



## PRODUCT BULLETIN MODEL NOVO DIAPHRAGM PUMP

### NOVO

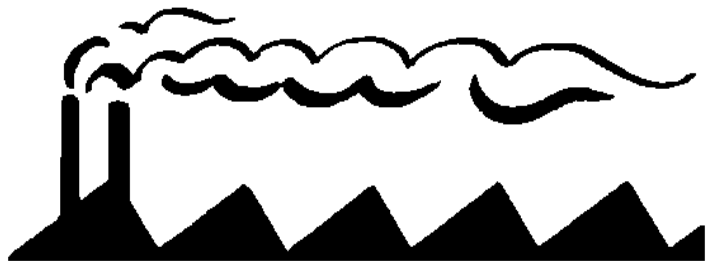
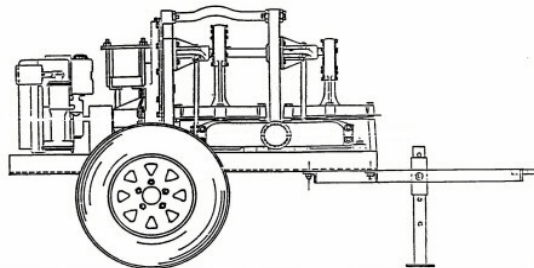
On the job dependability and efficiency are built into every NOVO Diaphragm Pump . . . assuring long life and top performance under the most rugged operating conditions.

The sturdy cast iron construction throughout the entire unit, simplicity of design, minimum of maintenance and low cost of replacement parts have made NOVO the choice of construction and industrial companies – both large and small.

The American-Marsh NOVO Diaphragm Pump, in your possession, offers the latest development and construction in diaphragm pumps. Give it the same care and attention you would any piece of high grade equipment. In turn this pump will reward you with years of dependable, satisfactory service.

Pump and power unit are mounted on a substantial, rigid steel frame and are not dependent on a foundation to maintain correct alignment between pump and driver. The unit should set level for even wear of moving parts and for proper lubrication.

Set the pump as near the source of supply as possible. The shorter the suction line the better; it should never exceed 25 feet vertical lift, nor a total head, suction and discharge in excess of 50 feet. Both the suction and discharge lines should be anchored and supported independent of the pump to avoid possible misalignment and undue strain on the pump and driving parts.



### INDUSTRIAL USES FOR NOVO DIAPHRAGM PUMPS

NOVO's versatility allow them to perform a variety of jobs for industrial firms. Most any liquid can be pumped with a NOVO including abrasive and corosive fluids. Vital pumping parts are made with either cast iron, stainless steel, bronze or aluminum. Diaphragms are available in rubber, plastic or a combination of the two. The NOVO diaphragm pump is self-priming, self-lubricating, void of close clearances...handles any percentage of air and pumps at any desired rate of flow within the range of the power source.

