GENERATED FROM EFFICIENCY.
ADAPTED FOR FLOW. BUILT FOR LONGEVITY.
RUGGED CONSTRUCTION TO HANDLE CORROSIVE FLUIDS.

C·SHELL

WITH EDGE IMPELLER TECHNOLOGY®

MDM PUMPS

AN MDM PUMPS PRODUCT

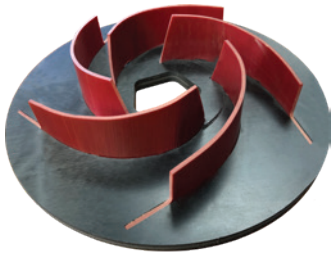
4x3-10 Model Side and Front View

Adapted for Efficiency and Longevity

The highly efficient enclosed impeller for C•Shell® pushes the limits of conventional end suction centrifugal pumps. The Innovative semi-open "Edge" impeller boasts excellent flow performance and solids handling capability. The ultra-strong yet thin vaned design provides for reduced turbulence and frictional loss.

MDM's selection principles exceed industry standards. We compile extensive bench data for each pump and make the best selection using a proprietary computational program. We focus on the needs of each customer with tailored solutions, by optimizing efficiency and component quality. This partner based philosophy provides customers with the lowest cost of ownership and the highest return on investment.

Enclosed Impeller



Semi-Open Impeller (Edge Technology)

Type 21 Cartridge Mechanical Seal

This conventional and simple seal design allows for a wide range of different face materials to be configured for a wide range of corrosive process fluids. The chamber design provides for easy and fast installation.

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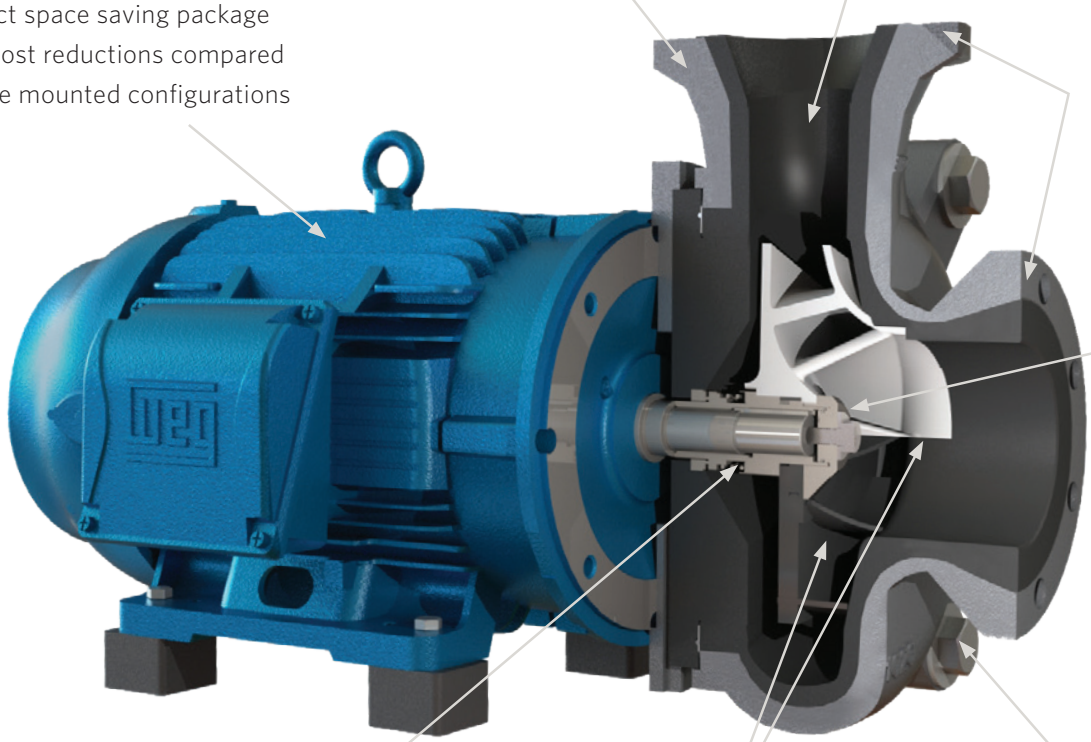
EXTERNAL CASE MATERIALS
- Rugged thick wall Cast Ductile Iron
- Chemical resistant epoxy coated surfaces

CORROSION RESISTANT NON-METALLIC INTERNALS
- W35 Vinyl Ester Resin internal lining
- Smooth Internal Passages for High Efficiency
- Low/High temperature rated
- High abrasion resistance

FOOTPRINT
- Close-coupled configurations with NEMA JM motors up to 60 HP
- Compact space saving package
- Major cost reductions compared to frame mounted configurations



