



ARO New FDA Compliant Diaphragm Pump Launch Program

**ARO Product Management Team
Fluid Product Management SBU, Asia Pacific
October. 2014**



FDA Diaphragm Pump Overview



- Value Proposition
- Pump Design vs. EXP Pump
- Unique Design Features
- ARO Fabulous Advantages
- Comparison vs. Competitors
- Model Number Review
- FDA Compliance
- Target Markets
- Target Applications
- PM Series Sanitary Pumps
- Launch Kit



ARO Value Proposition



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Industrial Technologies



Reliability

Low failure cost

No air leakage and fluid leakage

No icing and stalling

Stable flow rate performance

Long Lifetime

Able to work in high temperature during CIP

Safety

Meet Special FDA Requirements in Target Markets

No rustiness in air and fluid section

Fluid Section material meet FDA compliance

Diaphragm & ball material: FDA PTFE & FDA Santoprene

Easy Maintenance

Reduced Service and Maintenance Cost

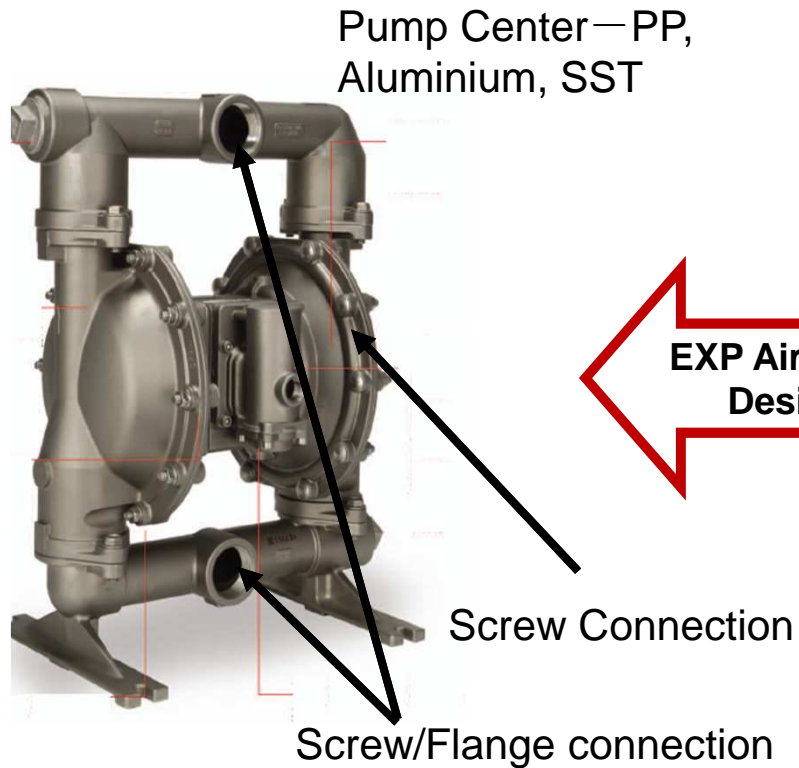
QKD Tri-clamp construction for easy service/maintenance and CIP (Clean In Place) application