# INDUSTRIAL

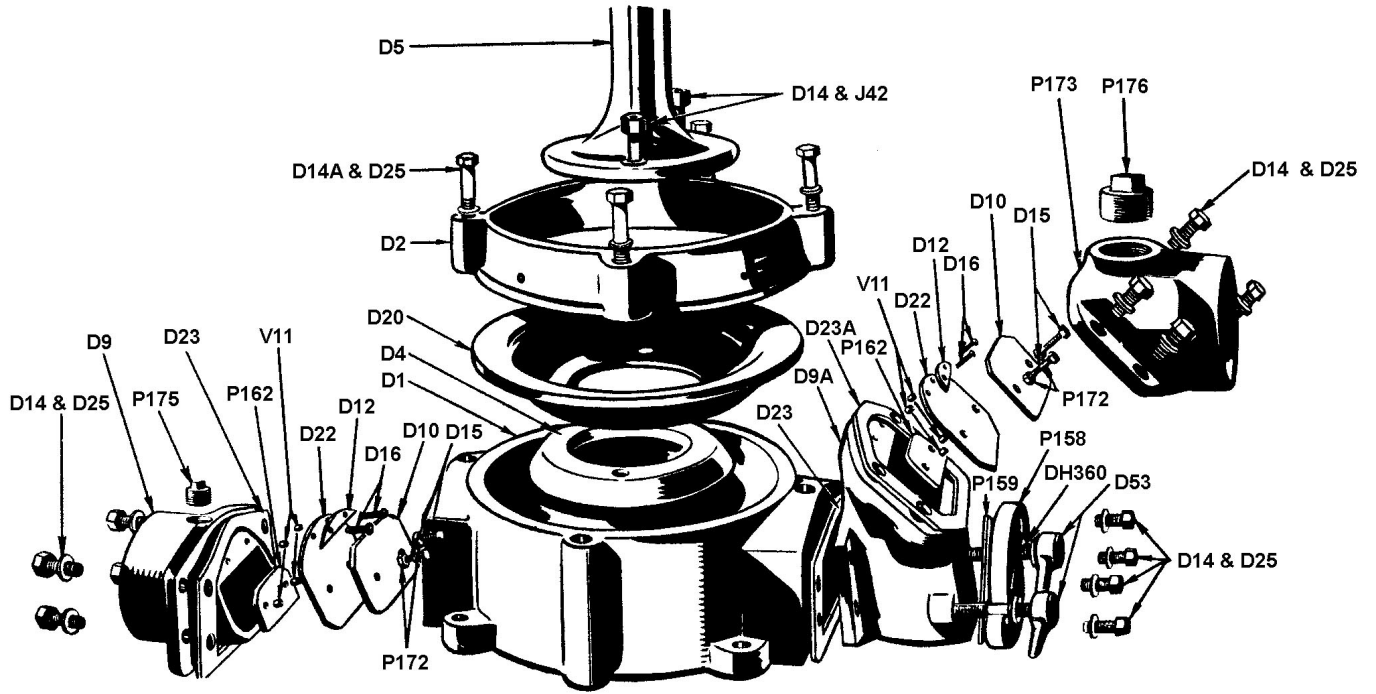


INDUSTRIAL  
Spill Containment, Transfer

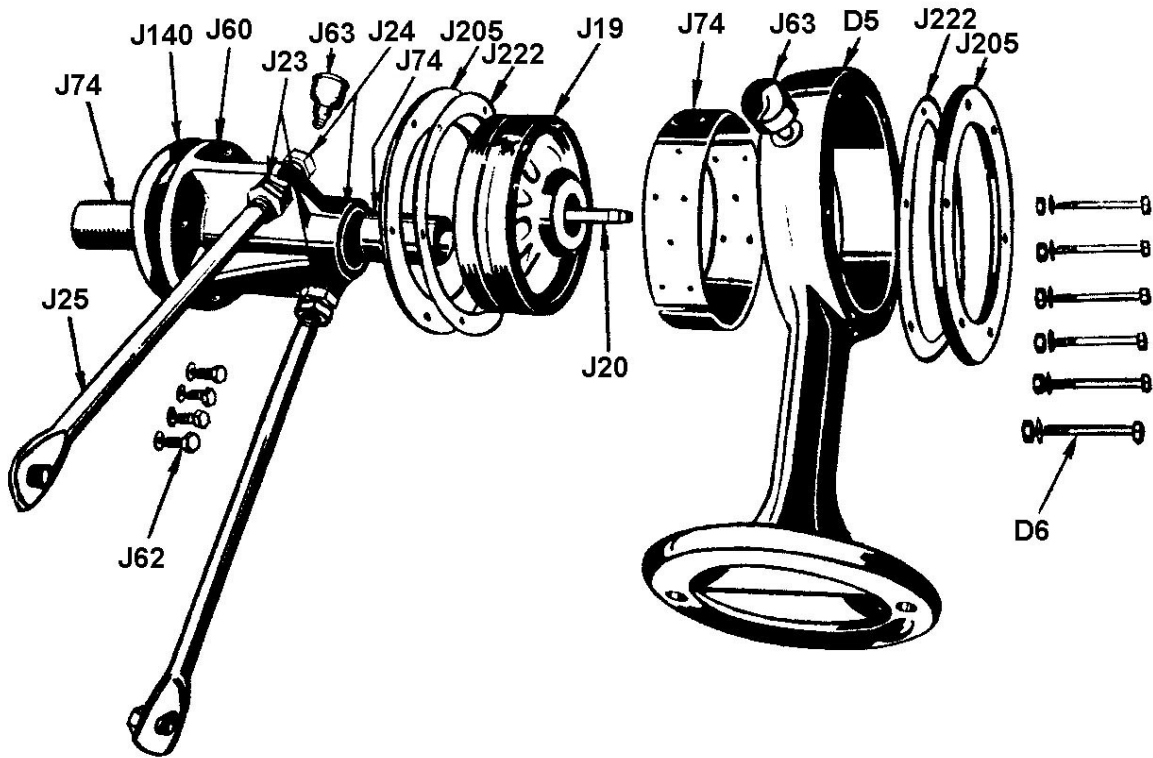
COMMERCIAL  
De-Watering, Slurry, Transfer

