

Hydra-Cell[®]

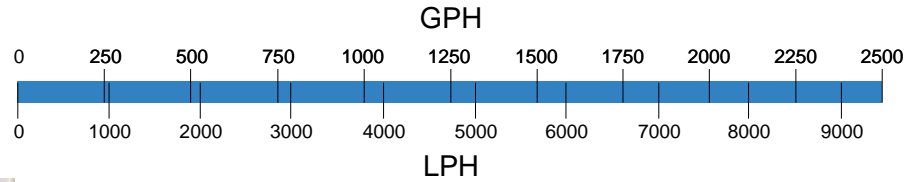
*Precision
Pumping
Applications*

- $\pm 1\%$ steady state accuracy
- Flow rates from 0 to 2100 GPH/ 7950 LPM
- Thirty-plus years of field-proven reliability
- Inherently superior performance, mechanical simplicity and cost-efficiency over other metering pump designs



WANNER ENGINEERING INC

Hydra-Cell® Pump Capacity:



F/G-20

Shaft-driven
up to 1500 psi
(100 bar)



60 GPH / 227 LPH

D/G-03

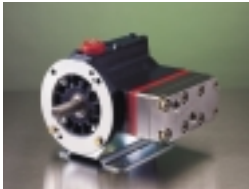
Shaft-driven
up to 1200 psi
(80 bar)



120 GPH / 454 LPH

D/G-04

Shaft-driven
up to 2500 psi
(170 bar)



120 GPH / 454 LPH

D/G-10

Shaft-driven
up to 1000 psi
(70 bar)



480 GPH / 1817 LPH

D/G-15

Shaft-driven
up to 2500 psi
(170 bar)



720 GPH / 2725 LPH

H/G-25

Shaft-driven
up to 1000 psi
(70 bar)



1200 GPH / 4542 LPH

D/G-35

Shaft-driven
up to 1200 psi
(80 bar)



2100 GPH / 7950 LPH



The cost-effective metering pump alternative



Durability, Performance, Simplicity...

Wanner Engineering's world class manufacturing and the Hydra-Cell's unique design create a cost-effective alternative to conventional hydraulically-driven diaphragm metering pumps.

Hydra-Cell Metering Pump Advantages

- Precise, steady-state accuracy of $\pm 1\%$
- Repeatability to 3% or better
- Linearity to 3% or better
- 10:1 turndown ratio
- Positive displacement with smooth, virtually pulse-free flow
- Flow rates from 0 to 2100 GPH/7950 LPH; pressures to 2500 psi/170 bar
- High volumetric efficiencies – low power consumption
- 30+ years of field-proven reliability
- Inherently superior performance, mechanical simplicity and cost-efficiency over other metering pump designs
- Wide choice of materials of construction for pump heads, diaphragms and valve assemblies
- Capable of metering viscous slurries
- Sealless design – can pump solids in suspension
- Can run dry!
- Heavy-duty industrial construction for long service life in harsh conditions
- Hydraulically-balanced, unstressed diaphragms

Hydra-Cell[®] pumps handle the full spectrum of difficult fluids.