Pump Design vs. EXP Pump

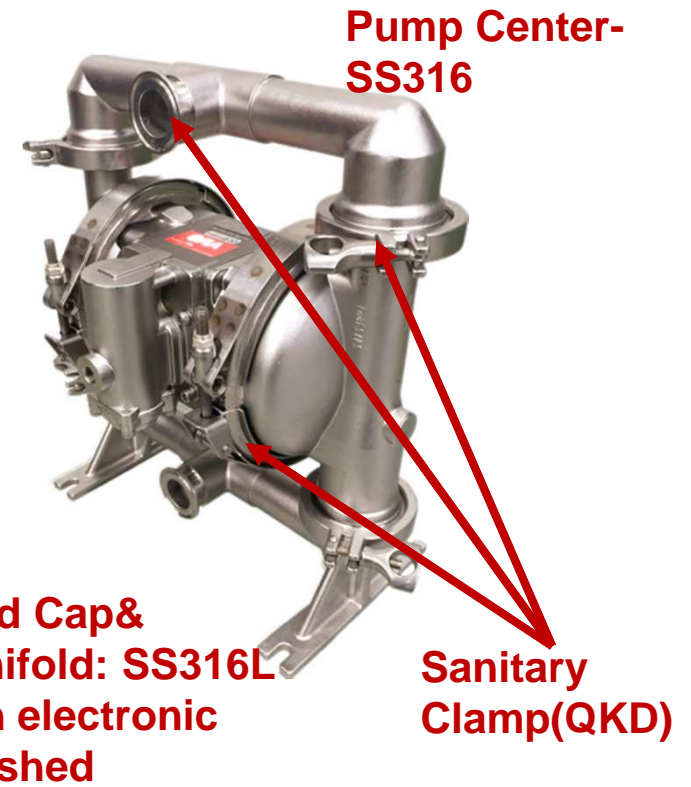


EXP SST Pump



Fluid Cap&
Manifold: SS316
without polish

New FDA Pump



All section meet the FDA Standard



Unique Design Features

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1. Band Clamp Design - QKD (quick-knock-down) - No Dead Angle, Easy Clean & Maintenance

2. Diaphragm Bead Design - No Leakage



- Add 0.5mm embossment to get better sealing for PTFE diaphragm

3. All 316L Stainless steel electronic polished Construction- No Rustiness, No fluid residual and No Bacteria Risks



- Redesign the retainer geometry to allow more contacting surfaces between clamp and caps
 - a) Less stress loaded into v-clamp
 - b) More efficient clamp
 - c) More safety

Use the self-locking nuts to prevent v-clamp loosen in pressurized application

ARO Fabulous Advantages

Sanitary. Now made simpler.



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- ✓ EXP air valve design commits ***lower “Total Cost Of Ownership”***
- ✓ ***> 20%*** higher flow rate leading the market
- ✓ ***Highest*** wet suction lift
- ✓ Electronic Polish Stainless Steel ***316L*** for Fluid Cap, Manifold
with up to ***Ra125*** surface roughness
- ✓ ***Food Grade*** PTFE and Santoprene Diaphragm meet FDA standard
- ✓ ***One simple*** standard wrench to access pump easily
- ✓ ***Stainless Steel 316*** center body best endurance in high temperature field

Comparison vs. Competitors



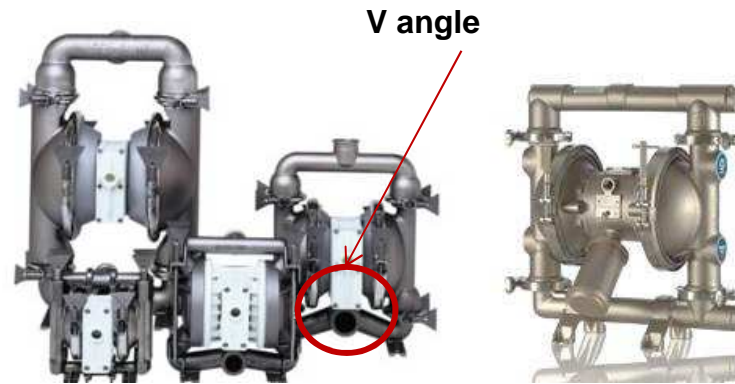
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Construction Materials- No impurities and bacteria risk

- Wetted parts **316L** stainless steel
- Center body **316** stainless steel
- **Electronic Polish** surface treatment