MUNICIPAL  
Transfer, De-Watering, Transfer

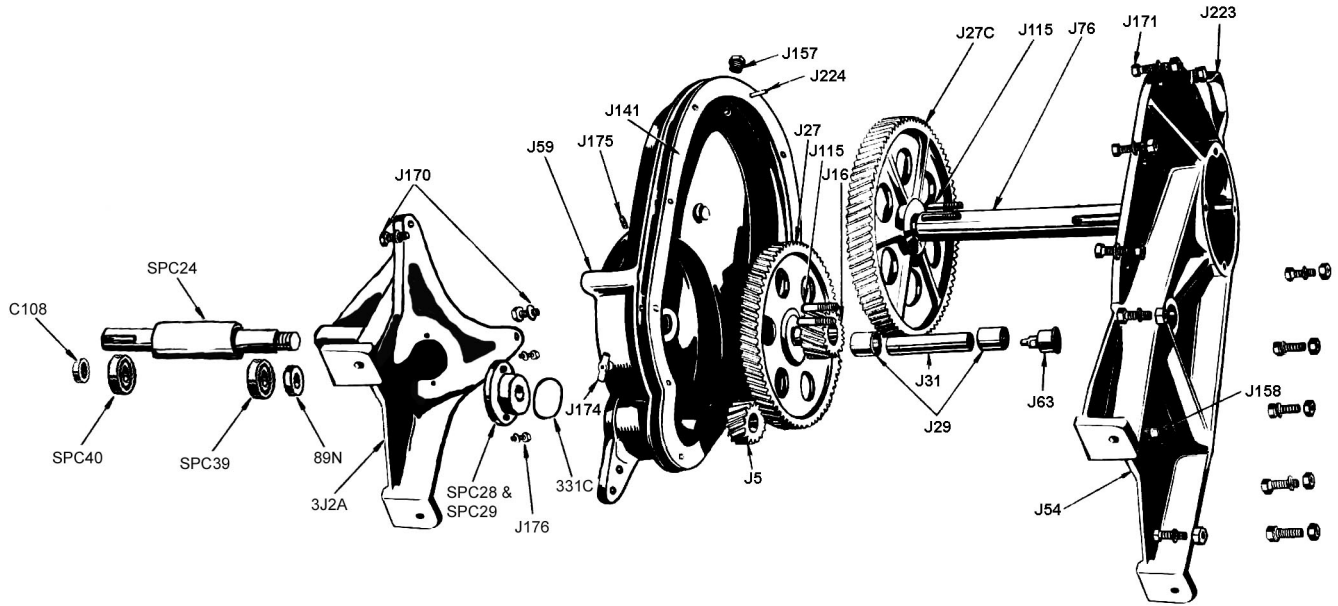
PRODUCT BULLETIN  
MODEL NOVO DIAPHRAGM PUMP



