

HYDRO SERIES

In-line/Open Channel Grinders

Overview

JWC Environmental's Hydro series are high efficiency, dual-shafted waste grinders. The Hydro series is designed to reduce the size of solids in a liquid/slurry solution to protect downstream equipment, such as pumps, centrifuges and heat exchangers.

Applications include:

- Borehole drilling, oil sands processing, tank bottom cleaning.
- Fats/Oil/Grease (FOG), food/beverage processing, animal and fish processing.
- Biogas digesters, sludge, sewage and more.

1-HYDRO In-line/Open Channel Grinders

The 1-HYDRO is a compact grinder, tough on solids in a variety of applications. It fits into areas with limited space requirements while still providing the necessary power for downstream protection. The 1-HYDRO is an ideal, low-cost solution that fits perfectly into office buildings, apartment complexes, resorts, retail centers and food processing plants.

3-HYDRO In-line/Open Channel Grinders

The 3-HYDRO is a grinder that easily reduces troublesome solids. Its slow speed, high-torque, dual-shaft design easily shreds tough solids that typically cause problems, including drill cuttings, fish/seafood waste, food waste, manure, and more.

4-HYDRO In-line/Open Channel Grinders

The 4-HYDRO excels in wet applications. It's a powerful grinder for large sludge processing systems, or any applications with large flow. Industrial applications including fish/beef/poultry processing, petroleum, pulp and paper mills, chemical plants, oil sands processing and recycling plants.

Features

Dual Shafted Grinder

- Slow-speed, high torque grinders handle food, rags, rocks, wood, wipes, clothing, plastics and other debris.
- Capable of grinding a wider variety of solids than single shafted machines, macerators, or chopper pumps.

Compact and Efficient Design

- Adapts to many applications with little or no modification.
- HYDRO-IX Industrial Monster incorporate an easy to remove cutter cartridge.

Automated Monitoring and Controls

- Auto load sensing and reversal, mechanism and optimize the grinder's performance.

Benefits

Powerful

- Slow speed, high torque grinders easily shred tough solids to keep pipes and pumps flowing.

Flexible

- A variety of standard and custom cutters are available to ensure a large variety of tough solids are cut down to size.

Equipment Protection

- Protect pumps, Heat exchangers centrifuges and other critical equipment from costly clogs and damage from tough solids.

Lower Operating Cost

- Clear pipes and pumps means shorter pump run cycles, lower maintenance costs and lower electrical costs.



