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DECK

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Index Section B

DECK

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Rolling Back Government: Lessons from New Zealand

Maurice P. McTigue

(Continued from Index A page A-8)

But we went even further: We made it possible for privately owned schools to be funded in exactly the same way as publicly owned schools, giving parents the ability to spend their education dollars wherever they chose. Again, everybody predicted that there would be a major exodus of students from the public to the private schools, because the private schools showed an academic advantage of 14 to 15 percent. It didn't happen, however, because the differential between schools disappeared in about 18-24 months. Why? Because all of a sudden teachers realized that if they lost their students, they would lose their funding; and if they lost their funding, they would lose their jobs. Eighty-five percent of our students went to public schools at the beginning of this process. That fell to only about 84 percent over the first year or so of our reforms. But three years later, 87 percent of the students were going to public schools. More importantly, we moved from being about 14 or 15 percent below our international peers to being about 14 or 15 percent above our international peers in terms of educational attainment.

Now consider taxation and competitiveness: What many in the public sector today fail to recognize is that the challenge of competitiveness is worldwide. Capital and labor can move so freely and rapidly from place to place that the only way to stop business from leaving is to make certain that your business climate is better than anybody else's. Along these lines, there was a very interesting circumstance in Ireland just two years ago. The European Union, led by France, was highly critical of Irish tax policy—particularly on corporations—because the Irish had reduced their tax on corporations from 48 percent to 12 percent and business was flooding into Ireland. The European Union wanted to impose a penalty on Ireland in the form of a 17 percent corporate tax hike to bring them into line with other European countries. Needless to say, the Irish didn't buy that. The European community responded by saying that what the Irish were doing was unfair and uncompetitive. The Irish Minister of Finance agreed: He pointed out that Ireland was charging corporations 12 percent, while charging its citizens only 10 percent. So Ireland reduced the tax rate to 10 percent for corporations as well. There's another one the French lost!

When we in New Zealand looked at our revenue gathering process, we found the system extremely complicated in a way that distorted business as well as private decisions. So we asked ourselves some questions: Was our tax system concerned with collecting revenue? Was it concerned with collecting revenue and also delivering social services? Or was it concerned with collecting revenue, delivering social services and changing behavior, all three? We decided that the social services and behavioral components didn't have any place in a rational system of taxation. So we resolved that we would have only two mechanisms for gathering revenue—a tax on income and a tax on consumption—and that we would simplify those mechanisms and lower the rates as much as we possibly could. We lowered the high income tax rate from 66 to 33 percent, and set that flat rate for high-income earners. In addition, we brought the low end down from 38 to 19 percent, which became the flat rate for low-income earners. We then set a consumption tax rate of 10 percent and eliminated all other taxes—capital gains taxes, property taxes, etc. We carefully designed this system to produce exactly the same revenue as we were getting before and presented it to the public as a zero sum game. But what actually happened was that we received 20 percent more revenue than before. Why? We hadn't allowed for the increase in voluntary compliance. If tax rates are low, taxpayers won't employ high priced lawyers and accountants to find loopholes. Indeed, every country that I've looked at in the world that has dramatically simplified and lowered its tax rates has ended up with more revenue, not less.

What about regulations? The regulatory power is customarily delegated to non-elected officials who then constrain the people's liberties with little or no accountability. These regulations are extremely difficult to eliminate once they are in place. But we found a way: We simply rewrote the statutes on which they were based. For instance, we rewrote the environmental laws, transforming them into the Resource Management Act—reducing a law that was 25 inches thick to 348 pages. We rewrote the tax code, all of the farm acts, and the occupational safety and health acts. To do this,

we brought our brightest brains together and told them to pretend that there was no pre-existing law and that they should create for us the best possible environment for industry to thrive. We then marketed it in terms of what it would save in taxes. These new laws, in effect, repealed the old, which meant that all existing regulations died—the whole lot, every single one.

Thinking Differently About Government

What I have been discussing is really just a new way of thinking about government. Let me tell you how we solved our deer problem: Our country had no large indigenous animals until the English imported deer for hunting. These deer proceeded to escape into the wild and become obnoxious pests. We then spent 120 years trying to eliminate them, until one day someone suggested that we just let people farm them. So we told the farming community that they could catch and farm the deer, as long as they would keep them inside eight-foot high fences. And we haven't spent a dollar on deer eradication from that day onwards. Not one. And New Zealand now supplies 40 percent of the world market in venison. By applying simple common sense, we turned a liability into an asset.

Let me share with you one last story: The Department of Transportation came to us one day and said they needed to increase the fees for driver's licenses. When we asked why, they said that the cost of relicensing wasn't being fully recovered at the current fee levels. Then we asked why we should be doing this sort of thing at all. The transportation people clearly thought that was a very stupid question: Everybody needs a driver's license, they said. I then pointed out that I received mine when I was fifteen and asked them: "What is it about relicensing that in any way tests driver competency?" We gave them ten days to think this over. At one point they suggested to us that the police need driver's licenses for identification purposes. We responded that this was the purpose of an identity card, not a driver's license. Finally they admitted that they could think of no good reason for what they were doing—so we abolished the whole process! Now a driver's license is good until a person is 74 years old, after which he must get an annual medical test to ensure he is still competent to drive. So not only did we not need new fees, we abolished a whole department. That's what I mean by thinking differently.

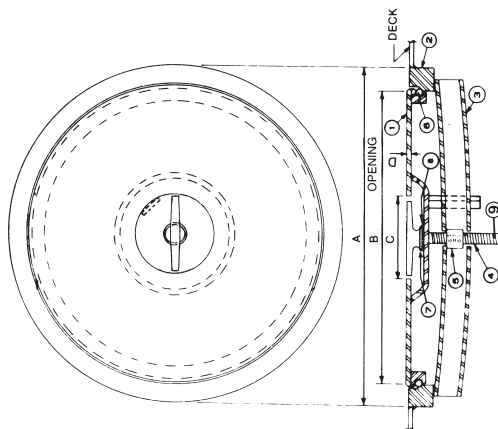
There are some great things happening

along these lines in the United States today. You might not know it, but back in 1993 Congress passed a law called the Government Performance and Results Act. This law orders government departments to identify in a strategic plan what it is that they intend to achieve, and to report each year what they actually did achieve in terms of public benefits. Following on this, two years ago President Bush brought to the table something called the President's Management Agenda, which sifts through the information in these reports and decides how to respond. These mechanisms are promising if they are used properly. Consider this: There are currently 178 federal programs designed to help people get back to work. They cost \$8.4 billion, and 2.4 million people are employed as a result of them. But if we took the most effective three programs out of those 178 and put the \$8.4 billion into them alone, the result would likely be that 14.7 million people would find jobs. The status quo costs America over 11 million jobs. The kind of new thinking I am talking about would build into the system a consequence for the administrator who is responsible for this failure of sound stewardship of taxpayer dollars. It is in this direction that the government needs to move.



NASHVILLE BRIDGE COMPANY

probably from Louisiana if...
You've ever wore shorts at Christmas time.

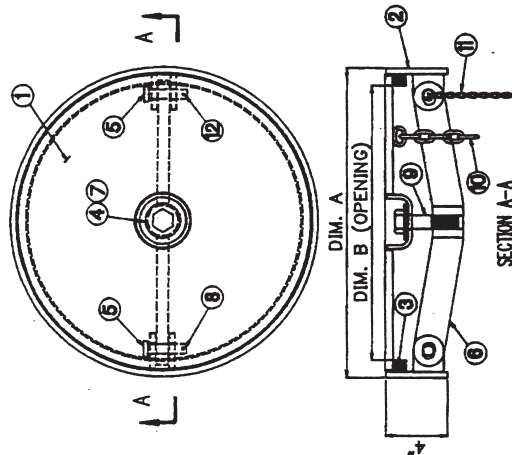


PIECE NO.	DESCRIPTION	PART NUMBER	MATERIAL
1	COVER ASSEMBLY	DF-430-180	SEE NOTE 1 BELOW
2	DECK RING	20389	MILD STEEL
3	STRONGBACK	6750	GALVANIZED STEEL
4	TEE HANDLE	15334	STAINLESS STEEL
5	NUT	13870	BRASS
6	GASKET	16993	NEOPRENE
7	WASHER	507	BRASS
8	WASHER	17256	NEOPRENE
9	PIN	604	BRASS
		6556	NEOPRENE
		21636	STAINLESS STEEL

MODEL NO.	PART NO.	SIZE	A	B	C	D	WT. (lbs.)
DF-430-180	6297	18	20 3/4	18	5	3/8	70
	6335 (GALVANIZED)						74
DF-430-24	6270	24	26 3/4	24	5	3/8	116
	6289 (GALVANIZED)						120

FLUSH WATERTIGHT HATCH

NOTE 1: INCLUDES ALL PIECES EXCEPT PC NO. 2 - DECK RING
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PIECE NO.	PART NO.	DF-540-1775	DF-540-1875	DF-540-1975	DF-540-2175	MATERIAL
1	COVER ASSEMBLY	92673	92916	92924	92932	MILD STEEL
2	COAMING ASSEMBLY	92681	92940	92959	92967	MILD STEEL
3	HATCH GASKET **	92703	92975	92983	92991	NEOPRENE *
4	BOLT GASKET	92711	92711	92711	92711	NEOPRENE *
5	CLEVIS PIN	92770	92770	92770	92770	GALVANIZED STEEL
6	STRONG BACK	92762	93033	93041	93068	MILD STEEL
7	WASHER	92908	92908	92908	92908	GALVANIZED STEEL
8	COTTER	92789	92789	92789	92789	GALVANIZED STEEL
9	BOLT	92746	92746	92746	92746	STAINLESS STEEL
10	CHAIN (FOR HATCH COVER)	92797	92797	92797	92797	GALVANIZED STEEL
11	CHAIN (FOR CLEVIS PIN)	92800	92800	92800	92800	GALVANIZED STEEL
12	HAR PIN COTTER W/ MK NO. 11	92800	92800	92800	92800	GALVANIZED STEEL

MODEL NO.	PART NO.	SIZE	A	B	WEIGHT (lbs.)
DF-540-1775	89915	17 1/2"	20"	17 1/2"	86
DF-540-1875	93009	18 1/2"	21"	18 1/2"	92
DF-540-1975	93017	19 1/2"	22"	19 1/2"	99
DF-540-2175	93025	21 1/2"	24"	21 1/2"	113

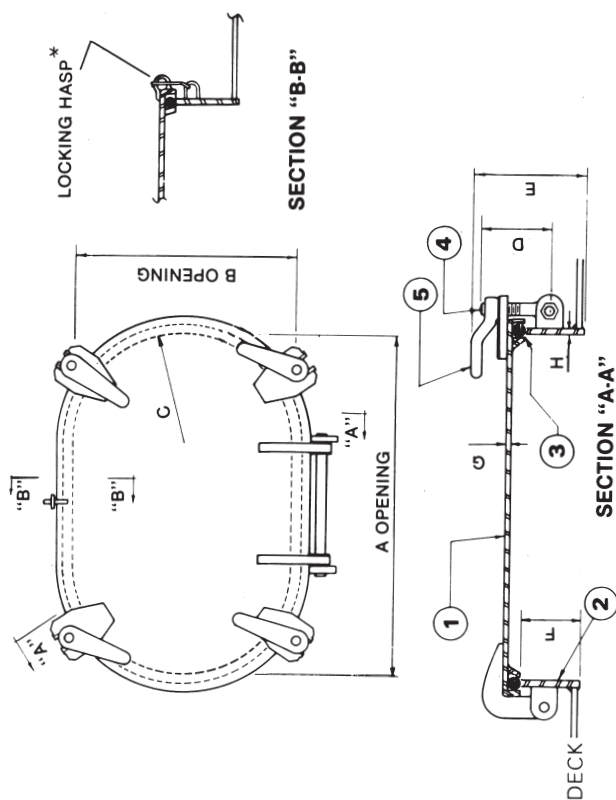
SINGLE BOLT HATCH

**Gasket Included w/coaming assembly. *Other gasket material available.

probably from Louisiana if...
You pronounce Lafayette as "Laffy-ette" not "La-fy-ette"



NASHVILLE BRIDGE COMPANY



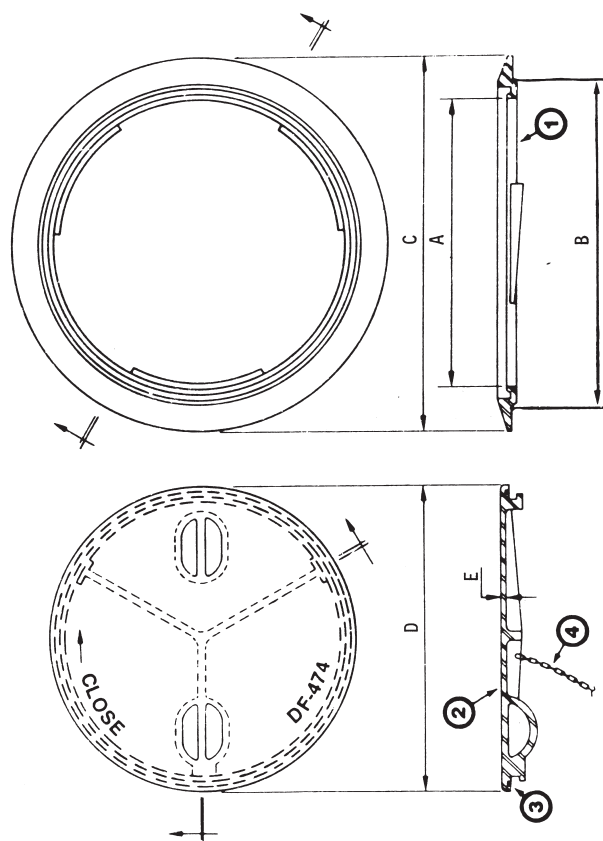
PIECE NO.	DESCRIPTION	PART NUMBER	MATERIAL
1	COVER ASSEMBLY**	DF-174-5	DF-464-5
2	COAMING	77887	78484
3	GASKET	74098	19550
4	TUMBLE BOLT	74497	78530
5	DOG HANDLE	10774	10774
	FLAME SCREEN*	74837	74837
		17051	19445

MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	WT. (lbs.)
DF-174-5	72451	15 x 23	23	15	7 1/2	5 1/4	8 1/2	5	5/16	3/8	96
DF-464-5	78514	18 x 24	24 1/4	18 1/4	9 1/4	5 1/4	8 1/2	5	5/16	3/8	106

RAISED WATERTIGHT HATCH

*OPTIONAL EXTRA **Gasket inc. w/ Cover Assembly 1 Other gasket material available
Other optional extras include galvanized finish, a flame screen and a variety of coaming heights

The specifications and details described by drawings or text in this literature are subject to change without notice.