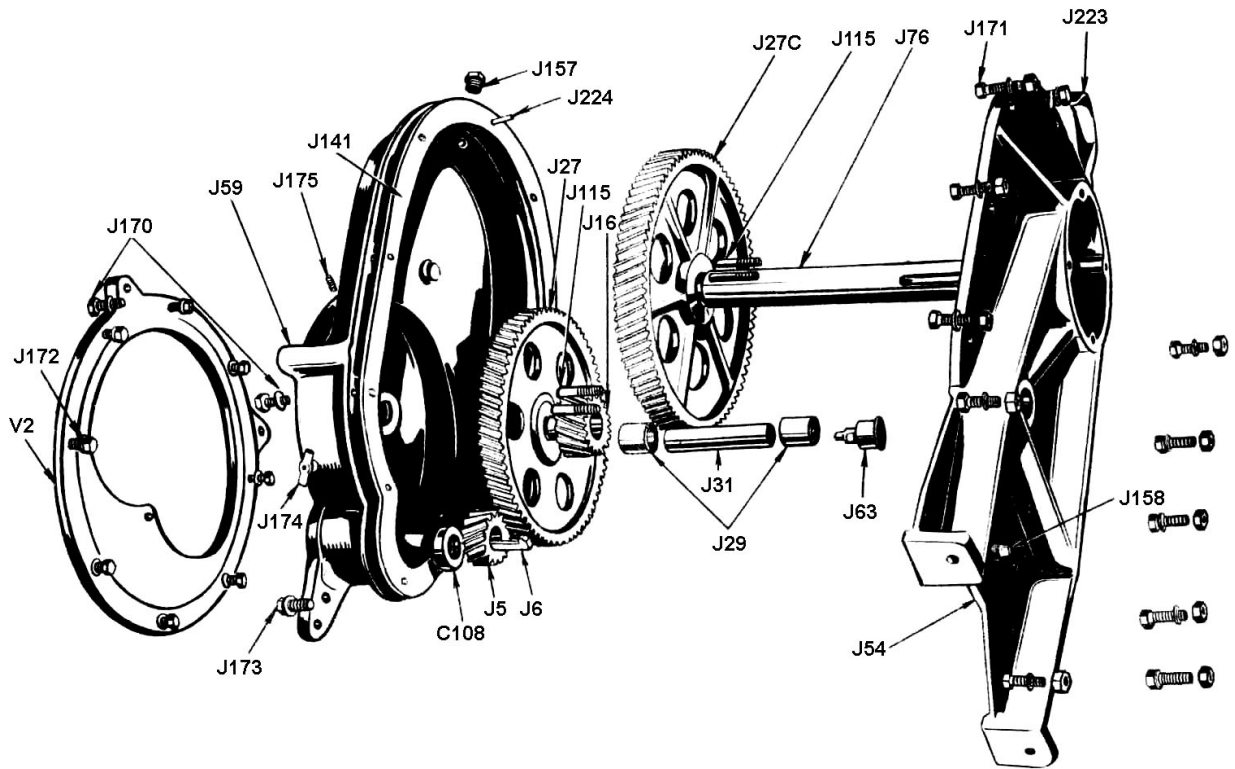
**PUMP FLUID END ASSEMBLY**



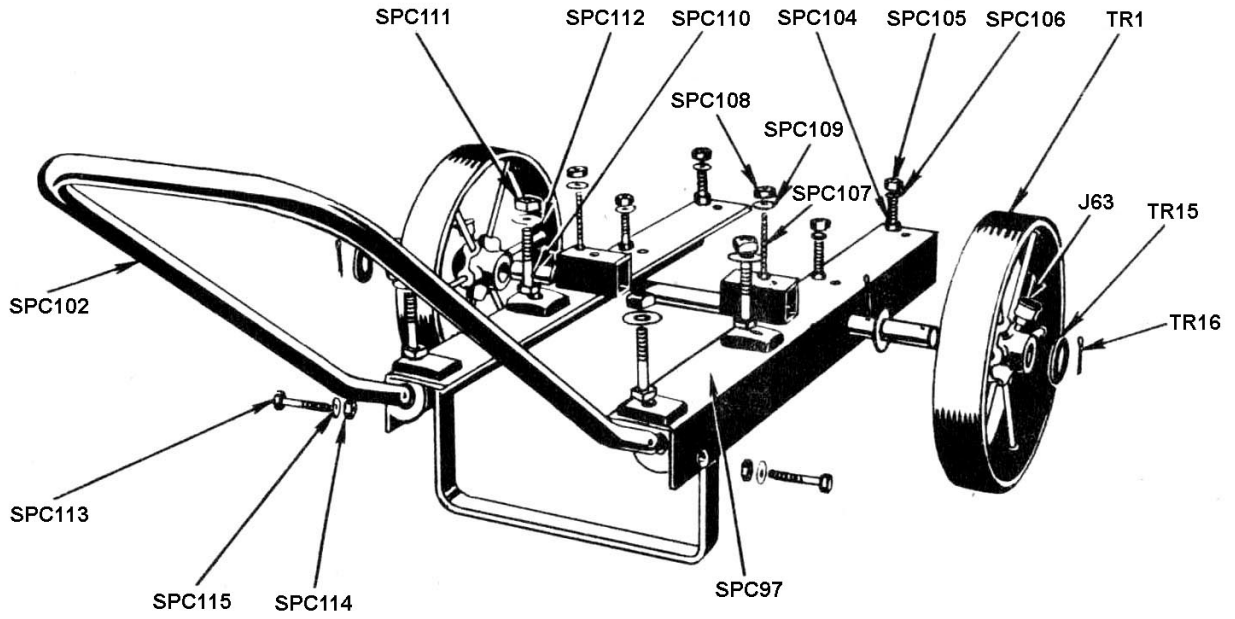
**ECCENTRIC AND ECCENTRIC SUPPORT ASSEMBLY**



