenizing valves, the automatic system controls the first stage with the second stage being adjusted manually.



Diagrammatic view of Derby Single and Two-Stage Valve Assemblies.

## b. 3DL412 Homogenizer

Rated Capacity		Operating Pressures - Maximum*						
U.S. Gal. Per Hour	Liters Per Hour	P.S.I.G						
		1400	1600	1800	2000	2500	3000	3500
		Kg/cm <sup>2</sup>						
		100	112	126	140	175	210	245
700	2650	10	15	15	15	20	25	30
800	3020	15	15	20	20	25	30	—
900	3400	15	20	20	20	—	—	—
1000	3780	15	20	20	25	—	—	—
1200	4540	20	25	25	30	—	—	—

NOTE: All motors 1800 RPM at 60 Hz. 1500 RPM on 50 Hz. systems.

## c. 5DL425 Homogenizer

Rated Capacity		Operating Pressures - Maximum*						
U.S. Gal. Per Hour	Liters Per Hour	P.S.I.G						
		1400	1600	1800	2000	2500	3000	3500
		Kg/cm <sup>2</sup>						
		100	112	126	140	175	210	245
1000	3780	15	20	20	25	30	40	40
1200	4540	20	25	25	30	40	40	—
1500	5670	25	30	30	40	40	—	—
1750	6620	30	30	40	40	50	—	—
2000	7560	30	40	40	50	—	—	—
2500	9450	40	50	50	—	—	—	—

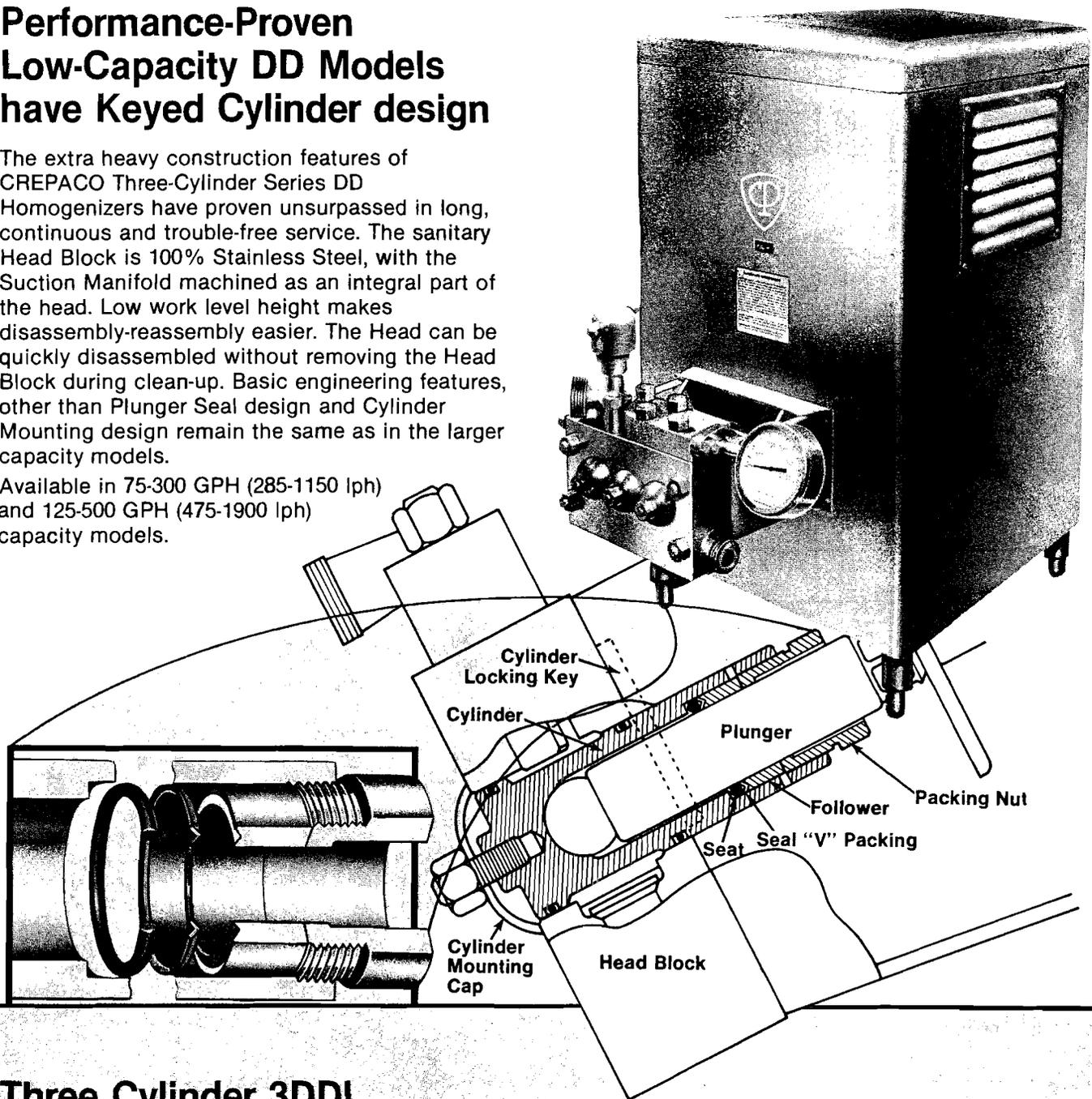
NOTE: All motors 1800 RPM at 60 Hz. 1500 RPM on 50 Hz. systems.