Pump design minimize remain material, less clean time and easy to clean

- QKD (Quick Knock Down) Design
- **Right angle** inlet manifold



Others

Construction Materials-

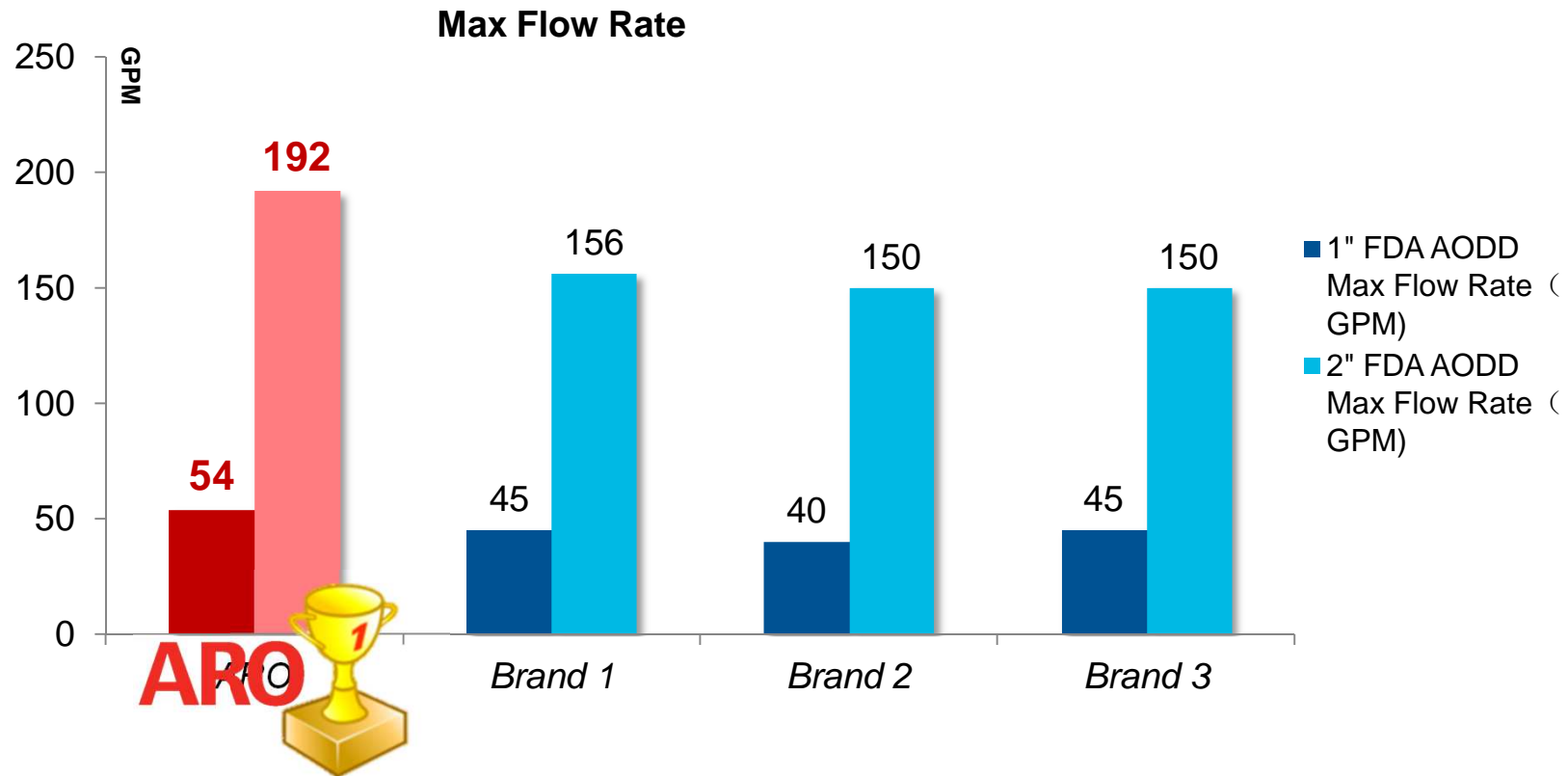
- Wetted parts **316** stainless steel
- Center body **propylene, aluminum,** stainless steel

Pump Design

- **Thread** inlet/outlet design
- **V angle** inlet manifold permits remain materials and potential bacteria risk



Comparison vs. Competitors



ARO is leading in Efficiency in FDA compliant pump market based on same operation condition