**GEAR CASE ASSEMBLY (FLEX-COUPLED)**



**GEAR CASE ASSEMBLY (CLOSE-COUPLED)**



**WHEELED BASE ASSEMBLY**



## NOVO AD Diaphragm Self-Primer Sectional Drawing

Item Number	Item Description	AD-3-1		AD-4-1		AD-3-2		AD-4-2		AD-3-B		AD-4-B	
		Symbol	Qty.	Symbol	Qty.	Symbol	Qty.	Symbol	Qty.	Symbol	Qty.	Symbol	Qty.
C108	Crankshaft Oil Seal	2J227	1	2J227	1	2J227	1	2J227	1	1C108	1	1C108	1
D1	Pump Base	3D1G	1	4D1E	1	3D1G	2	4D1E	2	3D1G	1	4D1E	1
D2	Pump Top	3D2C	1	4D2F	1	3D2C	2	4D2F	2	3D2C	1	4D2F	1
D4	Plunger Bottom	3D4D	1	3D4E	1	3D4D	2	3D4E	2	3D4D	1	3D4E	1
D5	Cross Head	3D5J	1	3D5K	1	3D5J	2	3D5K	2	3D5J	1	3D5K	1
D6	Crosshead Plate Screws	3D6	6	4D6	6	3D6	12	4D6	12	3D6	6	4D6	6
D9	Suction Flange	3D9N	1	4D9B	1	3D9H	2	4D9D	2	3D9N	1	4D9B	1
D9A	Discharge Flange	3D9L	1	4D9E	1	3D9L	2	4D9E	2	3D9L	1	4D9E	1
D10	Valve Weight (Large)	3D10B	2	4D10A	2	3D10B	4	4D10A	4	3D10B	2	4D10A	2
D12	Valve Rubber Retainer	3D12B	2	4D12	2	3D12B	4	4D12	4	3D12B	2	4D12	2
D13	½" Closed End Nut	3D13A	2	3D13A	2	3D13A	4	3D13A	4	3D13A	2	3D13A	2
D14	Cap Screw (Long)	3D14	5	3D14	12	3D14	6	3D14	16	3D14	5	3D14	12
D14A	Cap Screw (Short)	3D14C	1			3D14C	4			3D14C	1		
D14B	Cap Screw	3D14B	4	4D14A	4	3D14B	8	4D14A	8	3D14B	4	4D14A	4
D15	Valve Retainer Set Screw	3D15	2	4D15	2	3D15	4	4D15	4	3D15	2	4D15	2
D16	Valve Weight Set Screw	3D16	2	4D16	2	3D16	4	4D16	4	3D16	2	4D16	2
<b>D20</b>	Diaphragm	3D20	1	4D20	1	3D20	2	4D20	2	3D20	1	4D20	1
<b>D22</b>	Check Valve	3D22C	2	4D22	2	3D22C	4	4D22	4	3D22C	2	4D22	2
<b>D23</b>	Suction Flange Gasket	3D23C	2	4D23E	2	3D23C	6	4D23E	6	3D23C	2	4D23E	2
<b>D23A</b>	Discharge Flange Gasket	3D23D	1	4D23D	1	3D23D	2	4D23D	2	3D23D	1	4D23D	1
D24	Washer – Plain	4D24	2	4D24	2	4D24	4	4D24	4	4D24	2	4D24	2
D25	Washer – Plain	3D25	6	3D25	16	3D25	14	3D25	24	3D25	6	3D25	16
D25A	Washer – Plain	3D25A	4			3D25A	8			3D25A	4		
D53	Handle	3D53	2	3D53	2	3D53	4	3D53	4	3D53	2	3D53	2
*D55	Stud					3D55	2						
DH360	Clean Out Plate Stud	DH360	2	DH360	2	DH360	4	DH360	8	DH360	2	DH360	2
J5	Engine Pinion	2J5U	1	2J5U	1	2J5U	1	2J5U	1	3J5F	1	3J5F	1
J6	Engine Pinion Key	2J6	1	2J6	1	2J6	1	2J6	1	2J6	1	2J6	1
J16	17 Tooth Pinion	2J16D	1	2J16D	1	2J16D	1	2J16D	1	2J16D	1	2J16D	1
<b>Before Serial Number P-33306 Use 2J16C</b>													
J19	Eccentric	2J19T	1	2J19V	1	2J19T	2	2J19U	2	2J19T	1	2J19U	1
J20	Eccentric Key	2J20	1	2J20	1	2J20	2	2J20	2	2J20	1	2J20	1
J23	Brace Nuts	2J23	2	2J23	2	2J23	4	2J23	4	2J23	2	2J23	2
*J23A	Suction Manifold					3J23A	1	4J23C	1				
J24	Brace Nuts	2J24	2	2J24	2	2J24	4	2J24	4	2J24	2	2J24	2
J25	Pump & Jack Brace	2J25L	2	2J25L	2	2J25L	4	2J25L	4	2J25L	2	2J25L	2
J27	70 Tooth Int. Gear	2J27G	1	2J27G	1	2J27G	1	2J27G	1	2J27G	1	2J27G	1
J27C	85 Tooth Gear	2J27H	1	2J27H	1	2J27H	1	2J27H	1	2J27H	1	2J27H	1
<b>Before Serial Number P-33306 Use 2J27F</b>													
J29	Int. Shaft Bushing	2J29C	2	2J29C	1	2J29C	2	2J29C	2	2J29C	2	2J29C	2
J31	Int. Shaft	2J31G	1	2J31G	1	2J31G	1	2J31G	1	2J31G	1	2J31G	1
J42	Plunger Bottom Stud	2J42	2	2J42	2	2J42	4	2J42	4	2J42	2	2J42	2
J54	Gear Case Cover	4J54G	1	4J54G	1	4J54J	1	4J54J	1	4J54G	1	4J54G	1
J59	Gear Case	4J59J	1	4J59J	1	4J59J	1	4J59J	1	4J59J	1	4J59J	1
J60	Eccentric Shaft Support	2J60B	1	2J60B	1	2J60B	2	2J60B	2	2J60B	1	2J60B	1
J62	Eccentric Support Bolts	2J62	4	2J62	4	2J62	4	2J62	4	2J62	4	2J62	4
J63	Zerk Fitting	2J63	3	2J63	3	2J63	4	2J63	4	2J63	3	2J63	3
J74	Eccentric Bushing	2J74D	2	2J74D	2	2J74D	4	2J74D	4	2J74D	2	2J74D	2
J76	Eccentric Shaft	2J76Q	1	2J76Q	1	2J76R	1	2J76S	1	2J76Q	1	2J76Q	1
J115	5/16" x 7/8" Groove Pin	X577	4	X577	4	X577	2	X577	2	X577	4	X577	4
*J127	Crank Shaft Sleeve	2J127B	1	2J127B	1	2J127B	1						
J141	Gear Case Gasket	2J141C	1	2J141C	1	2J141C	1	2J141C	1	2J141C	1	2J141C	1
J140	Ecc. Shaft Brg. Gasket	2J140	1	2J140	1	2J140	1	2J140	1	2J140	1	2J140	1
*J150	Int. Shaft Thrust Washer	1J150B	Var.	1J150B	Var.	1J150B	Var.	1J150B	Var.	1J150B	Var.	1J150B	Var.
*J151	Thrust Washer	1J151C	1	1J151C	1	1J151C	2	1J151C	2	1J151C	1	1J151C	1
J154	Bush. For Ecc. Support	2J154	2	2J154	2	2J154	4	2J154	4	2J154	2	2J154	2
J157	Oil Fill Plug	2J157	1	2J157	1	2J157	1	2J157	1	2J157	1	2J157	1
J158	Oil Drain Plug	2J158	1	2J158	1	2J158	1	2J158	1	2J158	1	2J158	1
J170	Adapter Capscrews	2J170	3	2J170	3	2J170	3	2J170	3				
J171	Gear Cover Capscrews	2J171	11	2J171	11	2J171	11	2J171	11	2J171	11	2J171	11
J172	Motor Capscrews	2J172	8	2J172	8	2J172	8	2J172	8				
J173	Capscrew	2J173	1	2J173	1	2J173	1	2J173	1	2J173	1	2J173	1
J174	Drain Cock	2J174	1	2J174	1	2J174	1	2J174	1	2J174	1	2J174	1

