

HYDRO SERIES

In-line/Open-channel Grinders

Overview

JWC Environmental's HYDRO series features 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/Oils/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 include 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 and chopper pumps

Compact and efficient design

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

Automated monitoring and controls

- Load-sensing and reversal mechanism to optimize 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 mean shorter pump run cycles, lower maintenance costs and lower electrical costs



In-line Models

Seals: Mechanical or Flush Port



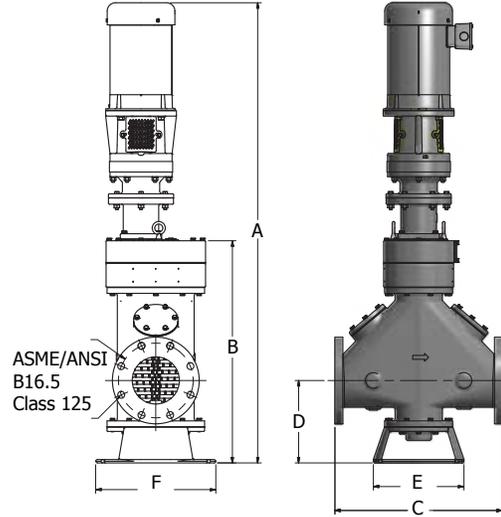
1-HYDRO-I



3-HYDRO-IX



4-HYDRO-I



HYDRO-I and -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)	52-3/8 (1330) ²	20-1/2 (521)	19-1/8 (486)	8-1/4 (210)	7 (178)	12 (305)	4 (100)	380 (172)
3-HYDRO-I-1206**	700 (159)	1.23 (0.08)	56-3/4 (1441) ²	24-7/8 (632)	21-1/8 (537)	9-1/4 (235)	7 (178)	12 (305)	6 (150)	445 (202)
3-HYDRO-I-1208**	1100 (250)	3.00 (0.21)	56-3/4 (1441) ²	24-7/8 (632)	23-1/4 (591)	10-1/4 (260)	7 (178)	12 (305)	8 (200)	470 (213)
3-HYDRO-I-1810**	1700 (386)	5.13 (0.35)	62-3/4 (1594) ²	30-7/8 (784)	27-1/4 (692)	11-1/8 (283)	7 (178)	12 (305)	10 (250)	575 (261)
3-HYDRO-I-2412**	2450 (556)	5.80 (0.40)	68-1/2 (1740) ²	36-5/8 (930)	31-1/4 (794)	13-1/8 (333)	7 (178)	12 (305)	12 (300)	650 (295)
3-HYDRO-IX-1204***	450 (102)	0.52 (0.04)	60-1/8 (1527) ²	28-1/4 (718)	19-1/4 (489)	9-3/8 (238)	11-5/16 (287)	15-1/8 (384)	4 (100)	550 (250)
3-HYDRO-IX-1206***	700 (159)	1.23 (0.08)	60-1/8 (1527) ²	28-1/4 (718)	21-1/4 (540)	10-3/8 (264)	11-5/16 (287)	15-1/8 (384)	6 (150)	560 (254)
3-HYDRO-IX-1208***	1100 (250)	3.00 (0.21)	60-1/8 (1527) ²	28-1/4 (718)	23-1/4 (591)	11-1/4 (286)	11-5/16 (287)	15-1/8 (384)	8 (200)	570 (259)
3-HYDRO-IX-2410***	1700 (386)	2.97 (0.20)	71-5/8 (1819) ²	39-3/4 (1010)	27-1/4 (692)	12-5/16 (313)	11-5/16 (287)	15-1/8 (384)	10 (250)	785 (356)
3-HYDRO-IX-2412***	2450 (556)	5.80 (0.40)	71-5/8 (1819) ²	39-3/4 (1010)	31-1/4 (794)	13-1/4 (337)	11-5/16 (287)	15-1/8 (384)	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)	10-3/4 (273)	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)	10-3/4 (273)	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)	12-5/8 (321)	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)	13-5/8 (346)	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 (381)	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 upstream of the 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.



3-HYDRO-IX = Easy-to-remove Cartridges



4-HYDRO-I



3-HYDRO-IX

Open-channel Models

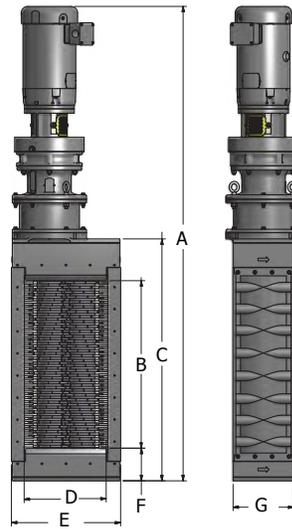
Seals: Mechanical



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 siderails

Seal Options

Mechanical seal cartridge

Provides liquid protection of the shaft bearings up to 90 psi (6 bar). No lubrication or flush water is required. The seal is used with the HYDRO series, pressurized pipeline 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 pipeline 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 and 10 hp (1.5, 2.2, 3.7 and 7.5 kW)



Hydraulic power packs

- Available in 5, 10 and 15 hp (3.7, 7.5 and 11 kW)
- Or plug into an onboard hydraulic system using JWCE's control valve

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 reverses 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" & 4-HYDRO-"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)

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

Immersible Motors

Optional Hydraulic Motors With or Without a Hydraulic Power Pack

Standard Electric Motors



7-tooth



11-tooth



13-tooth



17-tooth *



Custom Wall Frames



Custom Channel Frame



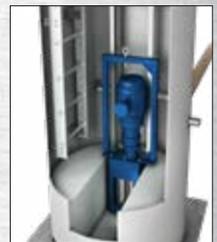
Model PC2200 Standard Enclosure



Scrapers (optional)



Extended Motor Shaft



Pre-fab Monster Industrial Manhole (MIM)



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