PIECE NO.	DESCRIPTION	PART NO.	MATERIAL
1	DECK RING	82325	CAST STEEL
2	COVER	82333	CAST STEEL
3	GASKET	82341	NEOPRENE
4	CHAIN	82368	STEEL

MODEL NO.	PART NO.	SIZE	A	B	C	D	E	WT. (lbs.)
DF-474	82317	18	18 3/4	21 1/4	24 3/4	20	3/8	85

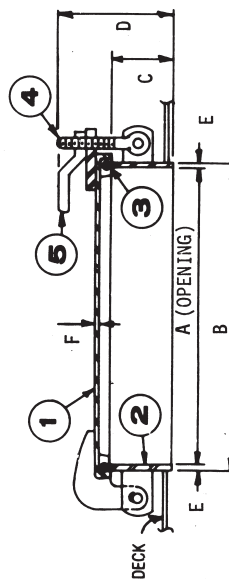
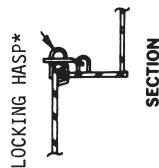
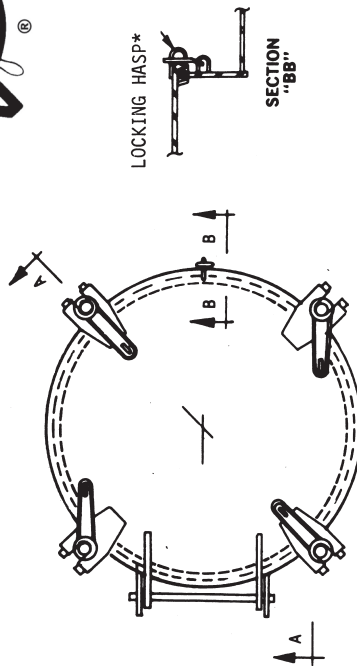
TWIST LOCK HATCH

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Marie called de newspaper.
 Marie called de newspaper
 and tole dem dat her husband
 Boudreaux had died.
 De news paper person said,
 "Oh, aham so sorry to hear
 dat, would you like for me to
 switch you to de obituary sec-
 tion"?
 Marie answered, "No, jus' con-
 nect me wit de boats for sale
 department".



SECTION "A-A"

PIECE NO.	DESCRIPTION	PART NO.	MATERIAL
1	COVER ASSEMBLY**	77895	MILD STEEL
2	COAMING	75027	MILD STEEL
3	GASKET	74497	NEOPRENE†
4	TUMBLE BOLT	10774	BRONZE
5	DOG HANDLE	74837	MALLEABLE IRON

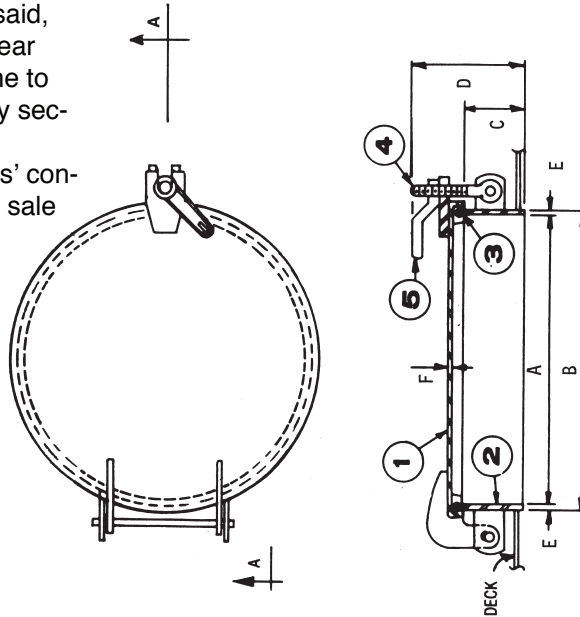
MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	WT. (lbs.)
DF-343-5	74950	19	19	19 3/4	5	8 1/2	3/8	5/16	92

RAISED WATERTIGHT HATCH

*OPTIONAL EXTRA †Other gasket material available **Gasket incl. w/ Cover Assembly.
 Other optional extras include galvanized finish, a flame screen and a variety of coaming heights.

The specifications and details described by drawings or text in this literature are subject to change without notice.

R/01



SECTION "A-A"

PIECE NO.	DESCRIPTION	PART NO.	MATERIAL
1	COVER	75019	MILD STEEL
2	COAMING	75027	MILD STEEL
3	GASKET	74497	NEOPRENE
4	TUMBLE BOLT	10774	BRONZE
5	DOG HANDLE	74837	MALLEABLE IRON

MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	WT. (lbs.)
DF-543-5	21598	19	19	19 3/4	5	8 1/2	3/8	5/16	86

RAISED HATCH - SINGLE DOG

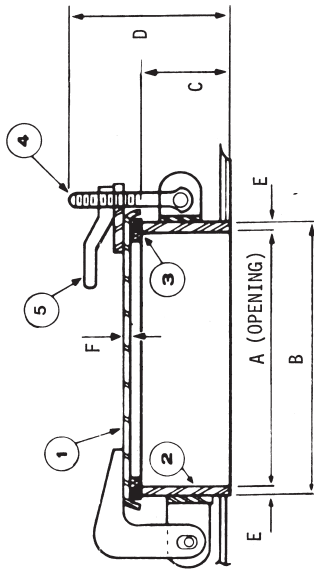
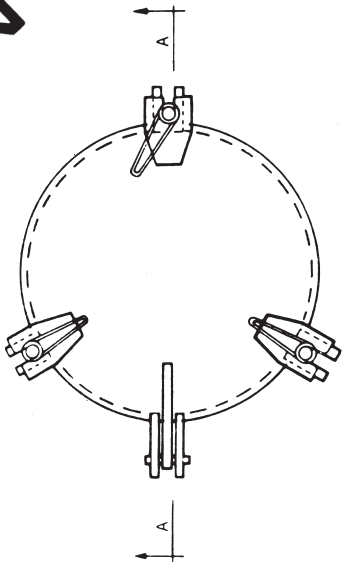
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"Boo" Boudreaux's Report Card

"Boo" Boudreaux come home wit' a really bad report card las' week, an' his daddy was really upset.

When "Boo" got to school on Monday morning. he went up to hees teacher. and an-nounced to her, "Teacher, I tink I better warn you. My Poppa said dat if I don't start getting better grades soon, somebody is gonna get a real bad spanking!"



SECTION "A-A"

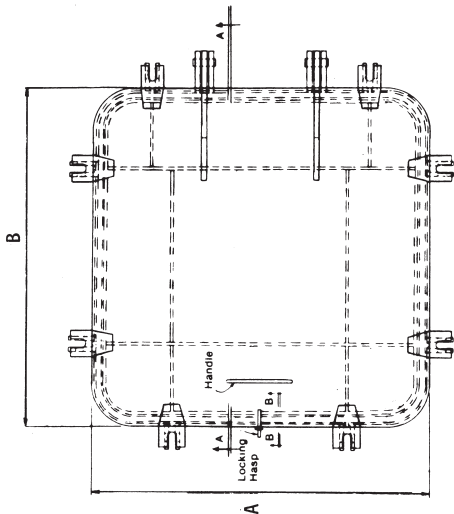
PIECE NO.	DESCRIPTION	PART NO.	MATERIAL
1	COVER ASSEMBLY*	77909	MILD STEEL
2	COAMING	76155	MILD STEEL
3	GASKET	75981	NEOPRENE
4	TUMBLE BOLT	10774	BRONZE
5	DOG HANDLE	74837	MALLEABLE IRON

MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	WT. (lbs.)
DF-456-5	75965	12	12	12 1/4	5	8 1/2	3/8	5/16	56

RAISED WATERTIGHT HATCH

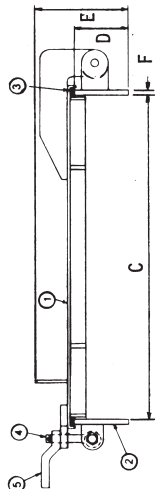
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NASHVILLE BRIDGE COMPANY

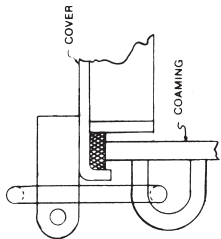


NOTE
Dog Handles not shown
in plan for clarity.

PLAN



SECTION "A-A"



SECTION "B-B"

PIECE NO.	DESCRIPTION	PART NO.	MATERIAL
1	COVER	87742	MILD STEEL
2	COAMING	87742	MILD STEEL
3	GASKET	87742	NEOPRENE
4	TUMBLE BOLT	10774	BRONZE
5	DOG HANDLE	17744	BRASS

MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	WT. (lbs.)
DF-475-5	87742	30 x 30	31 13/16	31 13/16	30	5	8 3/8	7/16	220

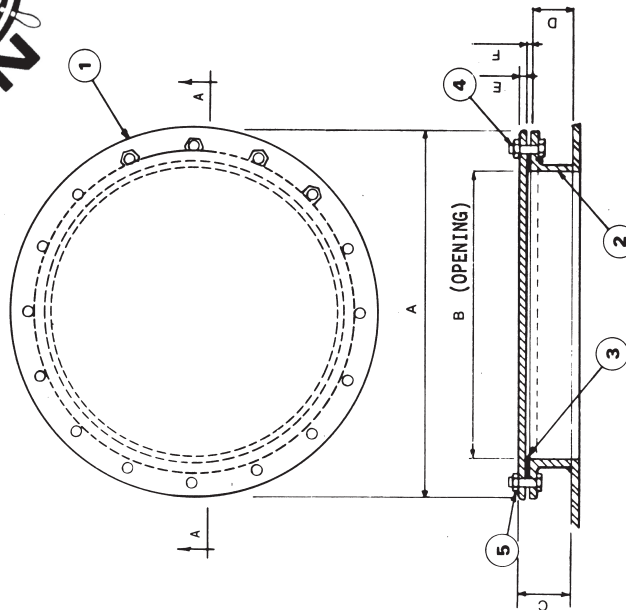
RAISED WATERTIGHT HATCH

The specifications and details described by drawings or text in this literature are subject to change without notice.

probably from Louisiana if...
 You learned to drive a boat before you could drive a car



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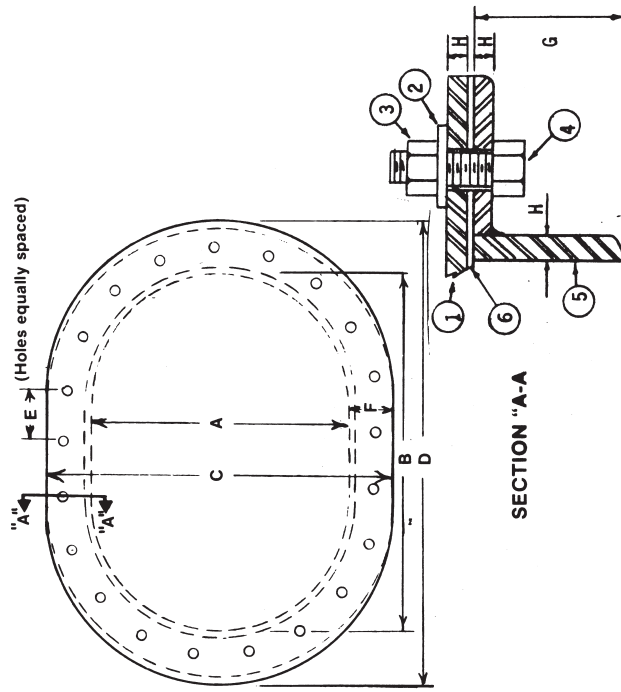
SECTION "A-A"

PIECE NO.	DESCRIPTION	PART NUMBER		MATERIAL
1	HATCH COVER	DF-154-18	DF-154-14	MILD STEEL
2	COAMING	77216	76767	MILD STEEL
3	GASKET	77232	76783	MILD STEEL
4	5/8" BOLT	77224	76775	NEOPRENE
5	5/8" NUT	14613	14613	STEEL
		16179	16179	BRASS

MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	WT. (lbs.)
DF-154-14	15407	14	19	14	3 1/4	2 1/2	3/8	3/8	60
DF-154-18	77240	18	23	18	3 1/4	2 1/2	3/8	3/8	78

CLEAN OUT HATCH

The specifications and details described by drawings or text in this literature are subject to change without notice.