\*Not shown in sectional.

**Recommended spare parts are in BOLD.**



## NOVO AD Diaphragm Self-Primer Sectional Drawing

Item Number	Item Description	AD-3-1		AD-4-1		AD-3-2		AD-4-2		AD-3-B		AD-4-B	
		Symbol	Qty.	Symbol	Qty.	Symbol	Qty.	Symbol	Qty.	Symbol	Qty.	Symbol	Qty.
J175	Setscrew	2J175	1	2J175	1	2J175	1	2J175	1	2J175	1	2J175	1
J205	Cross Head Side Plate	2J205A	2	2J205A	2	2J205A	4	2J205A	4	2J205A	2	2J205A	2
J222	Side Plate Gasket	2J222	2	2J222	2	2J222	4	2J222	4	2J222	2	2J222	2
J223	Hoisting Sling	EF598	1	EF598	1	A4443	1	A4446	1	EF598	1	EF598	1
*J224	Dowel Pin	2J224	2	2J224	2	2J224	2	2J224	2	2J224	1	2J224	2
*J228	Support Bracket	4J228	1	4J228	1								
*J231	Governor Stop	4J231	1	4J231	1								
P158	Clean Out Plate	3P158A	1	3P158A	1	3P158A	2	3P158A	2	3P158A	1	3P158A	1
P159	Clean Out Plate Gasket	3P159A	1	3P159A	1	3P159A	2	3P159A	2	3P159A	1	3P159A	1
P162	Valve Weight (Small)	3P162B	1	4D11A	2	3P162B	4	4D11A	4	3P162B	2	4D11A	2
P172	Valve Nut	3P172	4	3P172	4	3P172	8	3P172	8	3P172	4	3P172	4
P173	Discharge Flange	3P173B	1	4P173	1	3P173D	1	4P173B	1	3P173B	1	4P173	1
P175	Suction Plug	3P175	1	3P175	1	3P175	2	3P175	2	3P175	1	3P175	1
P176	Discharge Plug	3P176	1	3P176	1	3P176	2	3P176	2	3P176	1	3P176	1
V11	Valve Spacer	3V11	8	3V11	8	3V11	16	3V11	16	3V11	8	3V11	8
V2	Adapter	2J2	1	2J2	1	2J2	1	4J2A	1				
*V63	Pinion Nut									1V63	1	1V63	1
*SPC22	Shaft Seal – Outer									2SPC22	1	2SPC22	1
*SPC22A	Shaft Seal – Inner									2SPC22A	1	2SPC22A	1
SPC24	Shaft									2SPC24	1	2SPC24	1
*SPC28	Bearing Retainer									2SPC28	1	2SPC28	1
*SPC29	Retainer Shim									2SPC29		2SPC29	
SPC39	Shaft Bearing (Outer)									2SPC39	1	2SPC39	1
SPC40	Shaft Bearing (Inner)									2SPC40	1	2SPC40	1
*SPC92	Oil Filler									1SPC92	1	1SPC92	1
SPC97	Base Assembly	B2487	1	B2517	1	B2503	1	B2515	1	A4434	1	B2480	1
*U1318	Soft Washer							NNU1318	4				
<b>Wheeled Truck Assembly</b>													
*SPC95	Tongue Chain Assy.	2SPC95	1	2SPC95	1								
*SPC97	Prop Assembly	2SPC97	1	2SPC97B	1	4TR182N	1	4TR182N	1				
*SPC98	Tongue Assembly	2SPC98	1	2SPC98	1	4TR111E	1	4TR111E	1				
*SPC99	Axle	2SPC99	1	2SPC99A	1	4TR107X	1	4TR107W	1				
SPC102	Handle	2SPC102	1	2SPC102	1	2SPC102	1	2SPC102	1	2SPC102	1	2SPC102	1
SPC104	Motor Capscrew	2SPC104	4	2SPC104	4	2SPC104	4	2SPC104	4	2SPC104	4	2SPC104	4
SPC105	Motor Nut	2SPC105	4	2SPC105	4	2SPC105	4	2SPC105	4	2SPC105	4	2SPC105	4
SPC106	Motor Washer	2SPC106	4	2SPC106	4	2SPC106	4	2SPC106	4	2SPC106	4	2SPC106	4
SPC107	Gear Housing Capscrew	2SPC107	2	2SPC107	2	2SPC107	2	2SPC107	2	2SPC107	2	2SPC107	2
SPC108	Gear Housing Nut	2SPC108	2	2SPC108	2	2SPC108	2	2SPC108	2	2SPC108	2	2SPC108	2
SPC109	Gear Housing Washer	2SPC109	2	2SPC109	2	2SPC109	2	2SPC109	2	2SPC109	2	2SPC109	2
SPC110	Pump Capscrew	2SPC110	4	2SPC110	4	2SPC110	4	2SPC110	4	2SPC110	4	2SPC110	4
SPC111	Pump Nut	2SPC111	4	2SPC111	4	2SPC111	4	2SPC111	4	2SPC111	4	2SPC111	4
SPC112	Pump Washer	2SPC112	4	2SPC112	4	2SPC112	4	2SPC112	4	2SPC112	4	2SPC112	4
SPC113	Handle Capscrew	2SPC113	2	2SPC113	2	2SPC113	2	2SPC113	2	2SPC113	2	2SPC113	2
SPC114	Handle Nut	2SPC114	2	2SPC114	2	2SPC114	2	2SPC114	2	2SPC114	2	2SPC114	2
SPC115	Handle Washer	2SPC115	2	2SPC115	2	2SPC115	2	2SPC115	2	2SPC115	2	2SPC115	2
*TR1	Steel Wheel	3TR1S	2	3TR1S	2	4TR1L	2	4TR1L	2	3TR1S	2	3TR1S	2
*TR15	Axle Washer	3TR15D	4	3TR15D	4	TR15	4	TR15	4	3TR15D	4	3TR15D	4
TR16	Cotter Pin	3TR16	2	3TR16	2	3TR16	2	3TR16	2	3TR16	2	3TR16	2