Competitors refer to Wilden Saniflo, Graco Saniforce, Sandpiper FDA



Model Number Review



1	2	3		4	5	6		7	8	9		10
SD	10	S	-	C	S	S	-	S	M	M	-	A

Position 1	
Code	Series
SD	Sanitary Pump

Position 4	
Code	Connection
C	Compression Clamp

Position 7	
Code	Seat Material
C	316L Stainless Steel

Position 10	
Code	Revision
A	First

Position 2	
Code	Series
10	1" Port
20	2" Port

Position 5	
Code	Wetted Parts
S	316L Stainless Steel
Position 6	
Code	Clamp/Hardware
S	Stainless Steel

Position 8	
Code	Ball Material
M	Medical Grade Santoprene
T	PTFE

Position 3	
Code	Center Section Material
S	316 Stainless Steel

Position 9	
Code	Diaphragm Material
M	Medical Grade Santoprene
T	PTFE/Santoprene

Service Kit

Service Kit	SD10S 1" Pump	SD20S 2" Pump
Fluid Kit (Santoprene)	637493-MM	637494-MM
Fluid Kit (PTFE)	637493-TT	637494-TT
Air Kit	637495	637497
Valve Kit	637496	637498



FDA Certificate of Conformance

10 February 2010
Revised 19 September 2014



Certificate of Conformance

RE: FDA Approved Materials for contact with Fluids:

Diaphragm Pumps 1/4" through 3"
PD, PF, PE & PM Series Diaphragm Pumps
SD, SE Series Diaphragm Pumps
666xx-xxx-C Series Diaphragm Pumps
SBxx-xxx-x Pulsation Dampeners

To Whom It May Concern:

The materials of construction used for fluid wetted STAINLESS STEEL components comply with established FDA regulation 21 CFR 177 Stainless steel specifications for use in USDA applications.

Uncolored polypropylene fluid wetted components comply with established FDA regulation 21 CFR 177.1520

Elastomers:

Resins used (Santoprene, Hytrel, PVDF or PTFE) for ARO Diaphragms, Balls and Seats, meets one or more of the following FDA requirements in the Code of Federal Regulations:

Santoprene Balls/Seats/Diaphragms

21 CFR 177.1210

PTFE Balls/Seats/Diaphragms

21 CFR 177.1550

21 CFR 177.1520

21 CFR 177.2600

21 CFR 177.300

21 CFR 175.105

21 CFR 175.170

21 CFR 176.180

Best Regards,

Ingersoll Rand Company

A handwritten signature in blue ink that reads "Michael Conti".

Michael Conti

Principal Engineer – ARO Fluid Management
Ingersoll Rand Company



Sanitary Customer Needs

- Must be Easy to Clean, Inspect and Maintenance
- Does not damage their products
- Minimize the water usage
- Maximize the Reliability & Efficiency
- Lower total Cost of Ownership

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Target Markets

- **Food**
 - Jelly, Yoghourt, Ice Cream
- **Sauces & Beverages**
 - Soy sauce, juices, alcohol beverages
- **Dairy**
- **Health & Personal Care**
 - Latex liquids e.g. Creams, shampoo
- **Pharmaceutical**
- **CIP (Clean In Place)**
- **SIP (Sterilize In Place)**



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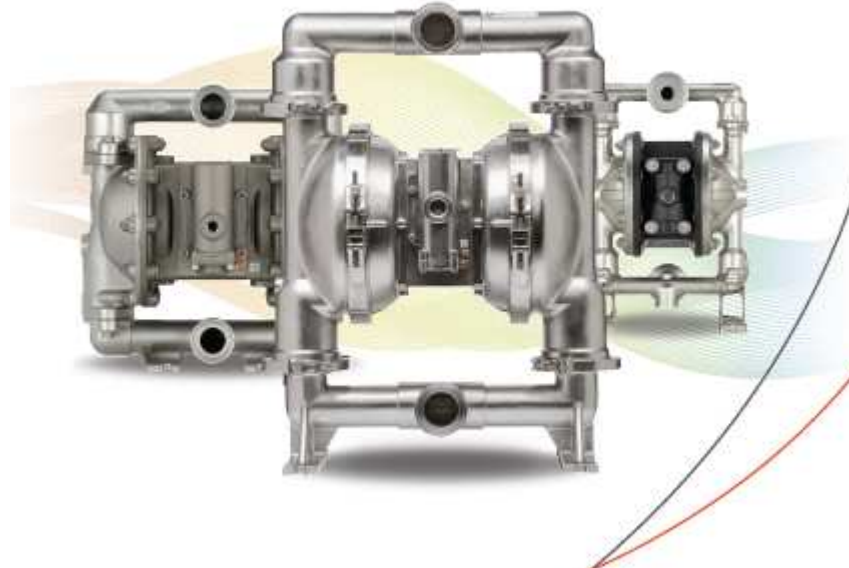
Target Applications