SECTION "A-A"

PIECE NO.	DESCRIPTION	PART NUMBER		MATERIAL
1	COVER PLATE	DF-501	DF-502	STEEL
2	WASHER	21342	21350	BRASS
3	HEX NUT	21237	21237	STAINLESS
4	HEX BOLT	21245	21245	STEEL
5	COAMING	14005	14005	STEEL
6	GASKET	21369	21377	NEOPRENE
		21385	21393	

MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	WT. (lbs.)
DF-501	21091	15 x 23	15	23	20	28 3/4	3 3/8	2 1/2	2 1/2	3/8	85
DF-502	21105	18 x 24	18	24	23	29 3/4	3 1/4	2 1/2	2 1/2	3/8	106

RAISED BOLTED HATCH

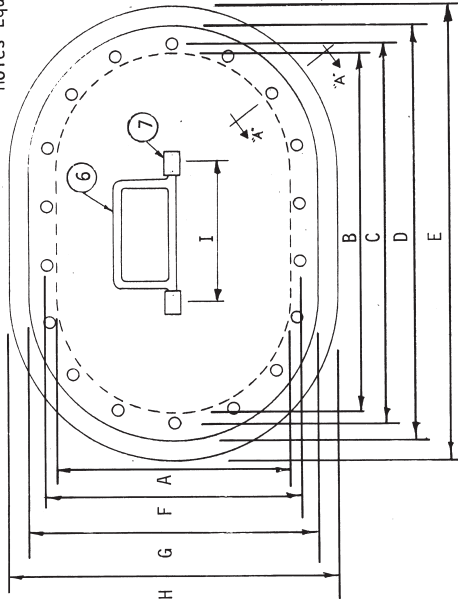
The specifications and details described by drawings or text in this literature are subject to change without notice.



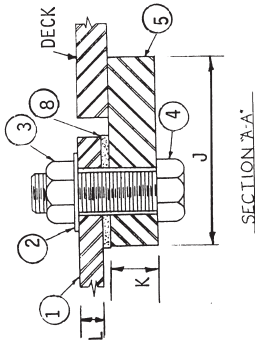
NASHVILLE BRIDGE COMPANY

probably from Louisiana if...
You know the meaning of a "Delcambre Reeboks"
(that would be a pair of all white fishing boots)

Holes Equally Spaced



NOTE:
LAMPWICK GROMMET
FURNISHED BY OTHERS
IF REQUIRED.

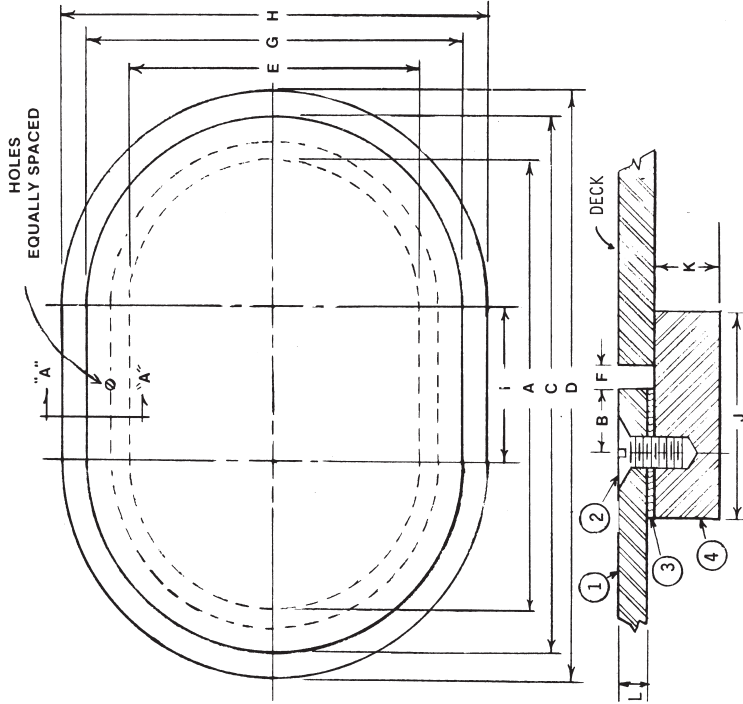


PIECE NO.	DESCRIPTION	PART NUMBER								MATERIAL
		DF-503	DF-504	DF-503	DF-504	DF-503	DF-504	DF-503	DF-504	
1	COVER	21229	21318							MILD STEEL
2	WASHER	21237	21237							BRASS
3	NUT	21245	21245							STAINLESS STEEL
4	BOLT	14613	14613							STEEL
5	DECK RING	21253	21326							MILD STEEL
6	HANDLE	21261	21261							MILD STEEL
7	HANDLE RETAINER	21288	21288							MILD STEEL
8	GASKET	21296	21334							NEOPRENE

MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	WT. (lbs.)
DF-503	21113	15 x 23	15	23	24 1/4	26 1/2	29	16 1/4	18 1/2	21	9	3	3/4	3/8	95
DF-504	21121	18 x 24	18	24	25 1/4	27 1/2	30	19 1/4	21 1/2	24	9	3	3/4	3/8	112

FLUSH BOLTED HATCH

The specifications and details described by drawings or text in this literature are subject to change without notice.



SECTION "A-A"

PIECE NO.	DESCRIPTION	PART NO.	MATERIAL
1	COVER	21180	STEEL
2	SCREW	21199	STAINLESS STEEL
3	GASKET	21202	NEOPRENE
4	DECK RING	21210	STEEL

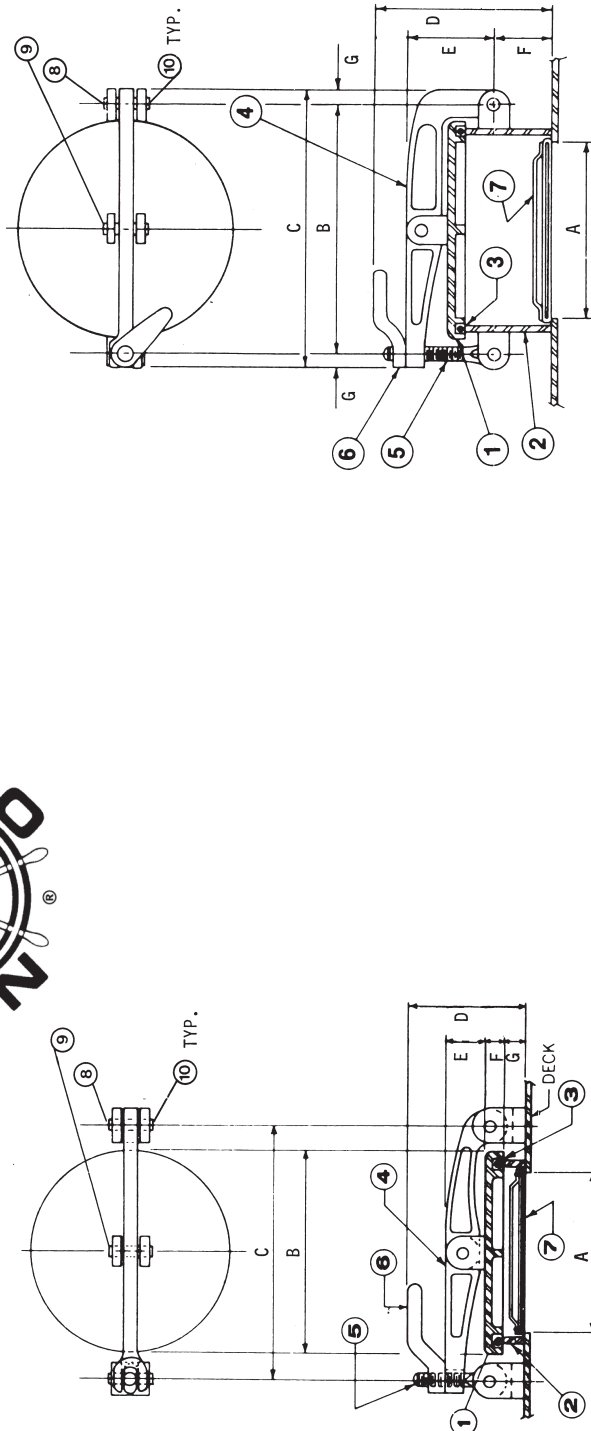
MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	WT. (lbs.)
DF-505	21148	15 x 23	23	13/32	27 3/8	30 1/8	15	3/8	19 3/8	22 1/8	8	3	9/16	1 1/2	160

FLUSH SCREW HATCH

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Boo and Tee see a leettle green creature.
Pierre and Boudreaux were on a weekend hunt when dev witnessed a UFO landing.
As de leettle green creatures descended from de craft Pierre said, "Mais what's dat?"
Boudreaux answered, as he aimed hees gun: "I don't know me, Pierre. But you better go back to de camp and put some rice on."

PIECE NO.	DESCRIPTION	PART NO.	MATERIAL
1	COVER	6637	CAST IRON
2	COAMING	75671	MILD STEEL
3	GASKET	17167	NEOPRENE
4	ARM	6831	MALLEABLE IRON
5	TUMBLE BOLT	10774	BRONZE
6	DOG HANDLE	74837	MALLEABLE IRON
7	FLAME SCREEN	6629	STAINLESS STEEL
8	HEX HEAD BOLT	20842	BRONZE
9	HEX HEAD BOLT	20850	BRONZE
10	ESNA NUT	20869	STAINLESS STEEL

MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	WT. (lbs.)
DF-144	6645	8	7 1/2	9 1/2	12	5 5/16	1 1/8	13/16	7/8	22

ULLAGE HATCH

The specifications and details described by drawings or text in this literature are subject to change without notice.

PIECE NO.	DESCRIPTION	PART NO.	MATERIAL
1	COVER	83062	CAST IRON
2	COAMING	19526	MILD STEEL
3	GASKET	82449	NEOPRENE
4	ARM	19461	MALLEABLE IRON
5	TUMBLE BOLT	10774	BRONZE
6	DOG HANDLE	74837	MALLEABLE IRON
7	FLAME SCREEN	19496	STAINLESS STEEL
8	HEX HEAD BOLT	20842	BRONZE
9	HEX HEAD BOLT	20850	BRONZE
10	ESNA NUT	20869	STAINLESS STEEL

MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	WT. (lbs.)
DF-569	83097	10	9 1/2	13 1/4	14 3/4	9 5/8	4 3/8	3 1/2	3/4	42

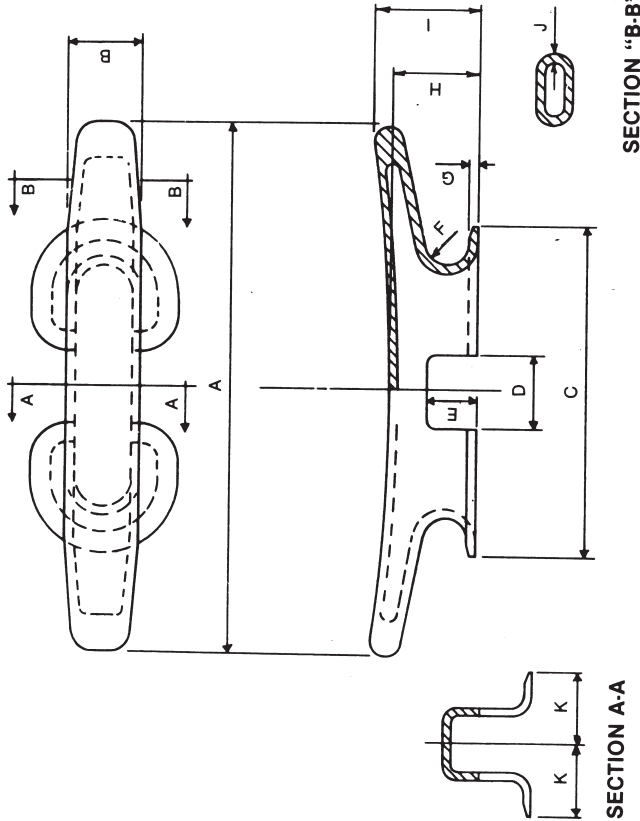
ULLAGE HATCH

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De police Sargent axed Boudreaux what hees wife say before she died.
 Boudreaux's wife was killed in an accident. When de police questioned him, de Sargent axed. "Did she say anything before she died?"
 Boudreaux said. "She spoke wit'out interruption for bout forty years."