\*SPB style homogenizing valve normally requires operation at 400 to 500 PSIG (28.1 to 35.1 Kg/cm<sup>2</sup>) higher than a bell-flo or turbo-flo valve for equivalent homogenization effect.

## Performance-Proven Low-Capacity DD Models have Keyed Cylinder design

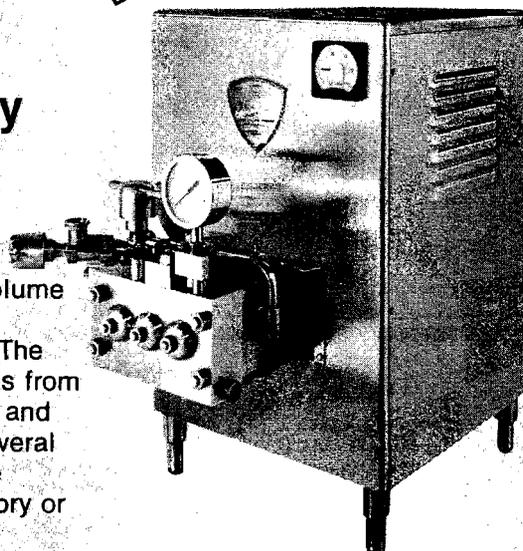
The extra heavy construction features of CREPACO Three-Cylinder Series DD Homogenizers have proven unsurpassed in long, continuous and trouble-free service. The sanitary Head Block is 100% Stainless Steel, with the Suction Manifold machined as an integral part of the head. Low work level height makes disassembly-reassembly easier. The Head can be quickly disassembled without removing the Head Block during clean-up. Basic engineering features, other than Plunger Seal design and Cylinder Mounting design remain the same as in the larger capacity models.

Available in 75-300 GPH (285-1150 lph)  
and 125-500 GPH (475-1900 lph)  
capacity models.



## Three Cylinder 3DDL Laboratory Homogenizer provides production line quality with choice of 8 capacities.

Here's a laboratory-sized Homogenizer engineered to simulate production line performance in new product development work. A rugged, continuous duty, low-volume unit which can also be used in processing such high quality products as pharmaceuticals and cosmetics. The CREPACO Model 3DDL can be furnished in capacities from 15 to 40 GPH (57-150 lph) at 10,000 Psig (700 Kg/Cm<sup>2</sup>) and up to 75 GPH (285 lph) at 5,000 Psig (350 Kg/Cm<sup>2</sup>). Several alternate capacities can be obtained by changing the motor sheave only. Aseptic kits are available for factory or field installation.



## CREPACO Homogenizer Models

Capacities		Labora- tory	Keyed Cylinder			Keyless Cylinder						
		3DDL	3DD 13	3DD 25	3DL 38	3DL 412	5DL 425	5DL 435	5DL 650	5DL 775/780	7DL 813	
Minimum Flow	GPH Liters/Hr.	15 57	75 285	125 475	300 1150	700 2650	1000 3800	1500 5700	2000 7600	4500 17000	7000 26500	
Maximum Pressure at Minimum Flow	PSI Kg/cm2	10000 700				3500 245			2000 140			2500 175
Maximum Flow	GPH Liters/Hr.	75 285	300 1150	500 1900	800 3000	1200 4550	2500 9500	3500 13200	5000 18900	8000 30240	13000 49200	
Maximum Pressure at Maximum Flow	PSI Kg/cm2	5000 350	2000 140			1800 126		2000 140	1600 112	1800 126		