OPTIMIZED PORT CONFIGURATION
- ANSI Flanges from 2"-8"
- Centerline Orientation

SHAFT SLEEVE IMPELLER DESIGN
- Fast and Easy assembly
- No alignment or wear-rings required

SIMPLISTIC TYPE 21 COMPONENT SEAL
- Extended service life
- Increased efficiency
- Multiple material options for specific applications

IMPELLER OPTIONS
- Edge Semi-Open Impeller
- Edge Enclosed Impeller
- Solids handling
- Thin impeller vane design provides significant flows compared to traditional semi-open impeller designs
- 80% peak efficiency

*THROUGH BOLT DESIGN
- Ease of Maintenance
- 4 lug style through bolts make for simple case access
- Fast assembly/disassembly

**3x2-10 excluded from through bolt design.*

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3x2-10 Model with VFD

Variable Frequency Drive (VFD)

C•Shell® pumps in combination with a variable frequency drive (VFD) result in a versatile pumping system with the lowest total cost of ownership. This is accomplished by slower operating speeds with a larger more efficient impeller, reducing energy consumption and increasing service life. Pump purchases should be seen as power and labor contracts, since operating cost will far exceed acquisition cost.

The design experts at MDM will size the pump to meet maximum system flow and validate whether a VFD is appropriate for your pumping application. Below is a list of potential operating benefits.

Aegis ground rings and insulated bearings can be provided for additional protection with VFD applications.

Benefits

- Reducing rotational speed will draw less electrical power compared to valve throttling.
- Increased service life by lowering rotational speed (seals, bearings and motor).
- Ability to integrate with system automation and monitoring.
- Rotational speed can be controlled to maintain a desired flowrate as system pressure demands fluctuate.
- Inherent soft starting reduces wear on motor and other system components such as piping and valves.
- Voltage being supplied to the motor is optimized based on the operating load, thus maintaining the right amount of motor slip.
- Some utilities offer rebates for installing VFDs in new or retrofit work.

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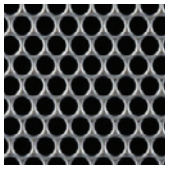
C•Shell® 4x3-11 Unit with a Basket Strainer (FT)

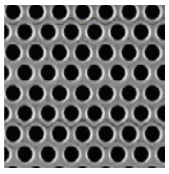
Basket Strainer (FT)

Our heavy duty FT model strainers are suitable for marine aquatic and industrial applications. These strainers are customized so the effluent port lines up with the pump inlet port. In additional to efficient solids removal, basket strainers will protect the pump impeller and can be used as priming pots for suction lift applications.

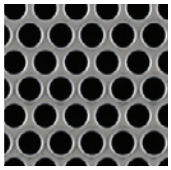
FT model strainers are constructed of FRP, PVC, and 316SS. These materials results in a product that is extremely corrosion resistant and built to last the life of any project. Our standard basket is 18 Gauge 316SS, constructed with 1/8" holes perforated on 3/16" staggered centers. As depicted below, baskets can be fabricated with a variety of hole sizes and open areas to meet varying design requirements. Baskets are laser cut for maximum strength and service life.



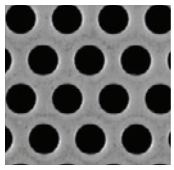
5/32" Perf @ 3/16" centers. 33 holes per sq. in. 63% open area



1/8" Perf @ 3/16" centers. 33 holes per sq. in. 40% open area



3/16" Perf @ 1/4" centers. 18.5 holes per sq. in. 51% open area



1/4" Perf @ 3/8" centers. 8.1 holes per sq. in. 40% open area

STRAINER SIZE	PUMP SIZE	CONNECTION CENTERLINE (STRAINER OUTLET AND PUMP INLET)	MATERIALS OF CONSTRUCTION	PART NUMBER
4x3	3x2	8.25"	FRP Body PVC Flanges & Drain 316 SS Basket & T-Handles	24170608
6x4	4x3	8.25"	FRP Body PVC Flanges & Drain 316SS Basket & T-Handles	24170748
8x6	6x5	9.75"	FRP Body PVC Flanges & Drain 316 SS Basket & T-Handles	24170881

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2020 Pump Options (60 HZ)

PUMP MODEL	C•Shell 3x2-10	C•Shell 4x3-10	C•Shell 6x5-11
ALLOWABLE FLOWRATE RANGE (GPM) [1]	145-425	185-910	455-1600
ALLOWABLE PRESSURE RANGE (FT) [1]	25-110	20-155	25-130
MAXIMUM EFFICIENCY	68%	72%	74%
MOTOR POWER (HP) [2]	3 through 20 (CC)	3 through 60 (CC)	10 through 60 (CC) 75 through 100 (FM)
POWER OPTIONS (VOLTAGE / PHASE)	230-460V / 3ø	230-460V / 3ø	230-460V / 3ø
NEMA MOTOR FRAME [2]	143 JM-256 JM (CC)	213 JM-324 JM (CC)	254 JM-324 JM (CC) 364 5T-444 5T (FM)
WET END MATERIAL	Cast Ductile Iron with Thermoset Polymer Interior Lining	Cast Ductile Iron with Thermoset Polymer Interior Lining	Cast Ductile Iron with Thermoset Polymer Interior Lining
MECHANICAL SEAL	Type 21 Cartridge (Metallic)	Type 21 Cartridge (Metallic)	Type 21 Cartridge (Metallic)
IMPELLER TYPE	Semi-Open or Recessed	Semi-Open or Enclosed	Semi-Open or Enclosed
IMPELLER MATERIAL	Nylon, 316 SS, CD4M	Nylon, 316 SS, CD4M	Nylon, 316 SS, CD4M