In-Line Models

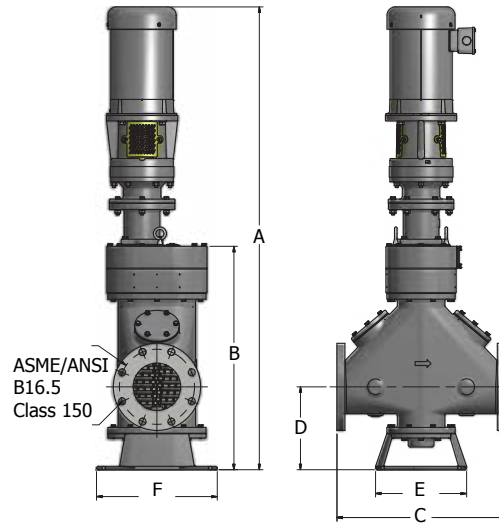
SEALS: MECHANICAL OR FLUSH PORT



1-HYDRO-I

3-HYDRO-IX

4-HYDRO-I



HYDRO-IX - Pipeline / In-line Configuration

IN-LINE Model	Flow Rate gpm (m ³ /hr)*	Pressure Drop psi (bar)	Standard Dimensions inches (mm)						Pipeline Size inches (mm)	Approximate Net Weight lbs (kg)****
			A	B	C	D	E	F		
1-HYDRO-I-0804	275 (62)	0.36 (0.03)	44 (1118) ¹	18-1/2 (470)	16 (406)	6-1/4 (159)	8-1/4 (210)	12 (305)	4 (100)	303 (137)
1-HYDRO-I-0806	550 (125)	1.33 (0.09)	44 (1118) ¹	18-1/2 (470)	19 (483)	7-1/4 (184)	8-1/4 (210)	12 (305)	6 (150)	323 (147)
3-HYDRO-I-0804**	450 (102)	0.91 (0.06)	50-3/8 (180) ²	20-1/2 (521)	19-1/4 (489)	9-3/8 (238)	7 (178)	12 (305)	4 (100)	380 (172)
3-HYDRO-I-1206**	700 (159)	1.23 (0.08)	54-3/4 (1391) ²	24-7/8 (632)	21-1/4 (540)	10-3/8 (264)	7 (178)	12 (305)	6 (150)	445 (202)
3-HYDRO-I-1208**	1100 (250)	3.00 (0.21)	54-3/4 (1391) ²	24-7/8 (632)	23-1/4 (591)	11-1/4 (238)	7 (178)	12 (305)	8 (200)	470 (213)
3-HYDRO-I-1810**	1700 (386)	5.13 (0.35)	60-3/4 (1543) ²	30-7/8 (784)	27-1/4 (692)	12-5/16 (313)	7 (178)	12 (305)	10 (250)	575 (261)
3-HYDRO-I-2412**	2450 (556)	5.80 (0.40)	66-1/2 (1689) ²	36-5/8 (930)	31-1/4 (794)	13-1/4 (337)	7 (178)	12 (305)	12 (300)	650 (295)
3-HYDRO-IX-1204***	450 (102)	0.52 (0.04)	58-1/8 (1476) ²	28-1/4 (718)	19-1/4 (489)	9-3/8 (238)	11-1/2 (292)	15-1/4 (387)	4 (100)	550 (250)
3-HYDRO-IX-1206***	700 (159)	1.23 (0.08)	58-1/8 (1476) ²	28-1/4 (718)	21-1/4 (540)	10-3/8 (264)	11-1/2 (292)	15-1/4 (387)	6 (150)	560 (254)
3-HYDRO-IX-1208***	1100 (250)	3.00 (0.21)	58-1/8 (1476) ²	28-1/4 (718)	23-1/4 (591)	11-1/4 (238)	11-1/2 (292)	15-1/4 (387)	8 (200)	570 (259)
3-HYDRO-IX-2410***	1700 (386)	2.97 (0.20)	69-5/8 (1768) ²	39-3/4 (1010)	27-1/4 (692)	12-5/16 (313)	11-1/2 (292)	15-1/4 (387)	10 (250)	785 (356)
3-HYDRO-IX-2412***	2450 (556)	5.80 (0.40)	69-5/8 (1768) ²	39-3/4 (1010)	31-1/4 (794)	13-1/4 (337)	11-1/2 (292)	15-1/4 (387)	12 (300)	810 (368)
4-HYDRO-I-1812	2700 (613)	3.50 (0.24)	69-3/4 (1772) ³	30-1/4 (768)	35-1/4 (895)	15-1/16 (382)	11 (279)	19-3/8 (492)	12 (300)	1520 (690)
4-HYDRO-I-2412	3200 (727)	1.20 (0.08)	76-3/4 (1949) ³	37-1/4 (946)	35-1/4 (895)	15-1/16 (382)	11 (279)	19-3/8 (492)	12 (300)	1775 (805)
4-HYDRO-I-2416	4400 (999)	2.20 (0.15)	76-3/4 (1949) ³	37-1/4 (946)	43-1/4 (1099)	15-1/16 (382)	11 (279)	19-3/8 (492)	16 (400)	1895 (860)
4-HYDRO-I-2418	5500 (1249)	3.40 (0.23)	76-3/4 (1949) ³	37-1/4 (946)	47-1/4 (1200)	15-1/16 (382)	11 (279)	19-3/8 (492)	18 (450)	2095 (950)
4-HYDRO-I-3220	6860 (1558)	4.20 (0.29)	83-3/8 (2118) ³	43-7/8 (1114)	51-1/4 (1302)	15-1/16 (382)	11 (279)	19-3/8 (492)	20 (500)	2610 (1184)

Notes: * 0-2% solids. ** Available with Scrapers. *** Easy to Remove Cartridges. **** Weight includes grinder & motor only.