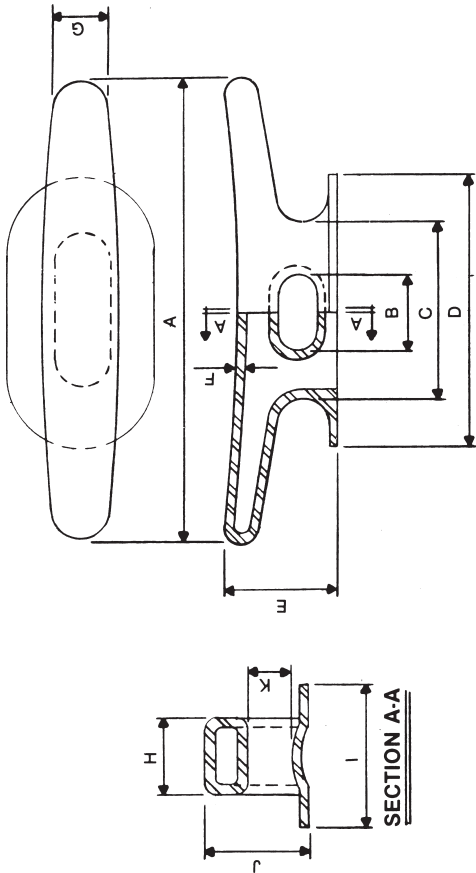
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MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	J	K	WT. (lbs.)
DF-48A	18597	36	36	5	22½	5	3½	1½	5/8	5/8	7/8	9/16	5	81
DF-36A	6890	42	42	6	25½	7½	3¼	1½	5/8	6½	7½	9/16	5½	114
DF-159A	6483	48	48	6½	27	8	5	1½	5/8	8¾	10	9/16	5¾	175

CAST STEEL LEVEL

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MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	J	K	WT. (lbs.)
DF-30	18562	24	24	3¼	9	10½	5½	1/2	3	4	7½	5½	2¼	50
DF-482	20265	36	36	8¼	17	23½	8	9/16	4	5	11	6¾	3¼	98
DF-483	20273	42	42	9¾	20	26¾	9	5/8	4¾	6	12½	7⅞	4⅞	160
DF-484	20257	48	48	11	23	30	10	3/4	5½	7	14	9	5	220

CAST STEEL LEVEL CHOCKS

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De New Job

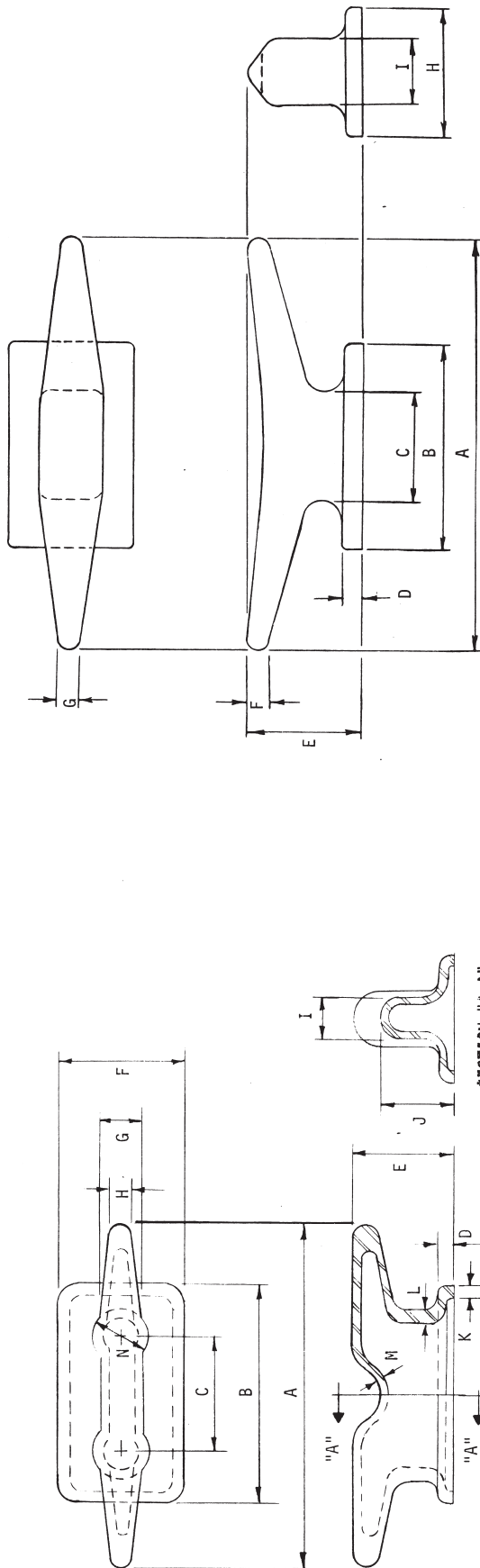
Boudreaux walked in de house de udder day and tells Marie. "Cher, I jus' found a great job! Go to work at 10:00 and get off at 2:30 every day. never no overtime. off every weekend. and it pays \$600.00 a week."

Marie says. "Mais dat sounds too good to be true."

Boudreaux tells her. "Oh it's true alrat. You start Monday."



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MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	WT. (lbs.)
DF-488	89338	30	30	19	10	1 3/8	8 7/8	11 1/4	3 1/2	1 3/4	3 3/4	6 5/8	1	1 1/4	3/4	5	180

CAST STEEL HEAVY LEVEL

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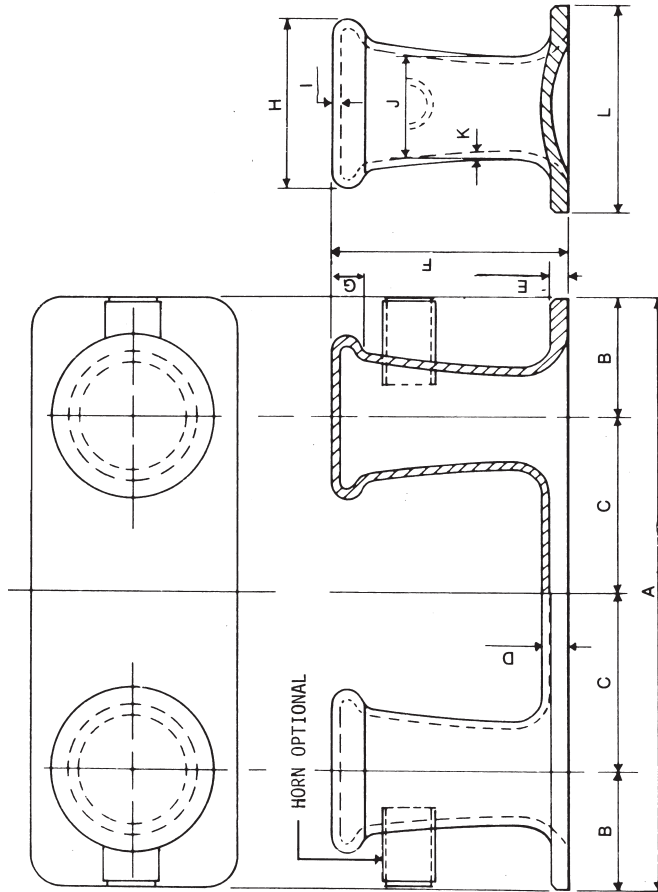
MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	WT. (lbs.)
DF-518	87920	18	18	9	4 3/4	7/8	5	1	1	5 1/2	2 1/8	34

CAST STEEL LEVEL

The specifications and details described by drawings or text in this literature are subject to change without notice.



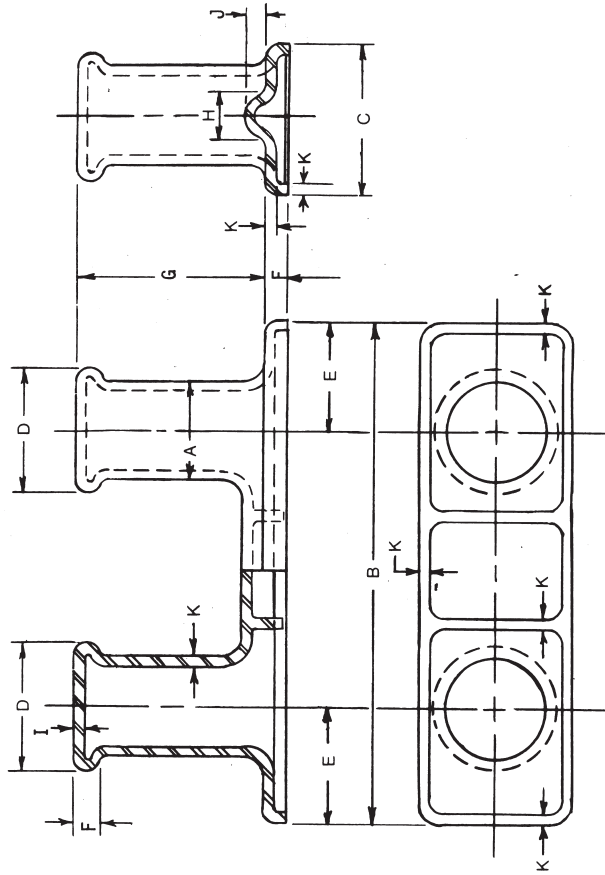
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MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	WT. (lbs.)
DF-2	7005	8	40	8	12	2	1 1/4	16	2	11	5/8	7	5/8	14	320
DF-2A	20281	w/Horn													330
DF-40	6858	10	45	9	13 1/2	2 1/4	1 1/4	18	2	13 1/2	3/4	9	1 1/4	15	545
DF-40A	77054	w/Horn													560

CAST STEEL DOUBLE BITTS

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MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	J	K	WT. (lbs.)
DF-491	89362	12	12	60	18	15	13 1/2	3	22 1/2	6	1	2	1 1/4	990
DF-498	21164	14	14	66	21	17 1/2	13	3 1/2	26 1/4	7	1	2	1 1/2	1350

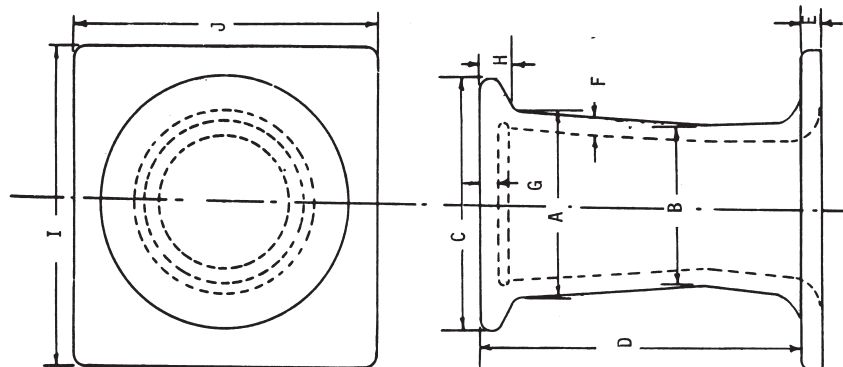
CAST STEEL DOUBLE BITTS

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NASHVILLE BRIDGE COMPANY

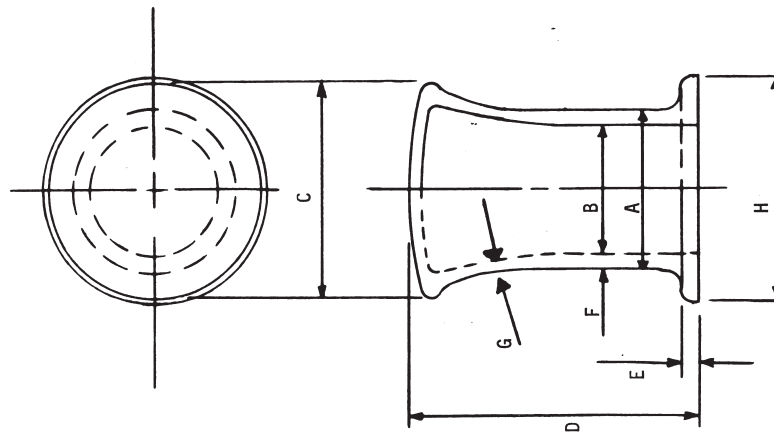
Rene' wanted to bury his dead dog in de people cemetery behind de church. Rene' Champagne lived for many years wit' only hees dog for a companion. One sad day he found hees dog dead from old age. He went to hees parish priest and axed eef services could be said for hees dog. De good fader said "Oh no. we can't have services for a dog here, but deres a new church down de street dat might be willing."
 "Fader do you t'ink \$50,000 might be enough of a donation?"axed Mr. Champagne.
 "Of course, why deedn' you tell me your dog was a Catholic?"



MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	J	WT. (lbs.)
DF-SB8	87971	8	8	7	11	14 ⁹ / ₁₆	1 ¹ / ₄	1	3/4	1 ¹ / ₂	14	14	160

CAST STEEL SINGLE BITT

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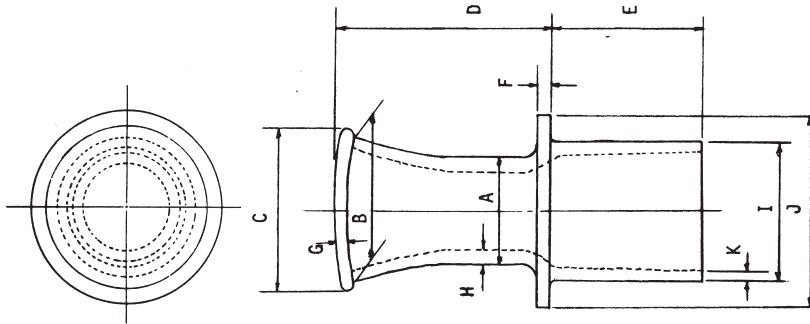
MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	WT. (lbs.)
DF-SB10	20230	10	10	8	13 ¹ / ₂	18	1	1	3/4	14	190

CAST STEEL SINGLE BITT

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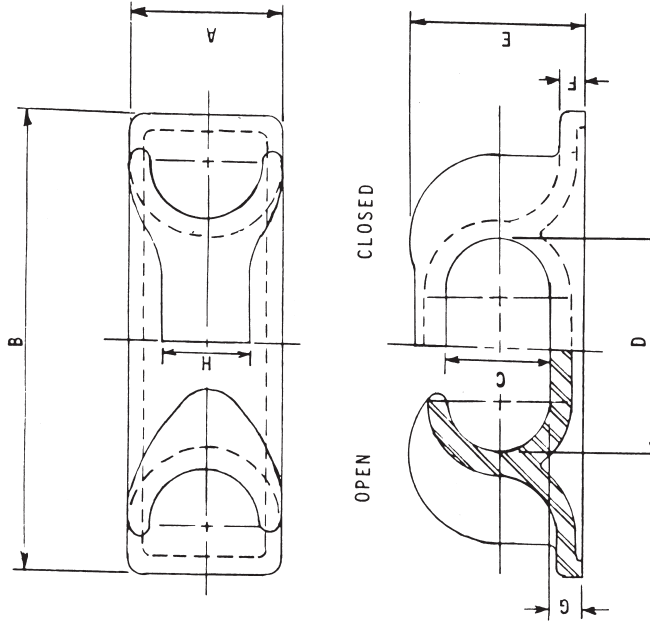
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MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	J	K	WT. (lbs.)
DF-530	21555	8	8	10 1/2	12	16	11	1	1	1	10 1/4	14	3/4	260

CAST STEEL SINGLE BITT THRU DECK

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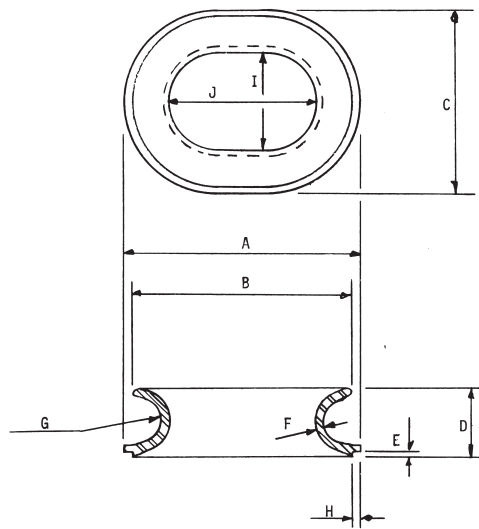
MODEL NO.	PART NO.	SIZE (Opening)	A	B	C	D	E	F	G	H	WT. (lbs.)
DF-496	89451	4 x 8 Open	6	19 3/4	4	8	6 3/4	1	1 3/8	—	75
DF-497	89478	Closed								3 1/2	84
DF-495	89443	5 x 11 Open	8	25 1/4	5 3/8	10 3/4	9	1 5/16	1 13/16	—	132
DF-485	20362	6 x 12 Open	9	27 3/4	6	12	10 1/8	1 1/2	2 1/16	—	175
DF-480	89397	Closed								5 1/4	191
DF-489	89346	8 x 16 Open	12	36	8	16	13 3/8	1 7/8	2 5/8	—	435
DF-490	89354	Closed								7	455

CAST STEEL CHOCKS

The specifications and details described by drawings or text in this literature are subject to change without notice.

probably from Louisiana if...