\*Not shown in sectional.

**Recommended spare parts are in BOLD.**



**Lubrication**

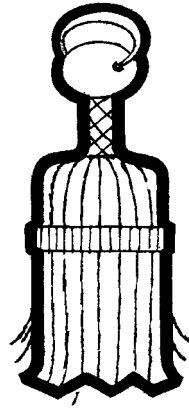
Four points of lubrication maintenance on the pump and pear case; the eccentric (J19), the eccentric shaft (J76), the intermediate shaft (J31) and gear case (J59). Parts J19, J76 and J31 are lubricated by zerk fittings. They should have daily attention using a good grade of Lithium grease. The gear case (J59) is sealed oil tight for the gears to run in a bath of oil. Pour in one pint of medium gear oil or heavy engine oil No. 50 through filler hole in top of case. Check oil weekly and replenish when necessary. On older models without oil seal around main drive shaft, gears should be lubricated once or twice a day through hole in top of gear case with heavy engine oil or medium gear oil. Ample lubrication with clean grease and oil prolongs to be had from any machine.



**Foot Valve with Strainer**

Foot valve with strainer attached to end of suction line is recommended, particularly on long lifts. It permits quick starting of the pump by holding water in the suction line during priming period. The strainer prevents large pieces of trash from clogging the pump or suction and discharge lines. Trash could also get under the check valves and hold them open. The strainer should have a good liberal area; four to six times the area of the suction opening of the pump.

NOTE: When operating during freezing temperatures, provisions must be made to drain both the suction and discharge lines.



**Clean Out**

A convenient clean out plate is located directly below the discharge flange. This provides for cleaning out of any residue that may accumulate in the pump base and for inspection of the check valves. The clean out plate is provided with *easy-off* handles requiring no wrench for removal of plate.

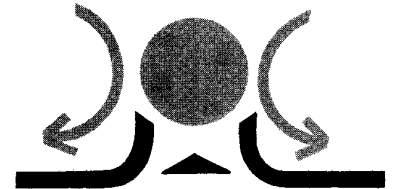


**Diaphragm**

Rightfully called "The Heart of the Pump." For this reason your pump comes equipped with a NOVO live rubber diaphragm, which under ordinary pumping conditions will stand up many times longer than an ordinary stock diaphragm. We strongly recommend obtaining your replacement diaphragms through your local authorized American-Marsh distributor.