• In-Line unit typically installed prior to suction side of pump. • Consult factory for final analysis of application.

1. Drive dimensions are a maximum based on a unit with a 3 HP (2.2 kW) drive. | 2. Drive dimensions are a maximum based on a unit with a 5 HP (3.7 kW) drive.

3. Drive dimensions are a maximum based on a unit with a 10 HP (7.5 kW) drive.



IX = Easy to Remove Cartridges



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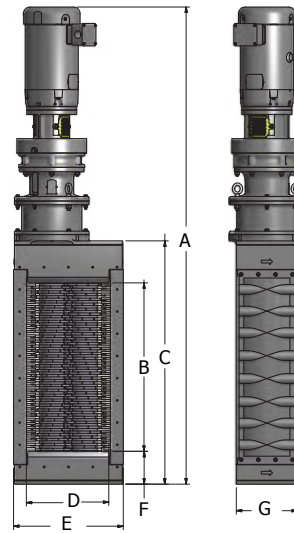
IX = Easy to Remove Cartridges

Open Channel Models

SEALS: MECHANICAL



1-HYDRO-C | 3-HYDRO-C | 4-HYDRO-C



HYDRO-C - Open Channel Configuration

OPEN CHANNEL Model	Flow Rate gpm (m ³ /hr)*	Head Drop inches (mm)	Standard Dimensions inches (mm)							Approximate Net Weight lbs (kg)**
			A	B	C	D	E	F	G	
1-HYDRO-C-0800	180 (41.4)	5-3/4 (146)	44-1/4 (1124) ¹	7-1/4 (185)	18-3/4 (474)	8-3/4 (220)	12 (305)	4-1/2 (114)	8-1/4 (210)	338 (153)
3-HYDRO-C-0800	370 (84)	7 (178)	49-3/8 (1254) ²	8 (203)	19-1/2 (495)	8-1/2 (216)	11-3/4 (298)	3-3/8 (86)	7 (178)	370 (168)
3-HYDRO-C-1200	620 (141)	11-1/2 (290)	53-1/2 (1359) ²	12 (305)	23.5/8 (600)	8-1/2 (216)	11-3/4 (298)	3-3/8 (86)	7 (178)	410 (186)
3-HYDRO-C-1800	980 (223)	16 (405)	59-3/8 (1508) ²	18 (457)	29-1/2 (746)	8-1/2 (216)	11-3/4 (298)	3-3/8 (86)	7 (178)	465 (211)
3-HYDRO-C-2400	1370 (311)	16 (405)	65-1/8 (1654) ²	24 (609)	35-1/4 (895)	8-1/2 (216)	11-3/4 (298)	3-3/8 (86)	7 (178)	520 (236)
3-HYDRO-C-3200	2100 (447)	17-1/2 (445)	72-7/8 (1851) ²	32 (813)	43 (1092)	8-1/2 (216)	11-3/4 (298)	3-3/8 (86)	7 (178)	580 (263)
3-HYDRO-C-4000	3020 (686)	19-1/2 (495)	80-7/8 (2054) ²	40 (1016)	51 (1295)	8-1/2 (216)	11-3/4 (298)	3-3/8 (86)	7 (178)	650 (295)
3-HYDRO-C-5000	4310 (979)	23-1/2 (595)	90-7/8 (2308) ²	50 (1270)	61 (1549)	8-1/2 (216)	11-3/4 (298)	3-3/8 (86)	7 (178)	740 (336)
3-HYDRO-C-6000	5620 (1277)	30 (760)	101-1/4 (2572) ²	60 (1524)	71-3/8 (1813)	8-1/2 (216)	11-3/4 (298)	3-3/8 (86)	7 (178)	830 (377)
4-HYDRO-C-1800	915 (207)	8 (203)	69-3/4 (1772) ³	18 (457)	30-1/4 (768)	14-5/8 (371)	19-3/4 (502)	4-1/2 (114)	11 (279)	1453 (659)
4-HYDRO-C-2400	1440 (327)	16 (406)	76-3/4 (1949) ³	24 (610)	37-1/4 (946)	14-5/8 (371)	19-3/4 (502)	4-1/2 (114)	11 (279)	1643 (746)
4-HYDRO-C-3200	2100 (477)	18 (457)	83-3/8 (2118) ³	32 (813)	43-7/8 (1114)	14-5/8 (371)	19-3/4 (502)	4-1/2 (114)	11 (279)	1838 (834)

Notes: * Flow based on optimum conditions. ** Weight includes grinder & motor only.