◀ Non-Lubricating

Liquid
Gases

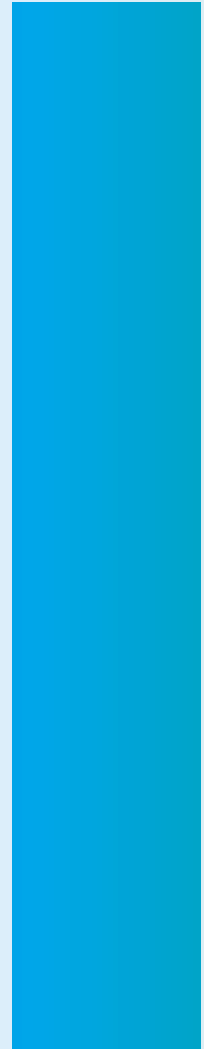
Freon

Ammonia

Polymers

Fuels/
Additives

D.I.
Water



Fuel Additives



NOX Reduction
Ammonia Injection



Gas Cooling
De-ionized Water

Viscous Abrasives



Glycols

Chlorine

Acids/
Caustics

Glues/
Adhesives

Ink/
Paints

Resins

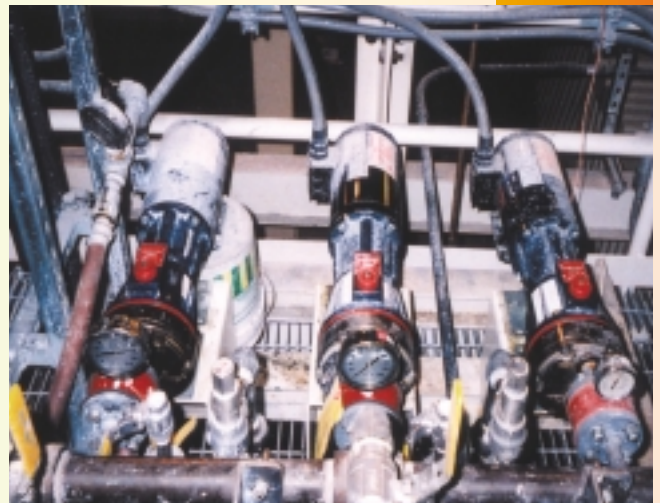
Slurries



Inks/Paints

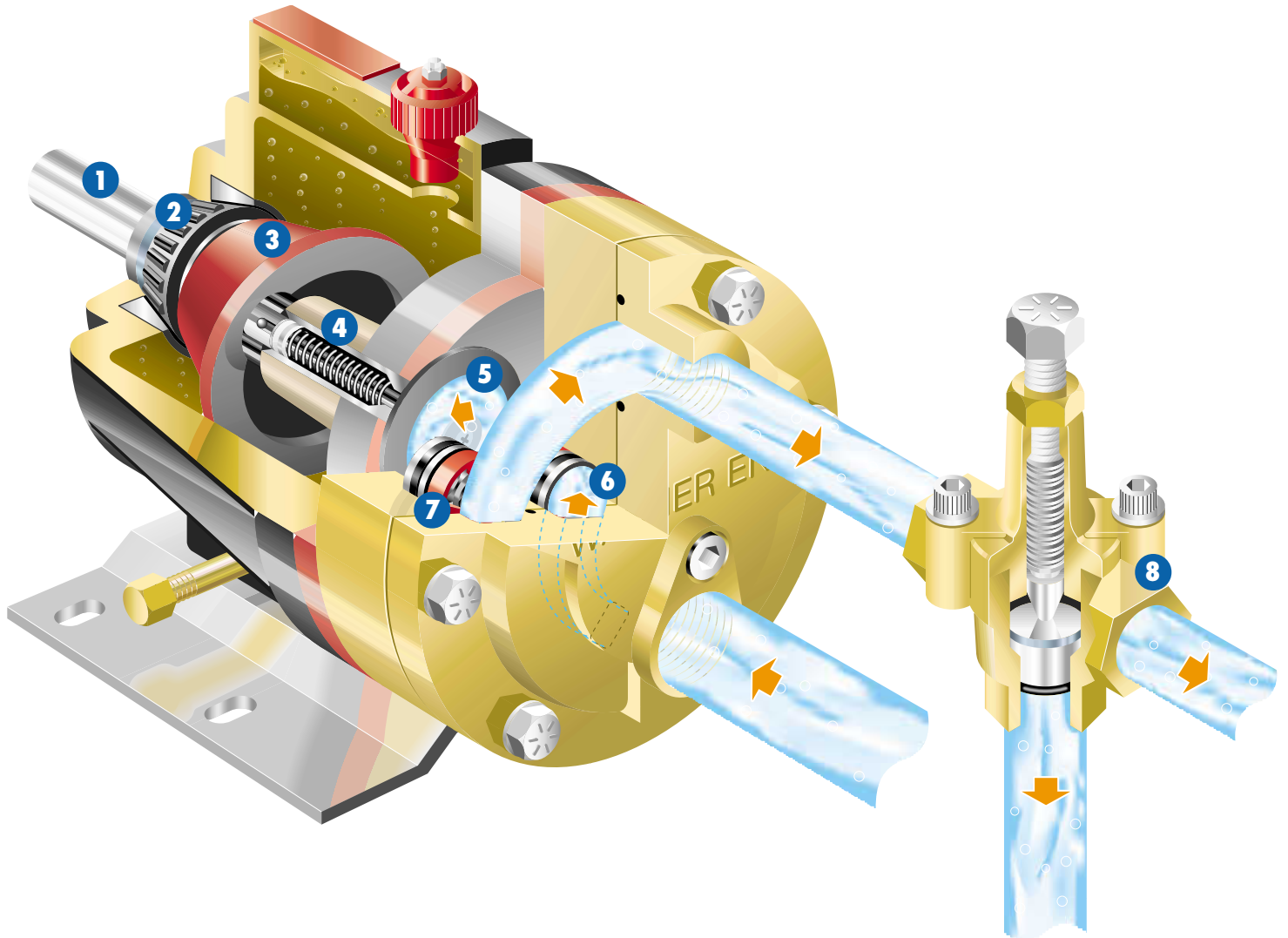


Acids/Caustics



Flue Gas Desulfurization

Hydra-Cell®... "Simply Built to Last!"



- 1 Drive shaft – via electric motor, hydraulic motor, belt and pulley, etc.
- 2 Roller bearings – rigid support, immersed in lubricating oil bath
- 3 Fixed-angle cam – translates rotary motion into linear to the hydraulic cells
- 4 Hydraulic cells – displace diaphragms via pressurized oil

- 5 Diaphragms – hydraulically balanced, no stress during flexing
- 6 Inlet valve assemblies – simple design, allows liquid into pump chamber
- 7 Outlet valve assemblies – allows liquid to flow into pressurized discharge line
- 8 Pressure regulating valve – controls output pressure and prevents pump overload

Hydra-Cell Design Advantages for Precision Pumping

Acceleration Head	When determining NPSHa, the acceleration head is a key factor. Most metering pumps are single or duplex designs which develop significant loss from the starting and stopping of the fluid. The Hydra-Cell has a three or five diaphragm design making the pumps virtually pulsation free. Limiting acceleration head and reducing NPSHa offers a smooth, more accurate system.
Accuracy	The Hydra-Cell is an inherently simple pump system, both from a mechanical pumping standpoint and from a control standpoint. Utilizing a variable speed drive provides exacting motor/pump performance.
Output	As part of a complete metering pump system, Hydra-Cell pumps eliminate micrometers and all the complex, costly mechanical and flow control mechanisms employed by conventional metering pumps. Hydra-Cell flow rates are virtually pulse-free and are precisely controlled by motor speed.
Cost vs. Performance	Compared to a comparable single or duplex metering pump, the Hydra-Cell is 1/3 to 1/2 the cost!
Chemical Feed Performance	Custom fabricated systems allows higher profitability when Hydra-Cell pumps are used to handle difficult fluids under difficult control environments.
Flow/Pressure	Hydra-Cell pumps operate at flow rates to 2100 GPH (7950 LPH) and pressures to 2500 psi (80 bar). Hydra-Cell flow rates are virtually pulse-free and are precisely controlled by motor speed.
Running Dry	Hydra-Cell pumps can run dry without damage.