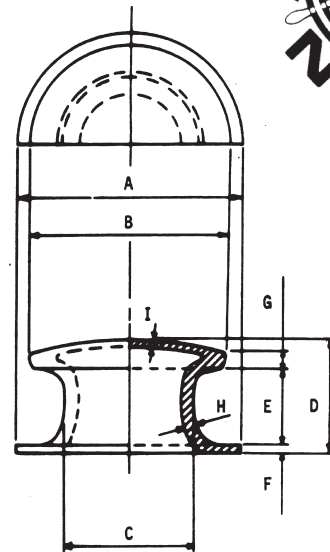
Your burial plot is six feet over rather than six feet under.



MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	J	WT. (lbs.)
DF-528	21512	8 x 12	19	17½	15	5½	3/8	1¼	1½	3/4	8	12	130

CAST STEEL MOORING RING

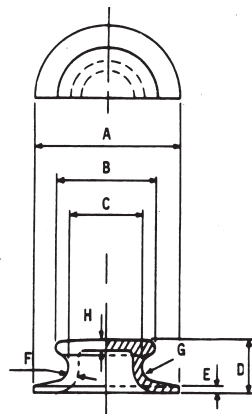
The specifications and details described by drawings or text in this literature are subject to change without notice.



MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	WT. (lbs.)
DF-185	14567	10	17	15	10	8½	5¼	5/8	1½	1	1/2	138

CAST STEEL BUTTON CHOCK

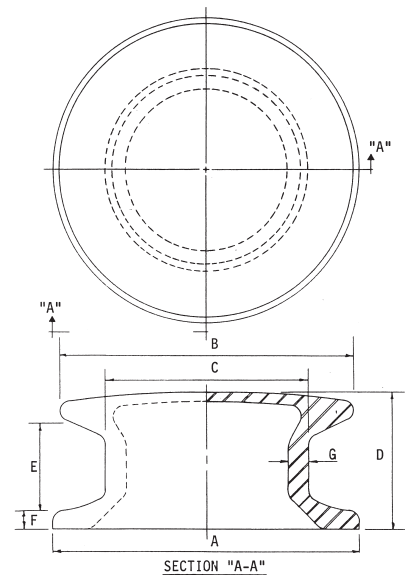
The specifications and details described by drawings or text in this literature are subject to change without notice.



MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	WT. (lbs.)
DF-192	6408	6	12	8½	6	4¼	1/2	3/4	1½	3/4	38

CAST STEEL BUTTON CHOCK

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MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	WT. (lbs.)
DF-473	77461	8	13	12½	8¼	5¼	3 11/16	3/4	7/8	75

CAST STEEL BUTTON CHOCK

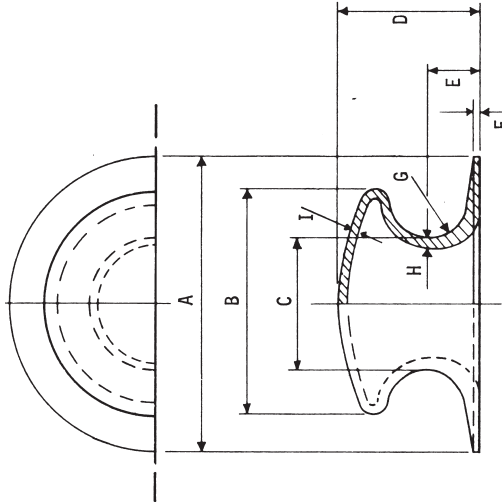
The specifications and details described by drawings or text in this literature are subject to change without notice.

probably from Louisiana if...
You've ever had Community Coffee.



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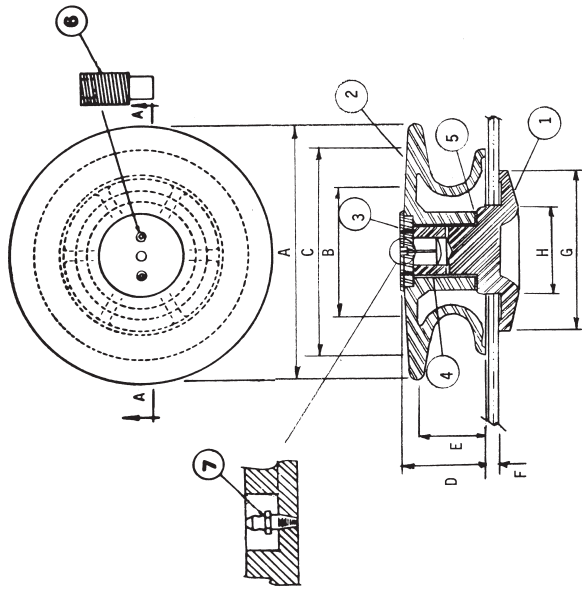
probably from Louisiana if...
When giving directions you use words like
“uptown”, “downtown”, “backatown”, riverside”,
“lakeside”, “northshore”, “westbank”, “down the
bayou” or “across the river”



MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	WT. (lbs.)
DF-194	16128	9	20	15 1/2	9	9 1/2	3 1/2	5/8	2 1/2	3/4	1/2	158

CAST STEEL BUTTON CHOCK

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SECTION "A-A"

PIECE NO.	DESCRIPTION	PART NO.	MATERIAL
1	BASE	6971	CAST STEEL
2	ROLLER	6947	CAST STEEL
3	CAP	6939	BRASS
4	BUSHING	6920	BRASS
5	WASHER	6912	BRASS
6	SET SCREW	74918	STEEL
7	GREASE FITTING	70505	STEEL

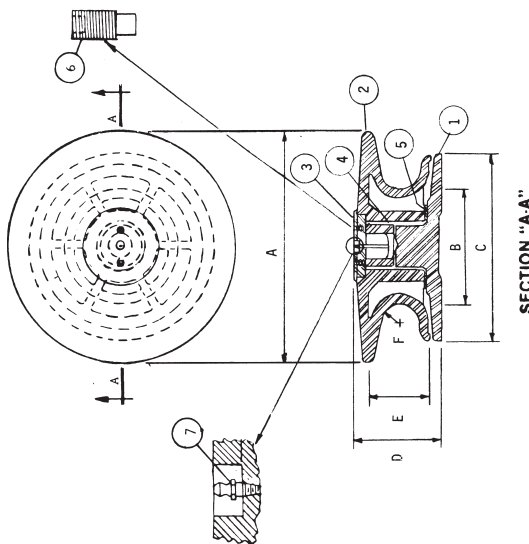
MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	WT. (lbs.)
DF-11	6998	16	16	8	13	5 3/32	4 1/8	7/8	10	5 1/8	126

THRU DECK ROLLER BUTTON CHOCK

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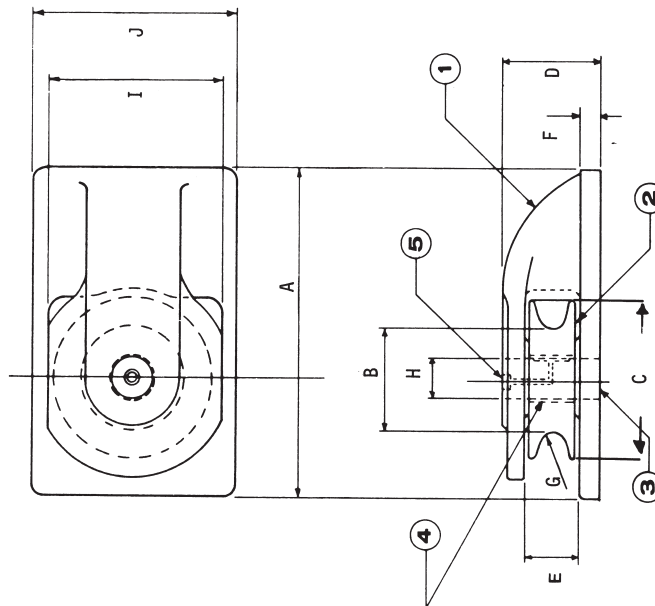


PIECE NO.	DESCRIPTION	PART NUMBER		MATERIAL
		DF-512	DF-511	
1	BASE	89257	89257	CAST STEEL
2	ROLLER	89230	6947	CAST STEEL
3	CAP	6939	6939	BRASS
4	BUSHING	6920	6920	BRASS
5	WASHER	6912	6912	BRASS
6	SET SCREW	74918	74918	STEEL
7	GREASE FITTING	70505	70505	STEEL

MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	WT. (lbs.)
DF-512	89222	12	12	8	13	6	4	1 1/4	125
DF-511	89249	16	16	8	13	6	4 1/8	1 1/4	130

ROLLER BUTTON CHOCK

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PIECE NO.	DESCRIPTION	PART NO.	MATERIAL
1	BASE	6467	CAST STEEL
2	ROLLER	6734	CAST STEEL
3	PIN	76198	COLD ROLLED STEEL
4	BUSHING	6726	BRASS
5	GREASE FITTING	9865	STEEL

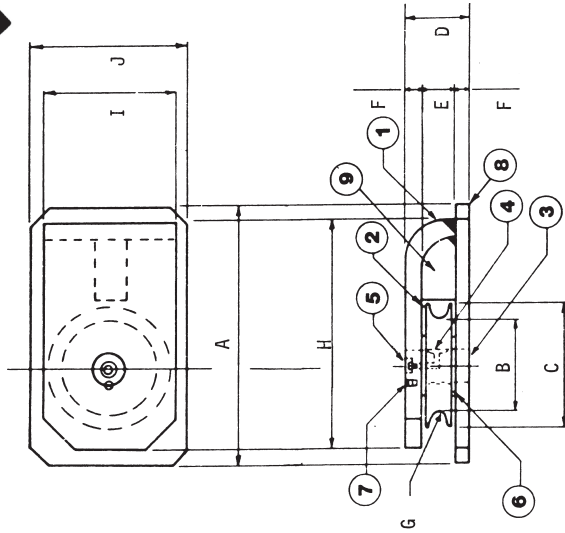
MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	J	WT. (lbs.)
DF-164	6475	11	22	6 3/4	10 3/4	6 1/4	3 1/4	1 1/2	5/8	2 11/16	12	14	296

SINGLE ROLLER CHOCK

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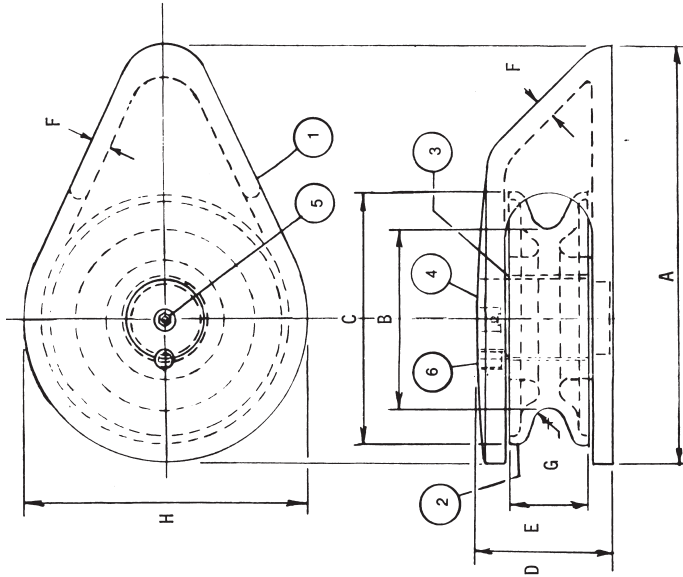