1. Allowable Operating Range (AOR) is between 70% & 120% of flow at Best Efficiency Point (BEP).
2. CC = Close Coupled / FM = Frame Mounted.

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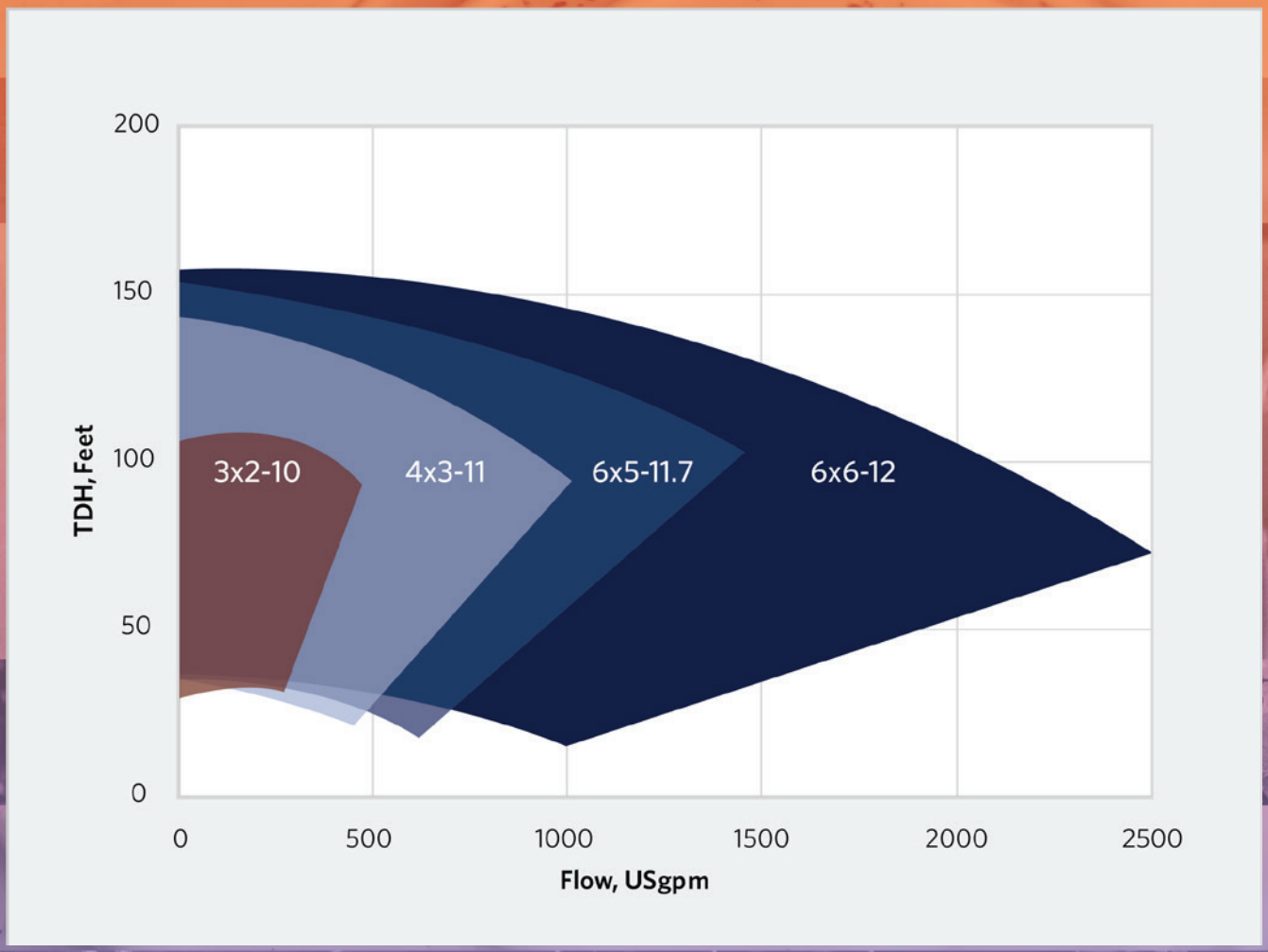
Family Performance



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