- Injection & Metering
- Mixing, Filling, Bulk Transfer
- Recirculation, Reclamation
- Flushing / Cleaning (CIP)





Year Warranty



ARO FDA Sanitary Pumps are backed up by our **5** year warranty, as a measure of the confidence we place in the quality of ARO pumps. A confidence that you can share.

This warranty does not cover failure of parts or components due to normal wear or damage, which in the judgment of ARO, arises from misuse, abrasion, corrosion, negligence, accident, substitution of non-ARO parts, faulty installation or tampering.





Promotion Program

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1. Promotion price applied to each 1" model during promotion period

Model	CPN	Description	List Price (USD)	Promotion Price (USD)
SD10S-CSS-SMM-A	24085227002	1" Pump - Santoprene	\$ 2,911	\$ 1,550
SD10S-CSS-STT-A	24085227001	1" Pump – PTFE	\$ 3,061	\$ 1,630

2. Order a minimum of 5 units 1" FDA pumps and together with corresponding Fluid Kits and Air Kits, **Save 20% on net buying price for the kits!**

Example:

8 units SD10S-CSS-SMM-A



+

8 units Fluid kits 637493-MM



-20%

+

8 units valve kits 637496



-20%

NOTE:

1. Promotional action valid until 1st December. 2014
2. Order to be validated through ES# process
3. Only above model in the scoping
4. No extra discount offered during promotion period
5. The forecast plan prior to enter order is critical for on-time-delivery



Lead Time

To ensure a satisfied On-Time Delivery

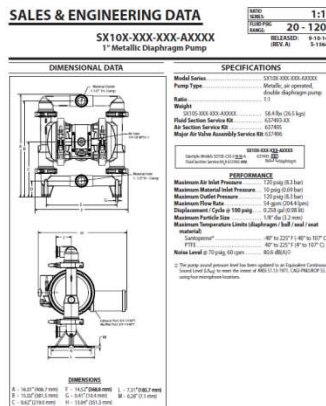
- We understand the on-time delivery is critical to your productivity
- Your monthly forecast plan is necessary and important to us
- Thank you for your understanding and supports



ARO 1" FDA compliant diaphragm pump is available from October

Sales Tools

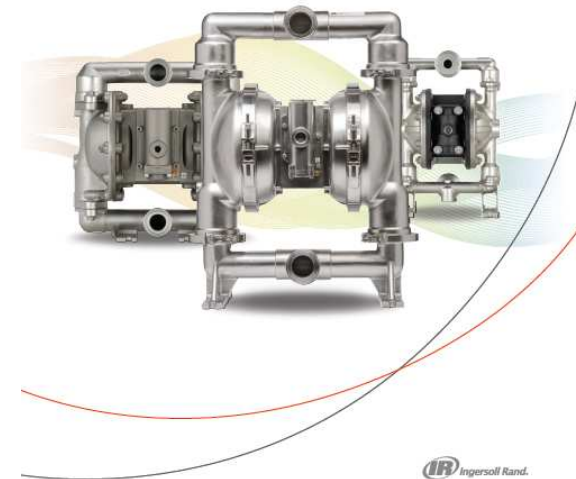
- ARO FDA Pump Training Presentations
- Installation & Maintenance training/Video
- Operator Manual
- Sales & Engineering Manual
- FDA Certificate of Compliance
- Product Brochure
- ARO Web Side



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FDA COMPLIANT SOLUTIONS
AIR OPERATED DOUBLE DIAPHRAGM PUMPS



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**Fluid
Intelligence**