### Dimensions

A	in. mm.	45 1/8 1146	47 1193	61 1549	63 1/4 1606	70 1778	81 3/8 2066	83 2108	105 1/2 2679	
B	in. mm.	24 5/8 625	26 1/4 666	32 1/2 825	37 939	48 5/8 1234	59 1/2 1511		81 1/4 2063	
C	in. mm.	39 3/8 999		51 1/2 1308	53 1/2 1358	61 1/8 1552	73 1/2 1866		78 5/8 1996	
D	in. mm.	25 5/8 650		34 3/8 872	36 3/8 923	43 3/4 1111	52 3/4 1339		57 7/8 1469	
E	in. mm.	23 584		31 3/4 806		34 9/16 877	41 1/4 1047		45 5/8 1158	

### Fittings

Suction	in. mm.	1 25	1 1/2 38		2 51	2 1/2 64		3 76	4 102
Discharge	in. mm.	1 25	1 1/2 38				2 51		2 1/2 64

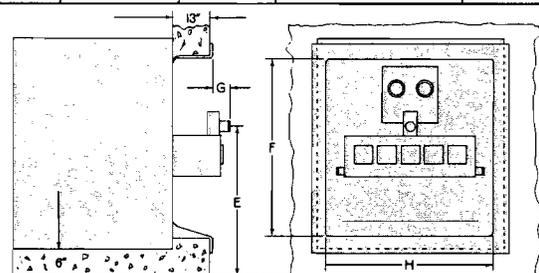
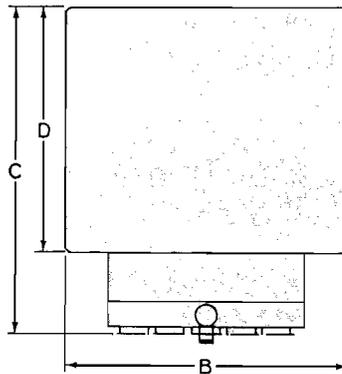
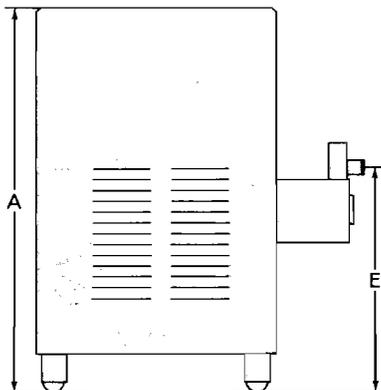
### Shipping Weight (Less Motor)

Domestic	Pounds	1175	1200	2500	2780	3160	9600	9680	13500
	Kilograms	535	545	1135	1260	1435	4360	4395	6130
Export	Pounds	1375	1400	2850	3130	3510	9950	10030	14175
	Kilograms	625	635	1295	1420	1595	4515	4555	6435

Note: All throughput and pressure figures above are based on processing fluid milk. For capacity figures on processing products with other viscosity or specific gravity or with fibrous solids, contact your CREPACO Sales Office Representative.

### Bulkheaded Space Saver

		Keyless Cylinder			
		5DL 425/435	5DL 650	5DL 775/780	7DL 813
F	in. mm.	60 1524	68 1727		78 1981
G	in. mm.	4 1/2 114	8 203		9 228
H	in. mm.	41 1041	52 1320		71 1803



# CREPACO, inc.

Executive Offices and International Sales: 8303 W. Higgins Rd., Chicago, Illinois 60631  
312-693-4000 - Telex 25-4537

Branches: Atlanta, Georgia • Boston Area - Wellesley Hills, Massachusetts • Charlotte, North Carolina • Chicago Area - Downers Grove, Illinois • Columbus, Ohio • Dallas, Texas • Denver, Colorado • Kansas City Area - Riverside, Missouri • Los Angeles, California • Minneapolis, Minnesota • Nashville, Tennessee • New York Area - Hackensack, New Jersey • Philadelphia Area - Pennsauken, New Jersey • Salt Lake City, Utah • San Francisco Area - San Leandro, California • Seattle, Washington

In Canada: APV-CREPACO - Montreal • Toronto

In Europe: CREPACO INTERNATIONAL, Inc., 28 Bld St. Michel, 1040 Brussels, Belgium  
CREPACO GmbH - Neustadt (Hanover), West Germany

Prices and Specifications  
subject to change without notice.

