ROPER PUMPS®

THE LEADING FORCE behind liquids™ since 1857

DuraFlow™

Corrosion-Resistant Flow Dividers

Duraflow™ Corrosion-Resistant Flow Dividers guard against the most common causes of failure

Why do flow dividers fail?

✓ Gradual Failure Mechanisms

- Normal wear
- Ingestion of fine fuel-borne contaminants, not removed by filtration

Examples:

- Extremely fine abrasives
- Chemical fuel impurities
- Microbial contaminants
- Water

✓ Instantaneous Failure Mechanisms

- Ingestion of larger, fuel-borne particulate matter which has breached the filtration system

Examples:

- Weld slag in piping
- Metal particles generated through failure of other components

What is the cost of a failed flow divider?

✓ Lost Generation Time:

If fuel doesn't flow, turbine trips

✓ Repair Costs:

Labor to remove, rebuild, and re-install the failed flow divider

✓ Transportation:

Shipping costs to an authorized repair center

✓ Fines:

Is liquid fuel availability mandated?

Corrosion caused by water in fuel

Gears seized by buildup of rust products

Rusted cast iron faceplate from a circular flow divider

Cast iron material torn away from case bore and "welded" to the tips of the gear teeth (adhesive wear)

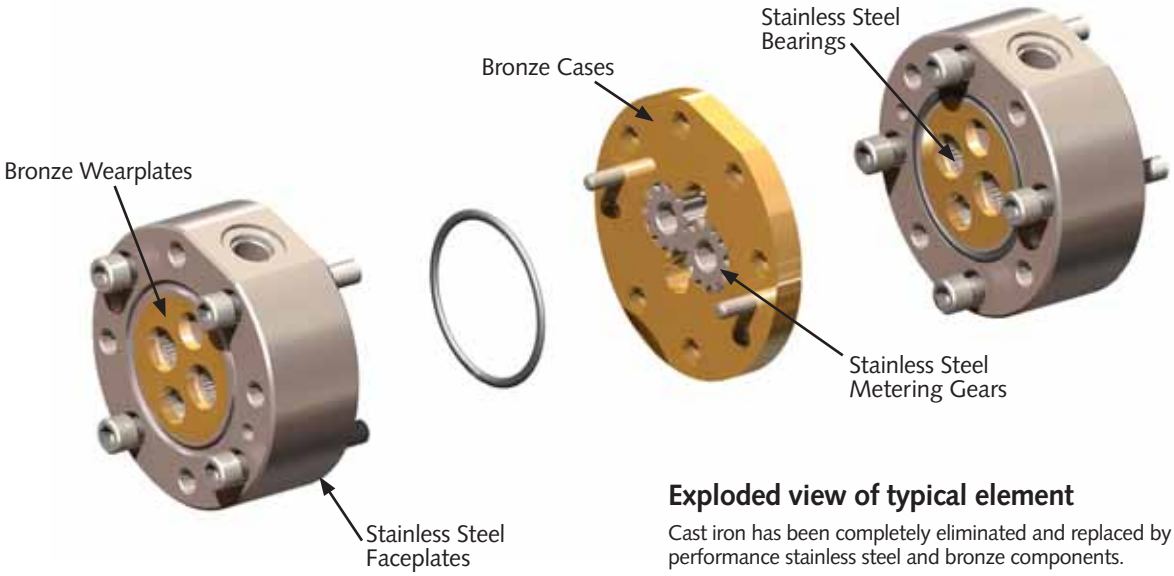
Galling damage to a cast iron faceplate

DuraFlow™

Corrosion-Resistant Flow Dividers

ROPER PUMPS®

Engineered Solutions for Power Generation Applications



Exploded view of typical element

Cast iron has been completely eliminated and replaced by higher performance stainless steel and bronze components.

Roper Pump Company has re-engineered the standard cast iron flow divider to combat the problems arising from corrosion, low lubricity fuels, and fuel-borne particulate damage. DuraFlow™ completely eliminates cast iron. Linear models contain flow element faceplates made from stainless steel, and incorporate an ingenious system of replaceable bronze wearplates on both sides of the pumping gears. Gear cases are also made from a special bronze. These high performance materials are virtually unaffected by water in the fuel, so flow divider corrosion should no longer be a major issue. They are also highly durable and wear resistant to help extend service life.

These materials are less susceptible to failure should they ingest small, fuel-borne particulate contaminants. The relatively low surface hardness of bronze can allow small hard particles in the fuel to imbed, or plough through a running flow element, without precipitating a complete flow divider seizure. Bronze is also an excellent bearing material. Bronze wearplates have the inherent ability to support stainless steel flow element gears running against them without galling.

NEW Biodiesel Flow Divider

Custom DuraFlow™ flow divider uses materials optimized for use in biodiesel applications.