• Consult factory for final analysis of application.

1. Drive dimensions are a maximum based on a unit with a 3 HP (2.2 kW) drive. | 2. Drive dimensions are a maximum based on a unit with a 5 HP (3.7 kW) drive.

3. Drive dimensions are a maximum based on a unit with a 10 HP (7.5 kW) drive.



A 3-HYDRO-C Sewage Shredder with Immersible Motor at a Veterinary Clinic



Wet Application 3-HYDRO-C



Cutters and Patented Side Rails

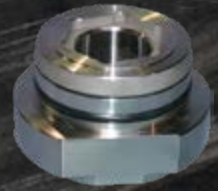
Seal Options

Mechanical Seal Cartridge

Provides liquid protection of the shaft bearings for up to 90PSI (6 bar). No lubrication or flush water is required. The seal is used with the Hydro series, pressurized pipe line or channel applications.

Flush Port Seal

Provides the greatest protection of the shaft bearings when aggressive media is involved in the process. Flush water is provided at the seal faces to wash away particles and destructive media increasing intervals between maintenance. This seal can be used in pressurized pipe line applications.



Motor Options

Motors

- TEFC: Totally enclosed fan cooled electric.
- XPFC: Explosion proof fan cooled electric.
- XPNV: Exclusive electric immersible.
- Hydraulic Drives available in: 2, 3, 5, 10 HP (1.5, 2.2, 3.7, 7.5 kW).

Hydraulic Power Packs

- Available in 5, 10, 15 HP (3.7, 7.5, 11 kW)
- Or, plug into an on-board hydraulic system using JWCE's control valve.



Immersible Motors

Optional Hydraulic Motors with or without a hydraulic power pack.

Standard Electric Motors

Cutters

- 3, 7, 11, 13, and 23 tooth options.
- * 17-Tooth Serrated Wipes Ready™ Cutter. (Only available on 1, 3-Hydro- "IX" & "C" models)
- Optional stainless steel cutters.

Custom Wall Frames

- Stainless steel guide frames attach to pump station to make installation easier.
- Frame is customized to fit each site and includes: guide rails, shredder support base, overflow bar racks and more.

Custom Channel Frames

- Adapt grinders to fit any channel.
- Guide rails for easy installation and maintenance.
- Stainless Steel construction.

Smart Controllers

- Load sensing control system automatically reverse to clear jams.
- Standard: NEMA-4X FRP enclosure with 3-position switch and status indicators.
- Optional: NEMA 4X stainless steel or NEMA 7 enclosures.
- Customized control configurations for any installation.
- UL and ULc registered.

Scrapers

- Integrated steel scrapers increase throughput and help cutters clean-out faster. (Only available on 3, 4-Hydro- "I" or "C" models)

Extended Motor Shaft

- Places motor above highest water level. Available in 1' (305 mm) increments. Maximum: 15' (4570 mm).

Monster Industrial Manhole (MIM)

- Pre-fabricated fiberglass reinforced manhole with grinder.
- Custom depth.
- Hinged cover or H-20 traffic rated top.



7-Tooth



11-Tooth



13-Tooth



17-Tooth *



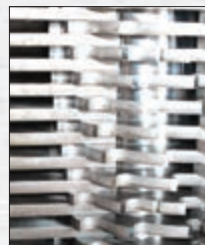
Custom Wall Frames



Custom Channel Frame



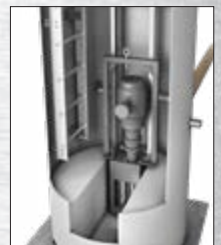
Model PC2200 Standard Enclosure



Scrapers (optional)



Extended Motor Shaft



Pre-fab Monster Industrial Manhole (MIM)



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