PIECE NO.	DESCRIPTION	PART NO.	MATERIAL
1	ROLLER CHOCK TOP	76986	STEEL
2	ROLLER SHEAVE	77003	STEEL
3	PIN	77038	STEEL
4	BUSHING	77410	BRONZE
5	GREASE FITTING	70505	STEEL
6	WASHER	77046	BRASS
7	TACK WELD		
8	ROLLER CHOCK BOTTOM	76988	STEEL
9	SEPARATOR BAR	77011	STEEL

MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	J	WT. (lbs.)
DF-361	13862	8	16 1/2	6	8	3 13/16	1 13/16	1	3/8	14 1/2	8 1/2	10	123

SINGLE ROLLER CHOCK

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PIECE NO.	DESCRIPTION	PART NO.	MATERIAL
1	BASE	89273	CAST STEEL
2	ROLLER	89281	CAST STEEL
3	BUSHING	89303	BRASS
4	PIN	89311	STEEL
5	GREASE FITTING	70505	STEEL
6	SET SCREW	70599	STEEL

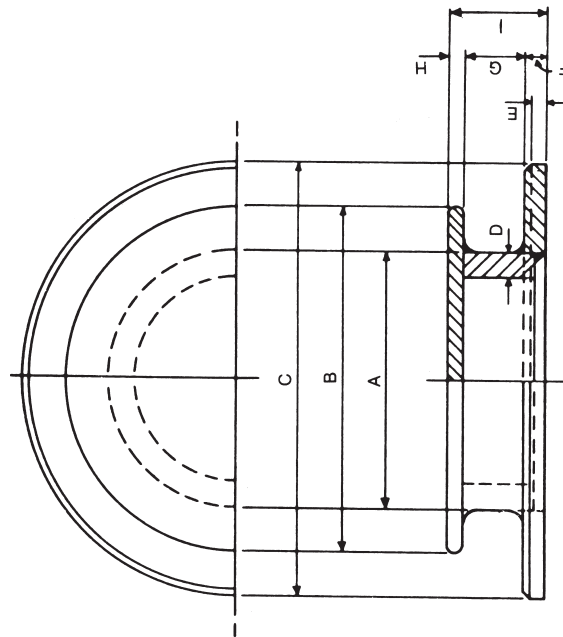
MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	WT. (lbs.)
DF-927	89265	8	13	5 1/16	7 7/8	4 1/4	2 7/16	5/8	17/32	9	55

SINGLE ROLLER CHOCK

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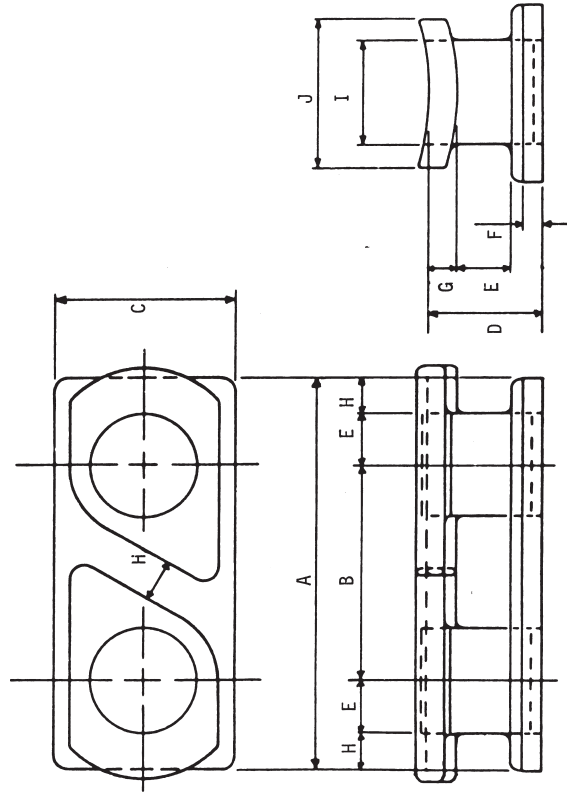
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MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	WT. (lbs.)
DF-148	6610	3 1/2	3 1/2	7	8	*	3/4	1	1 3/4	1/2	3 1/4	33
DF-129	6688	8 1/2	8 5/8	11 5/8	14 5/8	7/8	1/2	3/4	1 3/4	1/2	3	52
DF-129A	6661	11	11	14	17	1	1/2	3/4	1 3/4	1/2	3	72
DF-158	6505	8 1/2	8 5/8	11 5/8	14 5/8	7/8	1/2	3/4	3	1/2	4 1/4	62
DF-158A	6491	12	12	15	18	3/4	1/2	3/4	3 5/8	1/2	4 1/8	83

MILD STEEL WIRE ROPE BUTTON

*DF-148 Bitt Post is Solid
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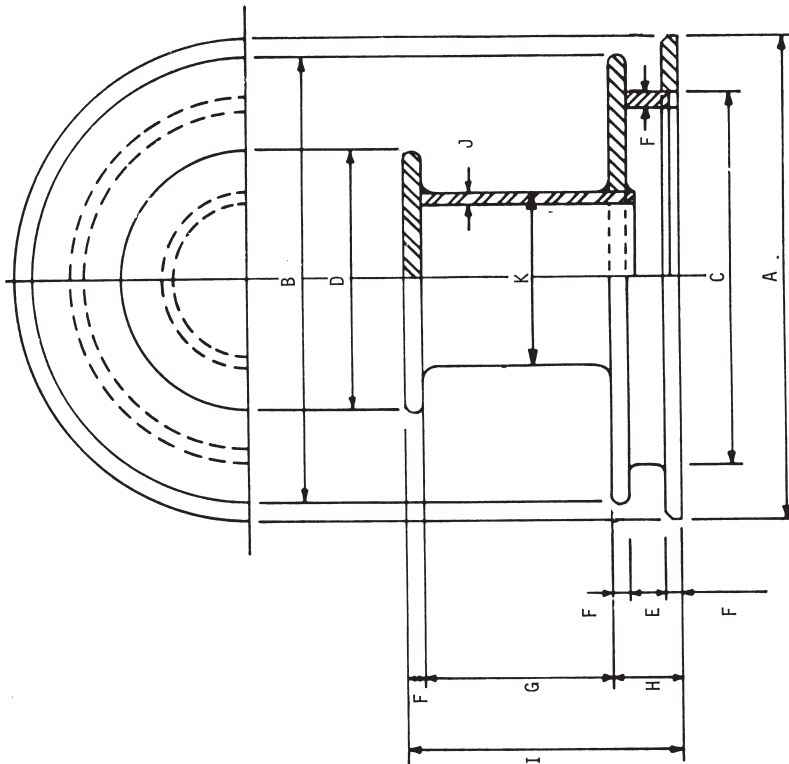
MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	J	WT. (lbs.)
DF-149	6602		13 3/8	7 3/8	6	3 5/8	1 3/4	5/8	7/8	1 1/4	3 1/2	5	47

MILD STEEL WIRE ROPE OPEN CHOCK

The specifications and details described by drawings or text in this literature are subject to change without notice.



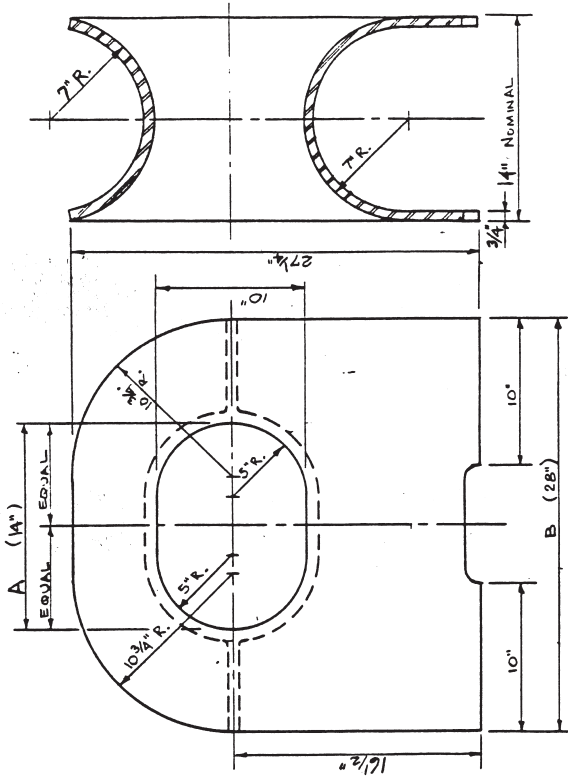
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MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	J	K	WT. (lbs.)
DF-163	13803		24	22	18	12	2 5/8	3/4	7 3/8	4 1/8	12 1/4	1 1/2	8 3/8	210

MILD STEEL COMBINATION BITT

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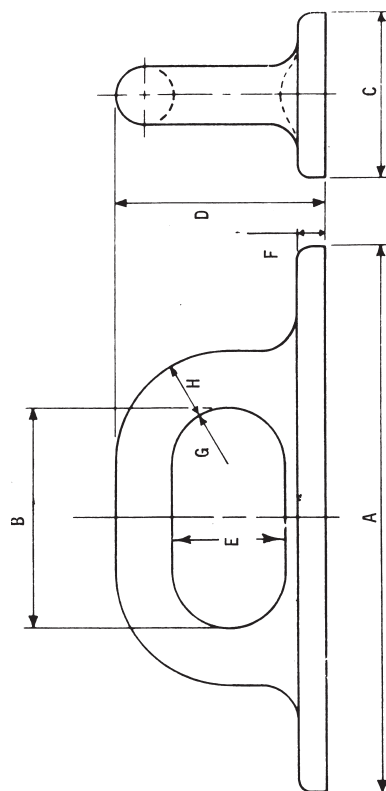
PIECE NUMBER	MATERIAL
21601	CAST STEEL
STOCK NUMBER	DATE OF DRAWING
DF-531	MARCH 1991
NAME	SHIPPING WEIGHT
10" x 14" PANAMA CANAL CHOCK	330 LBS

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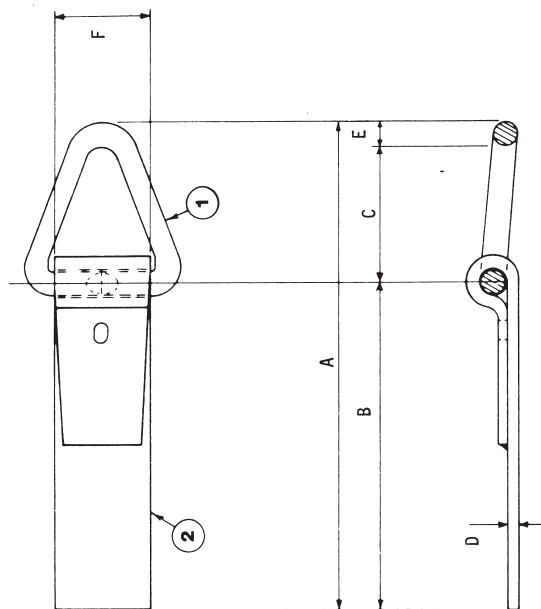
probably from Louisiana if...
When you refer to a geographical location "way up North," you are referring to places like Shreveport, Little Rock or Memphis, "where it gets real cold!"



MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	WT. (lbs.)
DF-196	16713		20	8	6	7 ⁵ / ₈	4	1	2	2 ¹ / ₈	55

CAST STEEL D-RING

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PIECE NO.	DESCRIPTION	PART NO.	MATERIAL
1	RATCHET STRAP RING	75736	MILD STEEL
2	RATCHET STRAP PLATE	75744	MILD STEEL

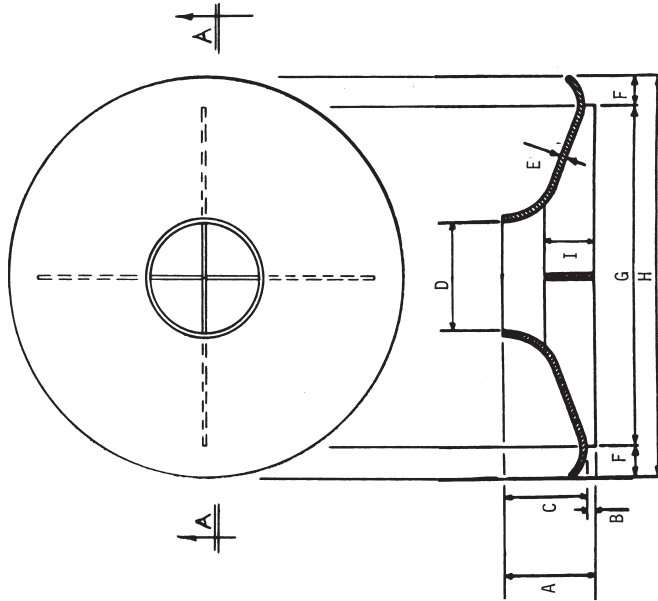
MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	WT. (lbs.)
DF-80	6807		35 ⁵ / ₈	24	9 ⁷ / ₈	3 ³ / ₄	1 ³ / ₄	7	83

RATCHET STRAP

The specifications and details described by drawings or text in this literature are subject to change without notice.