Hydraulic Institute

ISO9001:2000 Certified

CE

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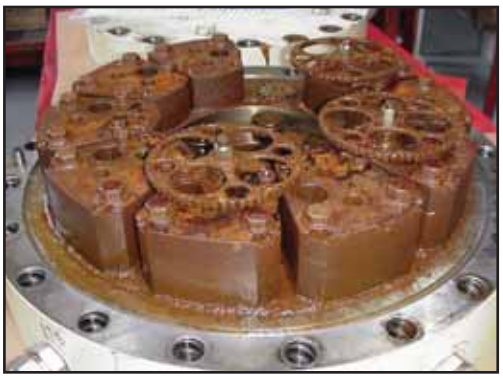
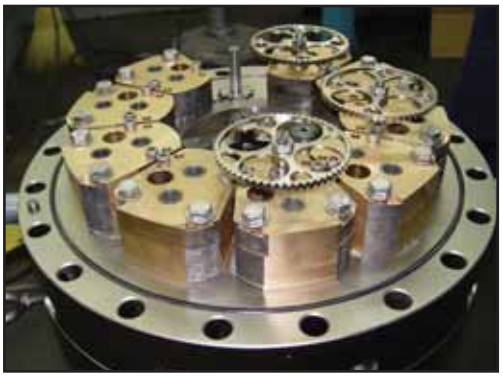
DuraFlow™ Corrosion-Resist

Why you should upgrade to a DuraFlow™ flow divider:

- Will not rust
- Resists seizure induced by leaking check valves
- Liquid fuel startups and transfers without problems
- Well suited for low-viscosity, low-lubricity liquid fuels
- Tolerant of small fuel-borne particulates
- DuraFlow™ flow divider models available to replace any traditional cast iron flow divider



Entrained water in distillate fuels is a leading cause of corrosion in traditional cast iron flow dividers.



Stainless steel and bronze DuraFlow™ flow dividers address the problems of both corrosion and fuel-borne particulate contamination.

Frame 9E
Circular Flow Divider

W501G Stage
Linear Flow Divider

W501G Pilot
Linear Flow Divider

tant Flow Dividers

Gas Turbine Applications

Frame 3	W251	M701D
Frame 5	W501D5	M501F
Frame 6B, 6FA	W501F	M701F
Frame 7B, 7EA, 7FA	W501G	TG50D5
Frame 9E, 9F		TG20

Key Features

- Stainless steel housings
- Bronze cases
- Replaceable wearplates (bronze or other)
- Stainless steel internals (gears, bearings, shafts)
- All wetted surfaces are protected from corrosion
- 6 to 20 precision machined flow elements for equally metered fuel delivery
- With or without speed sensors
- With or without starter motor
- Custom designed to operate in site-specific conditions

DURAFLOW™ CORROSION-RESISTANT FLOW DIVIDERS

Application	Figure	Flow Rate GPM*(l/min)	Number of Elements	Fuel Type	Materials	Design
Frame 3	20452	100 (379)	6	Naphtha, Distillate	SST, Bronze	Linear
Frame 3	20468	20 (76)	6	Naphtha, Distillate	SST, Bronze	Linear
Frame 5, 6B	20491	34 - 70 (129-265)	10	Distillate	SST, Bronze	Linear
Frame 6F	20437	120 (455)	6	Distillate	SST, Bronze	Linear
Frame 7B	20402	120 (455)	10	Distillate	SST, Bronze	Linear
Frame 7EA	20495	160 (606)	10	Distillate	SST, Bronze	Linear
Frame 7FA	20403	270 (1022)	14	Distillate	SST, Bronze	Linear
Frame 9E	20409	170 (644)	14	Distillate	SST, Bronze	Circular
Frame 9E	20429	210 (795)	14	Distillate	SST, Bronze	Circular
Frame 9F	20408	355 (1344)	18	Distillate	SST, Bronze	Linear
Frame 9F	20433	355 (1344)	18	Distillate	SST, Bronze	Circular
251B12	20404	100 (379)	8	Distillate	SST, Bronze	Linear
501D5	20427	180 (682)	14	Distillate	SST, Bronze	Linear
501F, 501G	20400	140 (530)	16	Distillate	SST, Bronze	Linear
501F, 501G	20401	40 (152)	16	Distillate	SST, Bronze	Linear
M701DA	20406	240 (909)	18	Distillate	SST, Bronze	Linear

*GPM = U.S. Gallons per Minute

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Roper Pump Company is a global supplier of high quality positive displacement pumps, designed to handle a broad range of industrial applications. In addition to helical gear pumps, progressing cavity pumps and triple screw pumps, we design and develop numerous custom pumps for customers with unique and demanding applications.

From a small pump company founded in 1857, Roper Pump Company has grown into a technological leader. With a large installed base, we have both the knowledge and experience to help you solve your most challenging pumping problems…and our strong global distribution network ensures that your needs are met on time, every time.

Our Markets

INDUSTRIAL
Roper Pump Company's rugged and dependable range of positive displacement pumps provides versatile pumping solutions for even the most challenging industrial applications.

TRANSPORT
With over a century of experience in liquid cargo transfer, Roper Pump Company has always been trusted to load and unload your tankers quickly and safely.

POWER GENERATION
For reliable operation of engines, compressors and turbines, thousands of customers depend on Roper Pump Company fuel pumps, lube pumps and liquid fuel flow dividers.

OIL & GAS
Roper Pump Company has numerous pumping solutions from the well to the refinery. Our industry leading DragonSlayer® Power Sections allow mud motors to run longer at unprecedented temperatures and depths.

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