



# LIQUIDYNAMICS™

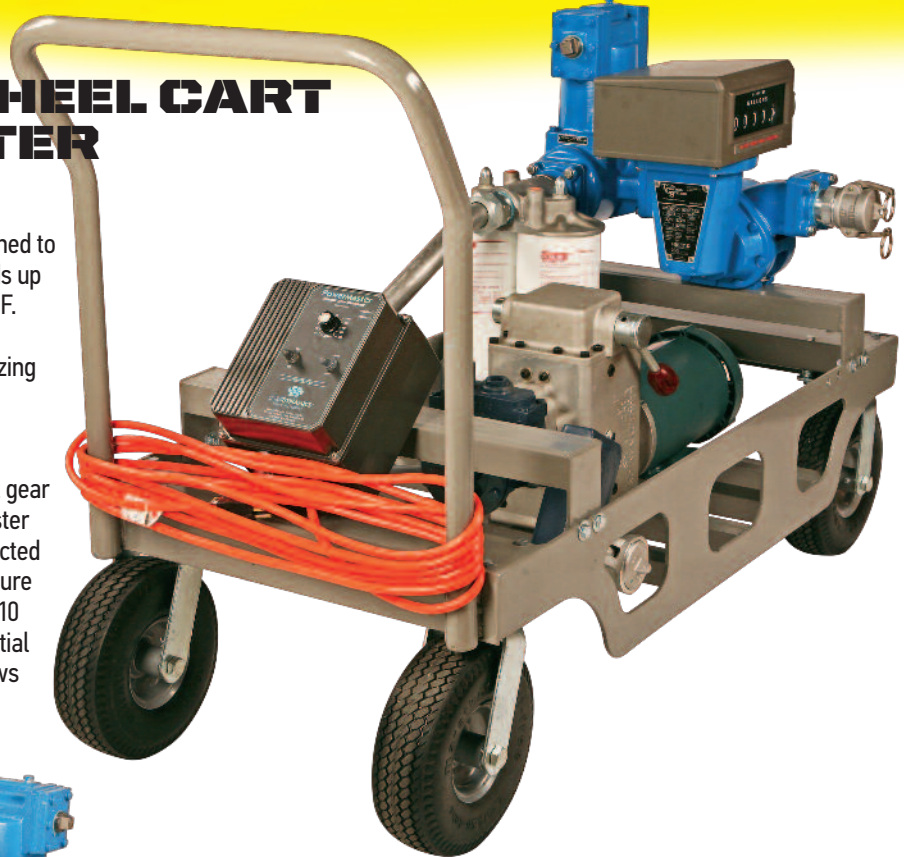
## FLUID HANDLING TECHNOLOGY

### THREE SPEED, 4 WHEEL CART WITH POWERMASTER

P/N **33384P**

This unique, 110 VAC heavy duty, 4 wheel cart is designed to transfer and/or filter a wide range of oils and hydraulic fluids up to 4900 cps. which includes 80 – 90W gear oil down to 40° F. With the combination of a 3 speed gear box and the LiquidDynamics PowerMaster you can be assured of maximizing flow rate without worrying about tripping circuit breakers.

The 3 speed gear box allows you to transfer lighter viscosities at up to 40 GPM in third gear, while second gear provides 20 GPM capability for medium viscosities and first gear will pump heavy viscosities at up to 10 GPM. The PowerMaster provides additional pump flow rate control within each selected gear, as well as automatically adjusting pump speed to ensure that amp draw does not exceed amperage available in the 110 VAC circuit that the unit is plugged into. An optional differential pressure sensor is also available, which allows the operator to set the optimum differential



pressure across the filter elements. The PowerMaster will then automatically control pump speed to maintain this preset differential pressure, thus prolonging filter life and ensuring optimum filtration efficiency for the fluid.

An on board Weights and Measures approved meter with automatic air eliminator provides accurate fluid measurement and can be ordered with a ticket printer as well as preset capability if desired. The cart is outfitted with a 12 gauge x 20' power cord and has 1½" cam lock couplings at the inlet and discharge ports.

Large 10" non-flat casters and wheels allow easy maneuverability and provide reliability. The cart frame is constructed from 1/4" plate steel for strength and rigidity and is powder coated for durability.

**Contact LiquidDynamics for availability of additional models.**

## Three Speed Viscosity Pumping Capability

The charts below provide a general guideline for the operating capability of the 3 speed gear pump without use of the PowerMaster. Using the PowerMaster significantly improves the ability of the system to pump heavier viscosities within each gear's operating range. This is accomplished by automatically maximizing pump flow rate while at the same time limiting current draw to insure that circuit current limits are not exceeded - therefore, as viscosity increases, flow rate decreases to prevent circuit overloads.

"Recommended Gear Settings Chart" depicts approximate viscosity operating ranges for each gear.

RECOMMENDED GEAR SETTINGS CHART			
Fixed Gear Pumps	3 Speed pump setting	Typical operating range	** Pump should be empty to start
2 HP 40 GPM	3rd Gear 40 GPM	Up to 230 Centipoise	180 Centipoise and above
2 HP 20 GPM	2nd Gear 20 GPM	Up to 600 Centipoise	500 Centipoise and above
2 HP 10 GPM	1st Gear 10 GPM	Up to 4900 Centipoise	3500 Centipoise and above
<b>NOT RECOMMENDED</b>		<b>5000 Centipoise and above</b>	
** "Pump should be empty to start" column indicates the viscosity at which pump needs to be empty of fluid in order to "start" when pumping the higher viscosities noted in the "Typical operating range" column.			

"Lubricant Viscosity Chart" provides approximate viscosity of oils at various operating temperatures. Note: Chart depicts average viscosity and should only be used as a general reference.

LUBRICANT VISCOSITY CHART												
Temperature		100 F	90 F	80 F	70 F	60 F	50 F	40 F	30 F	20 F	10 F	0 F
FLUID	ISO No.	38 C	32 C	27 C	21 C	15 C	10 C	4 C	-1 C	-7 C	-12 C	-18 C
A.T.F		35	44	56	72	95	127	176	250	366	544	872
5w-20		46	59	76	101	136	188	268	394	598	944	1557
10w	32	37	49	64	87	122	176	263	407	659	1120	2012
5w-30		61	78	101	134	182	252	359	528	801	1262	2070
Hydraulic	46	46	61	82	114	163	241	370	592	995	1763	3319
10w-30		70	91	121	165	230	331	491	755	1205	2010	3517
20w	68	68	92	127	181	266	405	640	1059	1843	3392	6651
30w	100	100	135	187	267	392	596	940	1547	2670	4854	9364
10w-40		97	126	168	228	317	454	669	1017	1605	2635	4523
15w-40		123	164	223	311	445	656	998	1575	2585	4437	7999
40w	150	128	178	253	370	562	887	1457	2510	4555	8765	18015
20w-50		164	222	308	440	645	976	1530	2494	4243	7575	14266
80W-90		143	198	282	412	622	975	1591	2717	4880	9275	18770
50w	220	226	321	470	709	1110	1807	3074	5491	10358	20769	44595
80W-140		263	359	502	720	1062	1615	2542	4152	7068	12596	23621
90w gear	320	331	479	713	1099	1757	2926	5099	9346	18121	37417	82894
140w gear	460	479	702	1060	1658	2693	4557	8077	15065	29745	62574	141305
Readings are in centipoise.												