NASHVILLE BRIDGE COMPANY

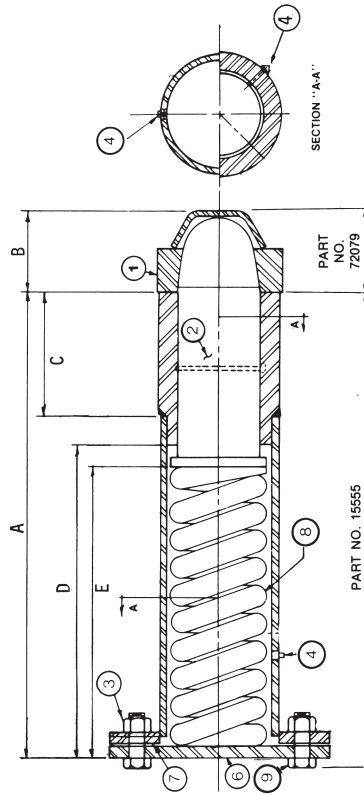


SECTION "A-A"

MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	I	WT. (lbs.)
DF-82-6	6793	6	4 ¹³ / ₁₆	7/8	3 ¹⁵ / ₁₆	6 ¹ / ₁₆	5/16	1 ⁹ / ₁₆	16 ⁷ / ₈	20	2 ¹ / ₂	33
DF-82-8	13749	8	5 ³ / ₈	1 ⁷ / ₁₆	3 ¹⁵ / ₁₆	8 ¹ / ₁₆	5/16	1 ⁹ / ₁₆	16 ⁷ / ₈	20	3	31
DF-82-10	17191	10	6 ⁷ / ₁₆	2 ¹ / ₄	3 ¹⁵ / ₁₆	10	5/16	1 ⁹ / ₁₆	16 ⁷ / ₈	20	4	34

STEEL SUCTION BELLMOUTH

The specifications and details described by drawings or text in this literature are subject to change without notice.



PIECE NO.	DESCRIPTION	PART NO.	MATERIAL
1	LOCKING PIN SOCKET ASSEMBLY	72079	STEEL
2	LOCKING PIN ASSEMBLY	72109	STEEL
3	1 1/8" DIA. HEAVY HEX NUT	15989	STEEL
4	GREASE FITTING	9873	STEEL
6	SPRING KEEPER PLATE	72176	STEEL
7	GASKET	75140	NEOPRENE
8	INTERLOCKING SPRING	7064	STEEL
9	1 1/8" DIA. x 3 1/4" HEAVY HEX BOLT	72222	STEEL

MODEL NO.	PART NO.	SIZE	A	B	C	D	E	WT. (lbs.)
DF-134	15555		33 ³ / ₈	5 ⁷ / ₈	9	22 ⁷ / ₈	21 ¹ / ₈	470

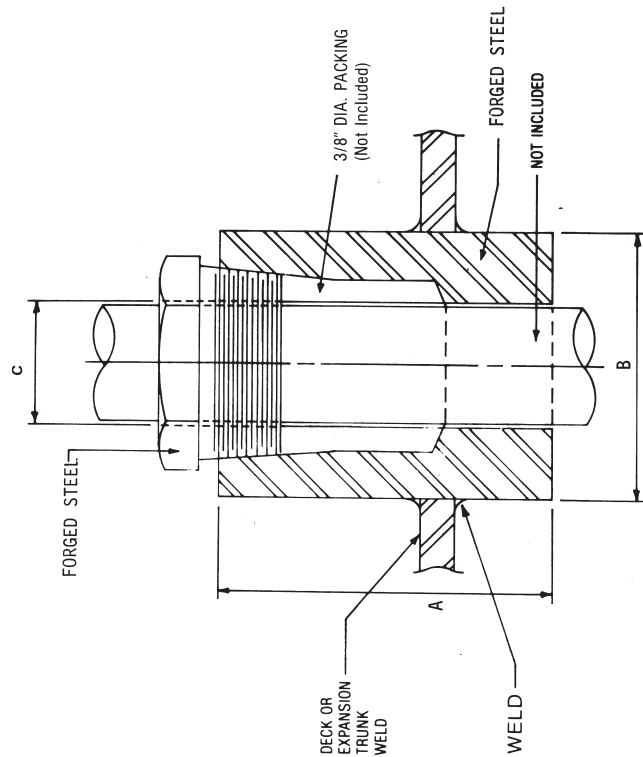
INTERLOCKING DEVICE

DF-134 Pin Assembly #15555 & Socket Assembly #72079 are ordered separately.

The specifications and details described by drawings or text in this literature are subject to change without notice.



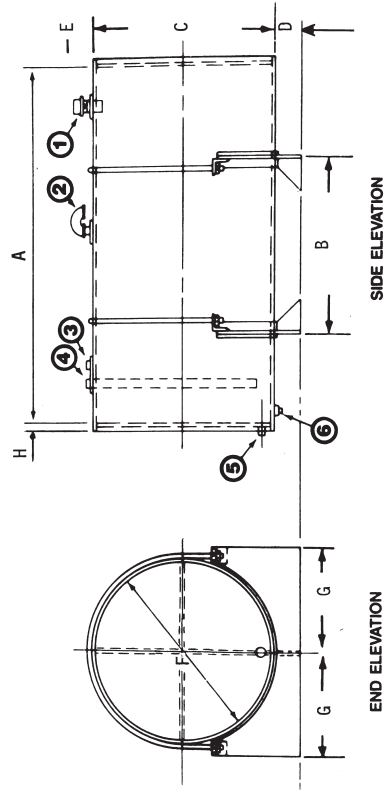
NASHVILLE BRIDGE COMPANY



MODEL NO.	PART NO.	SIZE	ROD	A	B	C	WT. (lbs.)
DF-437-3/4	75191	3/4	3/4	3/8	2 1/2	13/16	4
DF-437-1	6254	1	1	3/8	2 1/2	1 1/16	3 1/2
DF-437-1 1/4	75175	1 1/4	1 1/4	3 3/8	3	1 5/16	5 1/2
DF-437-1 1/2	75183	1 1/2	1 1/2	3 3/8	3	1 9/16	5

STUFFING GLAND

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PIECE NO.	DESCRIPTION
1	2" ϕ FILL w/BRASS CAP AND CHAIN
2	2 1/2" ϕ VENT w/STAINLESS STEEL FLAME SCREEN
3	1" ϕ RETURN CONNECTION
4	1" ϕ RETURN CONNECTION
5	1" ϕ OPTIONAL SUCTION OR DRAIN w/PLUG
6	1 1/2" ϕ DRAIN w/PLUG

MODEL NO.	PART NO.	SIZE	A	B	C	D	E	F	G	H	WT. (lbs.)
DF-448	6246	300 Gal.	72	35	36 3/8	6	7	36	20	1/2	714

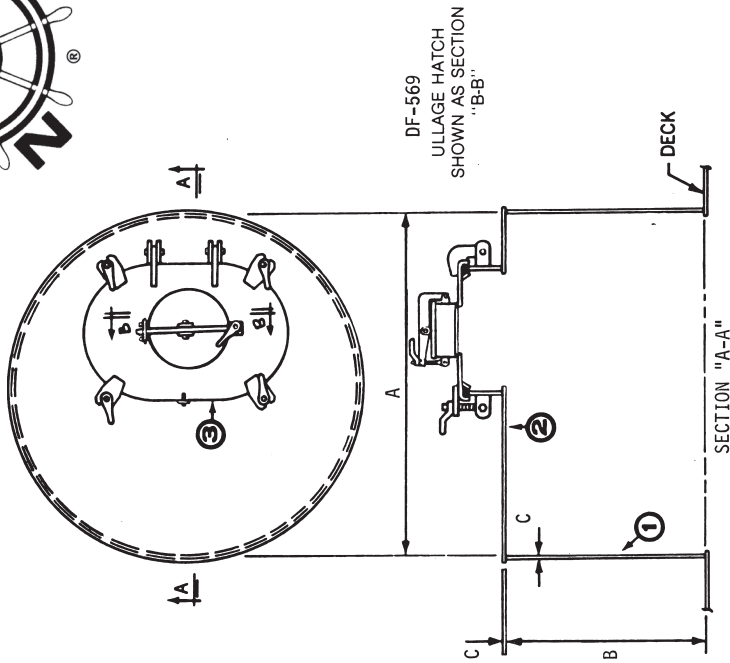
FUEL OIL TANK

MATERIAL: STEEL

The specifications and details described by drawings or text in this literature are subject to change without notice.
TANK TESTED TO 5 P.S.I., & BUILT IN ACCORDANCE WITH U.S. COAST GUARD SPECIFICATIONS FOR RIVER SERVICE.



NASHVILLE BRIDGE COMPANY

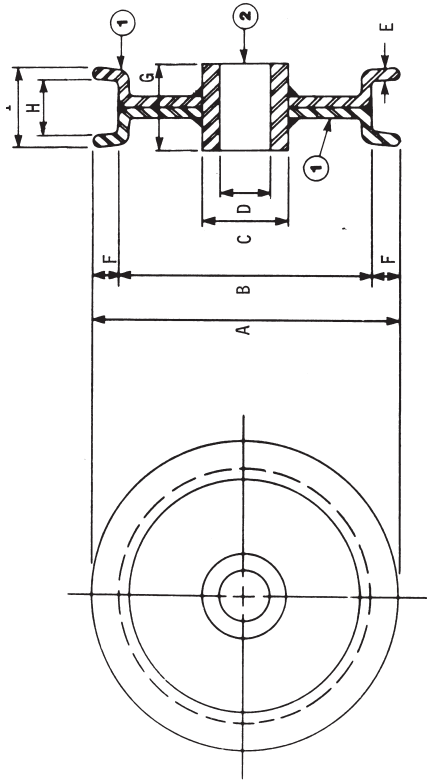


PIECE NO.	DESCRIPTION	PART NUMBER	MATERIAL
1	COAMING	DF-470	DF-449
2	COVER	76171	76171
3	RAISED HATCH w/Ullage Hatch	76163	76163
		85316	8214

MODEL NO.	PART NO.	SIZE	A	B	C	WT. (lbs.)
DF-449	6238	24 H. x 42 Dia. w/DF-144	42	24	5/16	520
DF-470	85308	24 H. x 42 Dia. w/DF-569	42	24	5/16	540

EXPANSION TRUNK

The specifications and details described by drawings or text in this literature are subject to change without notice.

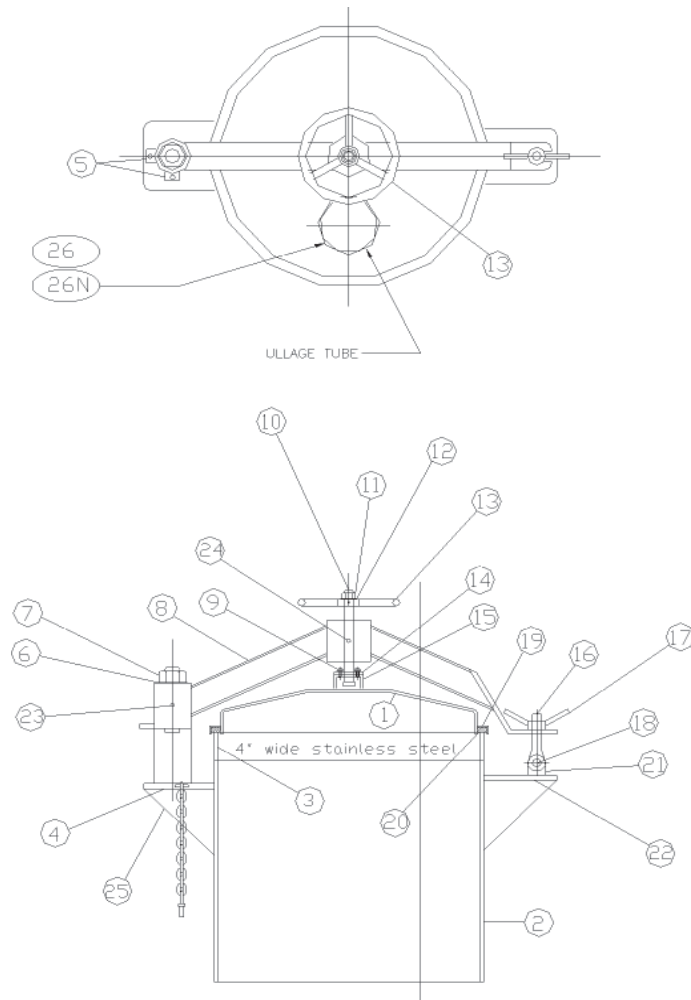


PIECE NO.	DESCRIPTION	PART NO.	MATERIAL
1	SIDE PLATE	79847	MILD STEEL
2	HUB	79855	COLD ROLLED STEEL

ROLLING COVER WHEEL

The specifications and details described by drawings or text in this literature are subject to change without notice.