RECOMMENDED SERVICE PARTS

FOR  
MODEL 3DL412 HOMOGENIZER

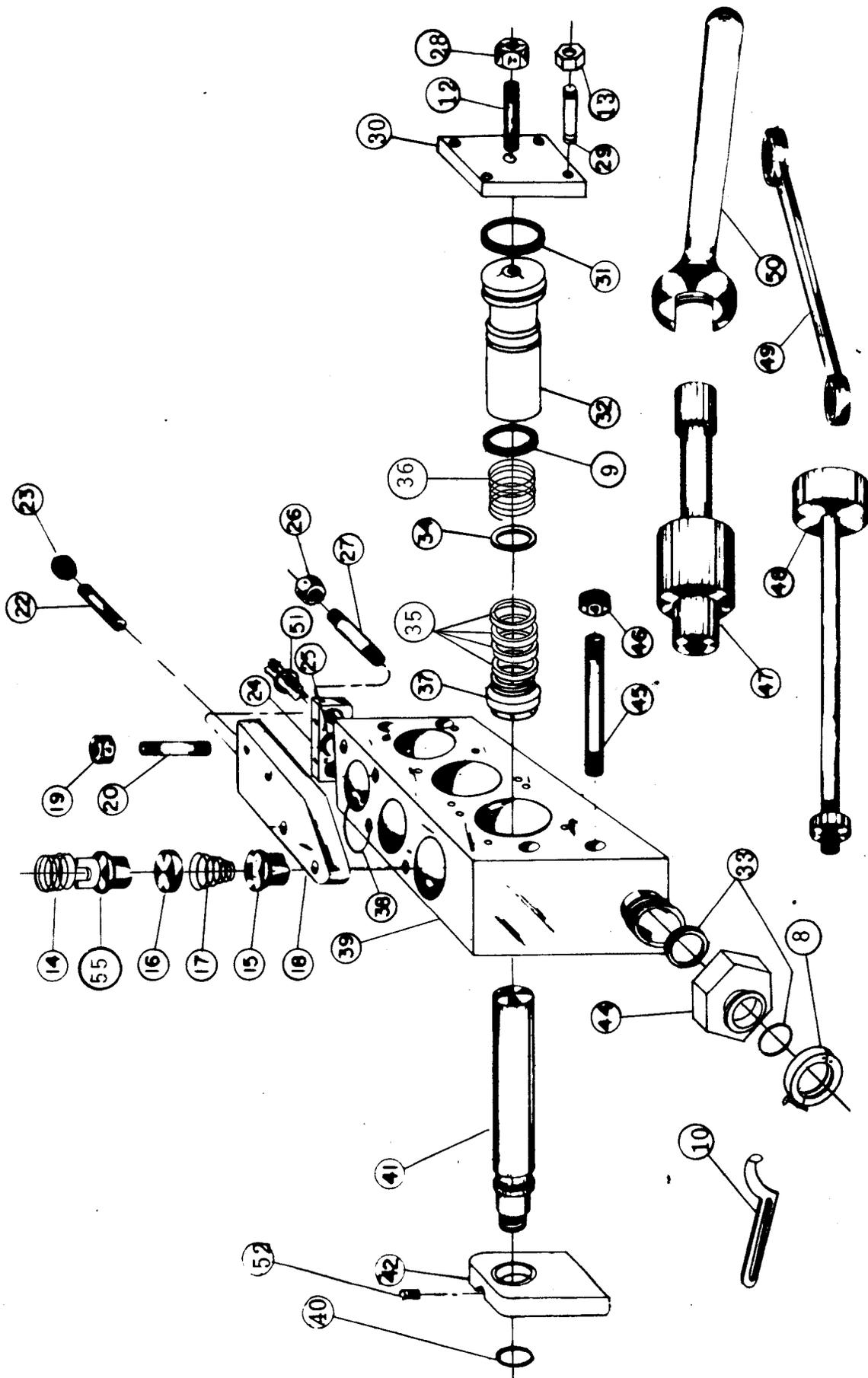
<u>Item</u>	<u>Part Number</u>	<u>Inventory</u>
"0" Ring	543-S-1313-34	20
"0" Ring	543-P-147415	20
"0" Ring	543-P-149346	10
"0" Ring	543-S-1313-19	20
"0" Ring	543-S-1313-26	20
"0" Ring	543-S-1313-38	30
"0" Ring	543-P-149347	20
"0" Ring	543-P-149345	20
Ring - Seal	06H-P-200237	5
Ring - Wear	06H-P-175255	3
Gasket	543-V-001507	5
Nut - Hex.	06H-2-31359	5
Valve - Suction	06H-P-228292	3
Seal Pack - Plunger	06H-P-361145	3
Nut - Plunger Seal	06H-P-361155	3
Seal - National Oil	549-S-6553-A	5
Valve - Discharge	06H-P-228291	3
"V" Belt	623-S-1563	5
"0" Ring	543-P-149348	20
Spring - Coil	06H-P-373668	1
Seal - Perfect Oil	549-V-004012	3
Ring	543-S-1313-13	10
Ring	543-S-1313-28	10