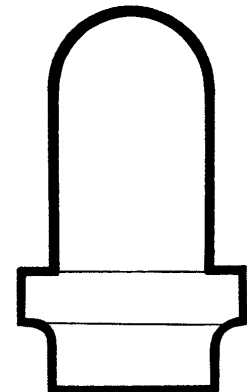
The pump is designed to make replacement of the diaphragm an easy job. Simply remove the four bolts holding the pump top (D2) and the two nuts (D13), which clamp

the crosshead to the plunger bottom casting (D4). Swing the top (D2) over the crosshead. Remove the old diaphragm and insert the new one in place, bolting the diaphragm between the crosshead and the plunger bottom.



**Valves**

Both suction and discharge valves are contained in accessible cages making inspection and replacement an easy matter. Valves should be checked occasionally and replaced when worn to the extent they are not seating properly. The length of service depends largely on the solid content of the water being pumped and how abrasive or cutting it is.

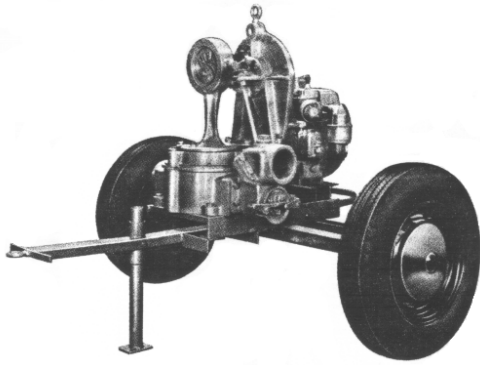


**Air Chamber**

When the pump is installed with a long suction line, an air chamber placed close to the pump in the suction line will relieve the strain on the pump and smooth up the operation. Likewise if a long discharge line is used.

**Pump 4,200 GPH to 7,200 GPH**  
**Versatile, Handy, 3" or 4"**

**NOVO SINGLE DIAPHRAGM PUMPS**

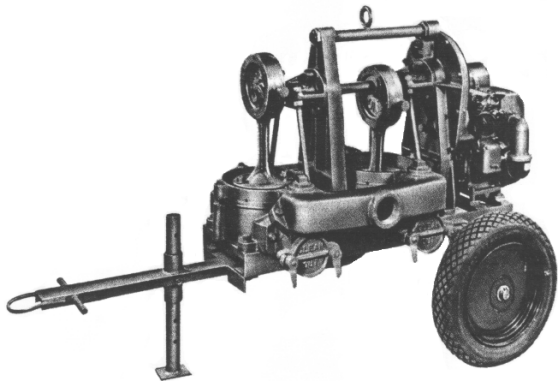


The most difficult de-watering conditions won't keep you from getting top performance from a NOVO Single Diaphragm Pump. Even sticks, stones, sludge or other abrasive materials won't clog or prevent NOVO's efficient operation. They're handled with ease when a NOVO's in action. Hundreds of difficult de-watering problems are quickly solved on public utilities, construction and maintenance projects with a 3" or 4" positive displacement model. Select from various power units to meet your specific needs: gasoline, diesel ... either air or water cooled ... or electric.

Pump & Model #	<b>AD-3W1</b>	<b>AD-4W1</b>
Pump Size	3 Inch	4 Inch
Capacities		
@ 5' Suction Lift	4,200 GPH	7,200 GPH
@10' Suction Lift	3,900 GPH	6,900 GPH
@15' Suction Lift	3,600 GPH	6,300 GPH
@20' Suction Lift	3,300 GPH	5,100 GPH
@25' Suction Lift	3,000 GPH	4,800 GPH
Weights		
Skid Mounted	485 lbs.	565 lbs.
Low Speed Trailer	515 lbs.	625 lbs.
High Speed Trailer	695 lbs.	773 lbs.

**Pump 8,400 GPH to 14,400 GPH**  
**Versatile, Handy, 3" or 4"**

**NOVO DOUBLE DIAPHRAGM PUMPS**



Pump more water, faster, on "tough" de-watering jobs with a NOVO Double Diaphragm Pump. One diaphragm pumps while the other discharges to give a full, steady flow. Double Diaphragm positive displacement models are just as reliable and rugged as the single diaphragm models. And when the NOVO goes through its paces, it handles sticks, stones, sludge and other abrasive materials with ease. Never a problem. Select from various power units to meet your specific needs: gasoline, diesel ... either air or water cooled ... or electric, in a broad range of horsepower.

Pump & Model #	<b>AD-3W2</b>	<b>AD-4W2</b>
Pump Size	3 Inch	4 Inch
Capacities		
@ 5' Suction Lift	8,400 GPH	14,400 GPH
@10' Suction Lift	7,800 GPH	13,800 GPH
@15' Suction Lift	7,200 GPH	12,600 GPH
@20' Suction Lift	6,900 GPH	12,000 GPH
@25' Suction Lift	6,600 GPH	10,500 GPH
Weights		
Skid Mounted	710 lbs.	862 lbs.
Low Speed Trailer	866 lbs.	965 lbs.
High Speed Trailer	918 lbs.	1070 lbs.

- Your Local Authorized Distributor -



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