- continued -

RECOMMENDED SERVICE PARTS  
FOR  
MODEL 3DL4T2 HOMOGENIZER

<u>Item</u>	<u>Part Number</u>	<u>Inventory</u>
Guide - Suction Spring	06H-P-137147	3
Cylinder	06H-P-361085	1
Spring - Discharge	06H-P-185208	3
Spring - Suction	06H-P-137148	3
Plunger	06H-P-361747	1

Not By Item Number.



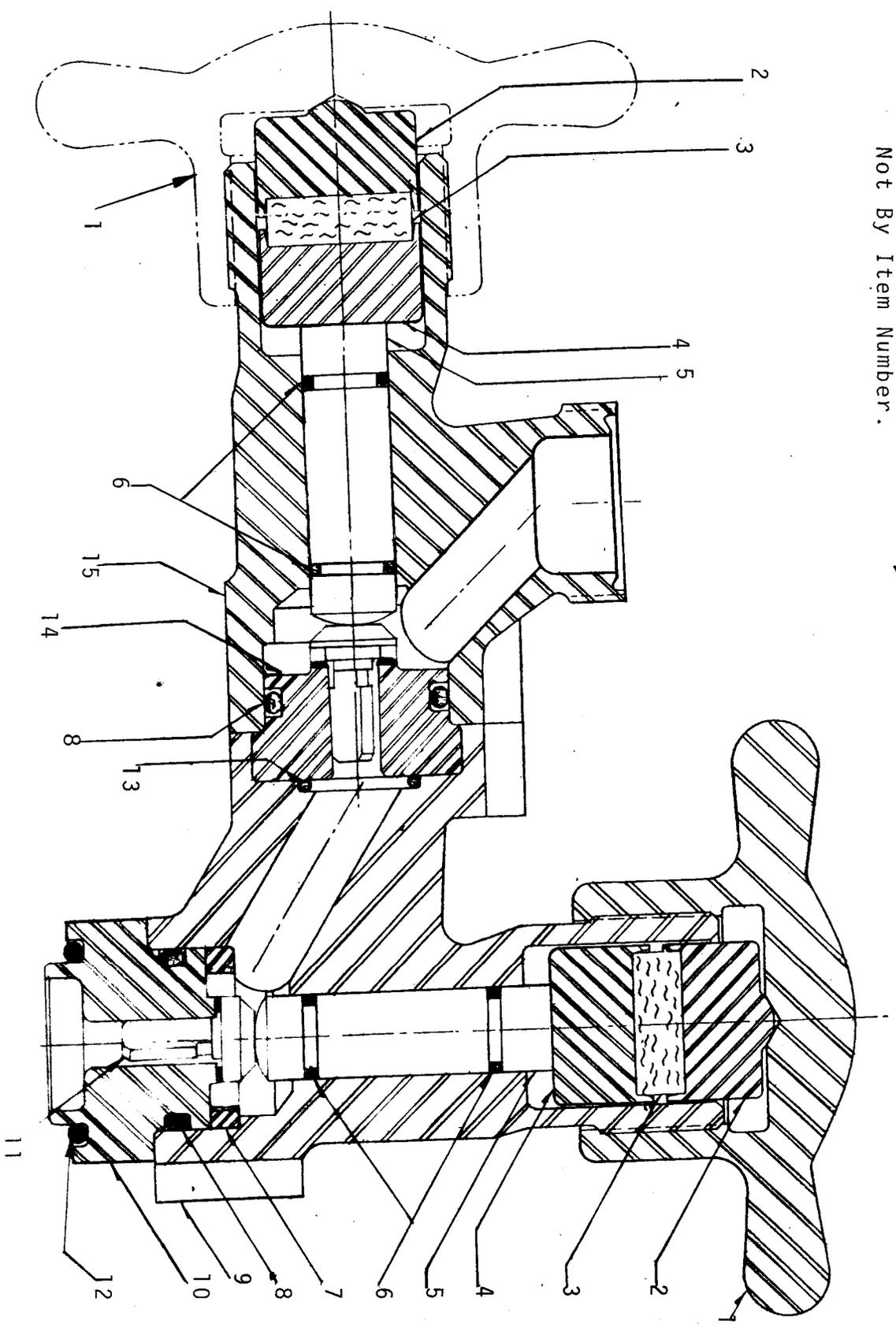
ITEM No.	PART No.	PART DESCRIPTION	NO. REQ.
1	06H-2-30441	Nut - Adjusting	2
2	06H-P-175999	Bearing - Spring	2
3	06H-P-180537	Spring - Adjusting	2
4	06H-P-177125	Guide - Spring	2
5	06H-P-288685	Plug - Extension	2
6	*543-S-1313-13	"0" Ring (Pkg. Of 10)	4
7	06H-P-175255	Ring - Wear	1
8	*543-S-1313-28	"0" Ring (Pkg. Of 10)	2
9	06A-P-175940	Body - Valve - 1st Stage	1
10	06H-P-291003	Seat - 1st Stage	1
11	06H-P-280834	Plug - Valve	2
12	543-P-149345	"0" Ring	1
13	*543-S-1313-19	"0" Ring (Pkg. Of 10)	1
14	06H-P-280833	Seat - 2nd Stage	1
15	06A-P-175945	Body - Valve - 2nd. Stage	1
16	06H-2-30673	Nut - Hex.	2
17	06H-P-137154	Stud - Valve Body (Not Shown)	2

\*NOTE: Certain Items Are Packaged In Minimum Quantity Lots  
As Indicated.

ITEM No.	PART No.	PART DESCRIPTION	NO. REQ.
31	543-P-149347	"0" Ring	3
32	06H-P-361085	Cylinder	3
33	543-V-001507	Gasket - #101-H-2"	2
34	06H-P-278138	Washer	3
35	543-P-361145	Seal Pack (Pkg. in a set)	3
36	06H-P-373668	Spring - Coil	3
37	06H-P-361155	Nut - Plunger Seal	3
38	543-P-149345	"0" Ring	2
39	06H-P-284975	Block - Head	1
40	*543-S-1313-26	"0" Ring (Pkg. of 10)	3
41	06H-P-361747	Plunger	3
42	06A-P-188253	Deflector	3
44	06H-P-360338	Adapter	1
45	06H-P-137155	Stud - Head	4
46	06H-2-30673	Nut - Hex.	4
47	06A-P-137341	Puller - Cylinder	1
48	06A-P-137350	Puller - Seal	1
49	689-2-30655	Wrench - Hex. Nut	1
50	689-V-004685	Wrench - Open End	1
51	*543-P-147415	"0" Ring (Pkg. of 10)	1
52	*521-V-006703	Screw - #300 Series (Stn.Stl.) Soc. Set	3
55	06H-P-228291	Valve Discharge	3

\*NOTE: Certain Items Are Packaged In Minimum Quantity Lots As Indicated.

NOTE: Order By Part Number,  
Not By Item Number.



SP8 VALVE KIT  
2 STAGE

VALVES & BLOCK  
3DL4

ITEM No.	PART No.	PART DESCRIPTION	NO. REQ.
8	563-V-004312	Clamp	1
9	543-P-149348	"0" Ring	3
10	689-S-8164-F	Wrench Spanner	1
12	06H-P-280620	Stud	3
13	06H-2-31359	Nut	12
14	06H-P-185208	Spring - Discharge Valve	3
15	06H-P-228292	Valve - Suction	3
16	06H-P-137147	Guide - Suction Spring	3
17	06H-P-137148	Spring - Suction Valve	3
18	06H-P-137134	Adapter - Cover & Gauge	1
19	06H-2-30673	Nut - Hex.	4
20	06H-P-137156	Stud - Valve Port Cover	4
22	06H-2-31358	Stud	2
23	06H-2-31359	Nut - Hex.	2
24	06H-P-137140	Cover - Outlet	1
25	543-P-149346	"0" Ring	1
26	06H-2-31359	Nut - Hex.	2
27	06H-P-147732	Stud - Terminal End Block	2
28	06H-2-30008	Nut - Hex.	3
29	06H-P-280621	Stud	12
30	06H-P-280610	Mtg. Cap	1
30	06A-P-280603	Mtg. Cap (Center Cap)	1
30	06H-P-280611	Mtg. Cap	1

\*NOTE: Certain Items Are Packaged In Minimum Quantity Lots As Indicated.