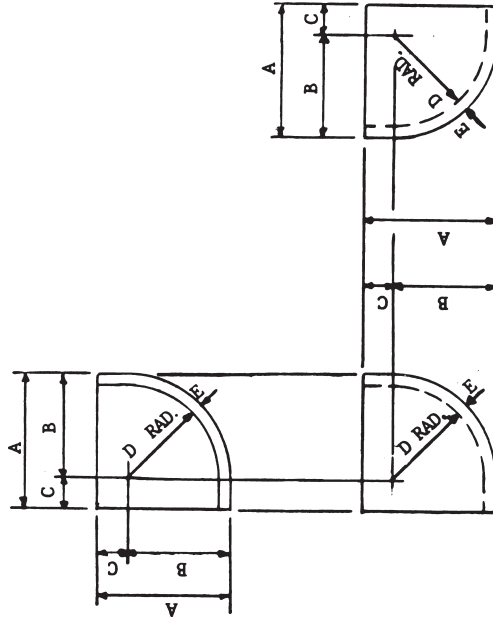
OCEAN DOME



Piece No.	Description	Material
1	COVER	MILD STEEL
2	COAMING	ABS GRADE A STEEL
3	SS COAMING	STAINLESS STEEL
4	PIN PAD	MILD STEEL
5	LOCKING PIN PAD	MILD STEEL
6	WASHER	BRASS
7	HEX NUT	STAINLESS STEEL
8	YOKE	MILD STEEL
9	HEX NUTS	MILD STEEL
10	SPINDLE	STAINLESS STEEL
11	HEX NUT	STAINLESS STEEL
12	WASHER	BRASS
13	HANDWHEEL	MILD STEEL
14	SPINDLE PAD CAP	MILD STEEL
15	SPINDLE PAD	MILD STEEL
16	DROP BOLT	BRASS
17	WING NUT	BRASS
18	DROP BOLT PAD	BRASS
19	GASKET RETAINER	MILD STEEL
20	GASKET	NEOPRENE
21	PIN PAD	MILD STEEL
22	DROP BOLT PAD	MILD STEEL
23	GREASE FITTING	BRASS
24	GREASE FITTING	BRASS
25	PAD BRACKETS	MILD STEEL
26	RETAINER RING	MILD STEEL
26N	FLAME SCREEN	STAINLESS STEEL



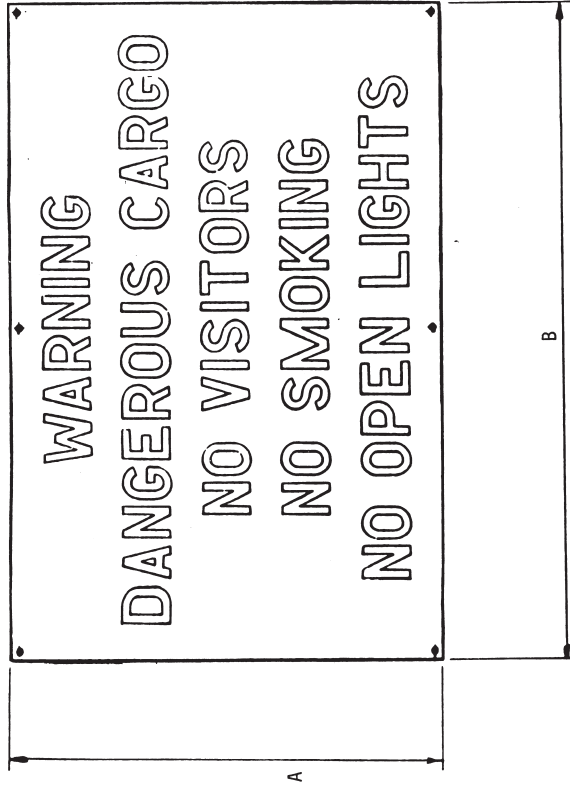
NASHVILLE BRIDGE COMPANY



MODEL NO.	PART NO.	SIZE	A	B	C	D	E	WT. (lbs.)
DF-486-6	87998	6	8 ³ / ₄	6 ³ / ₄	2	6	3/4	54
DF-487-12	88005	12	14 ³ / ₄	12 ³ / ₄	2	12	3/4	167

STEEL CORNER PLATES

The specifications and details described by drawings or text in this literature are subject to change without notice.



- NOTES: 1. THIS SIGN CONFORMS TO 46CFR151.45-2(e)(1)
2. INFORMATION SHOWN ON BOTH SIDES OF SIGN

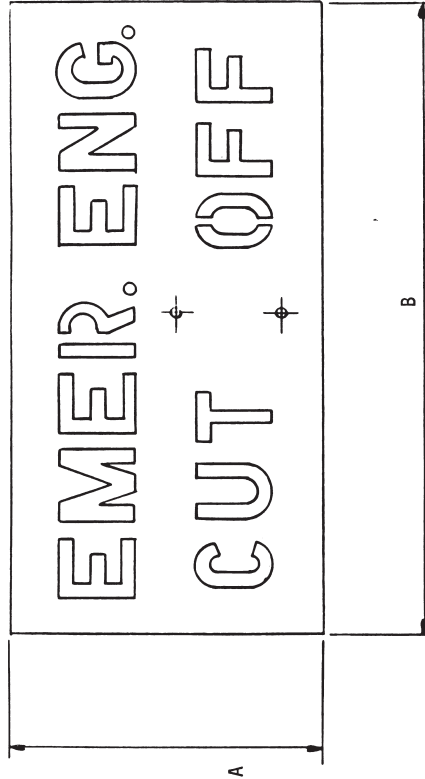
MODEL NO.	PART NO.	SIZE	A	B	WT. (lbs.)
DF-125	6718	27 x 40	27	40	5

ALUMINUM WARNING SIGN

The specifications and details described by drawings or text in this literature are subject to change without notice.



NASHVILLE BRIDGE COMPANY

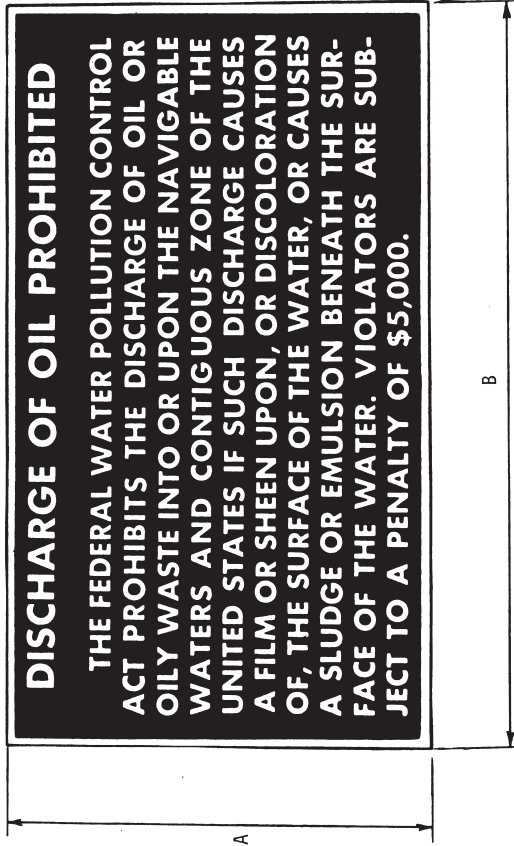


- NOTES: 1. INFORMATION SHOWN ON BOTH SIDES OF SIGN
2. THIS SIGN CONFORMS TO 46 CFR 32.50-35 (a)

MODEL NO.	PART NO.	SIZE	A	B	WT. (lbs.)
DF-335	6351	8 x 16	8	16	4

ALUMINUM EMERGENCY ENGINE CUT OFF SIGN

The specifications and details described by drawings or text in this literature are subject to change without notice.



- NOTE: 1. THIS SIGN CONFORMS TO 33 CFR 155.450 (a)
2. INFORMATION SHOWN ON ONE SIDE OF SIGN
3. WHITE LETTERS ON RED BACKGROUND

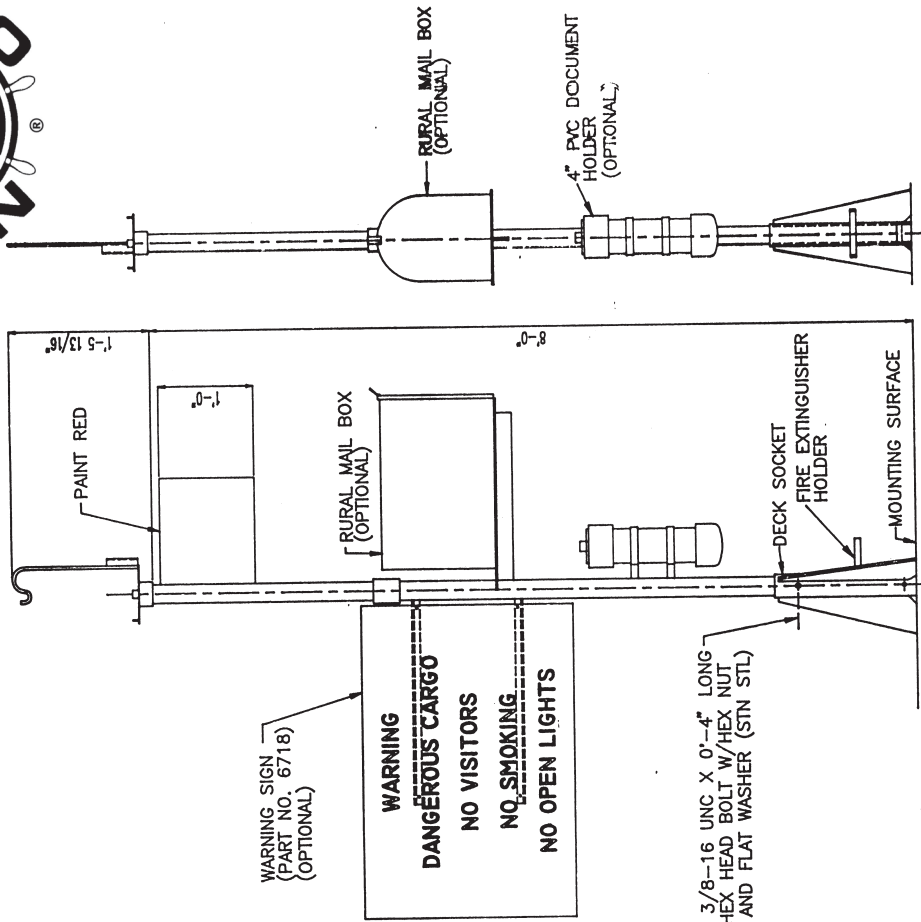
MODEL NO.	PART NO.	SIZE	A	B	WT. (lbs.)
DF-513	75434	8 x 14	7 7/8	13 13/16	1 1/2

PLASTIC OIL POLLUTION WARNING SIGN

The specifications and details described by drawings or text in this literature are subject to change without notice.

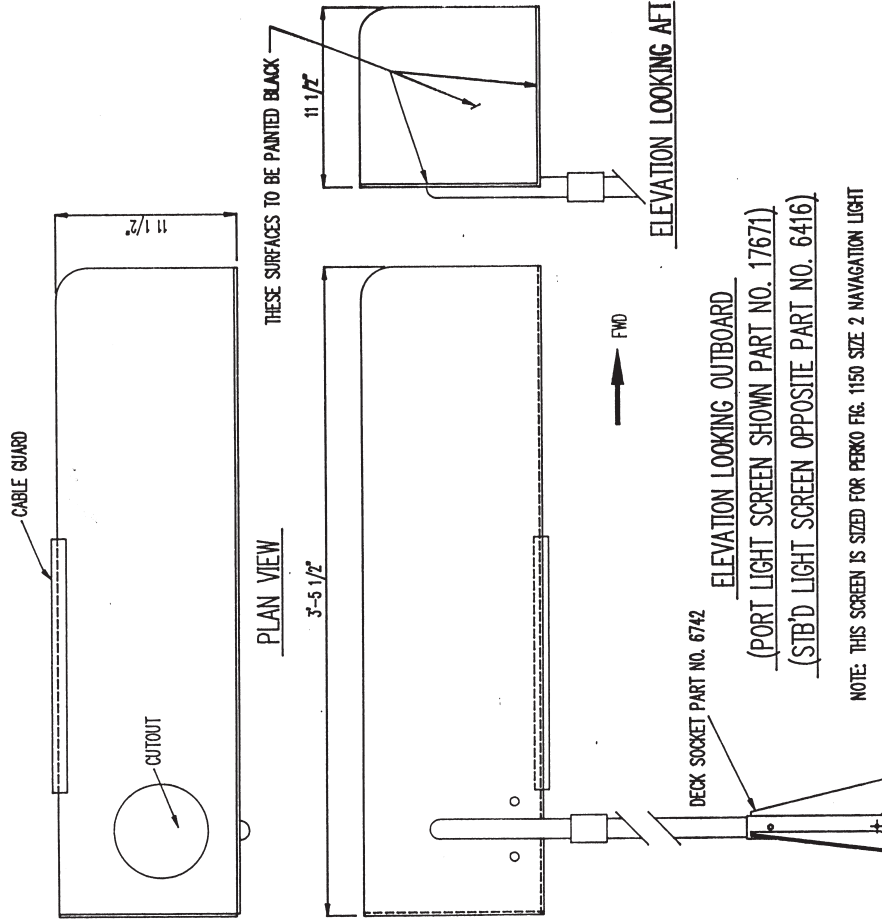


NASHVILLE BRIDGE COMPANY



MODEL NO.	PART NO.	WEIGHT (lbs)
DF-84	6785	

BARGE FLAG POLE AND WARNING SIGN



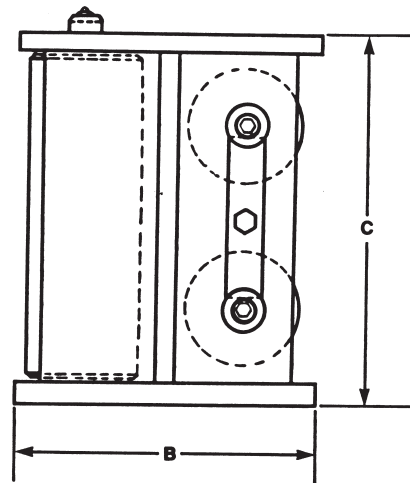
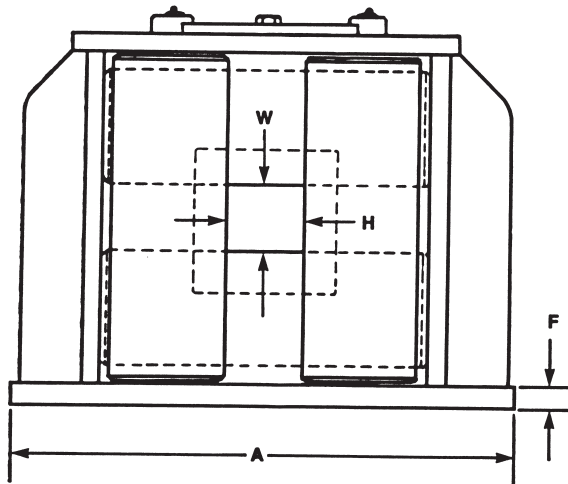
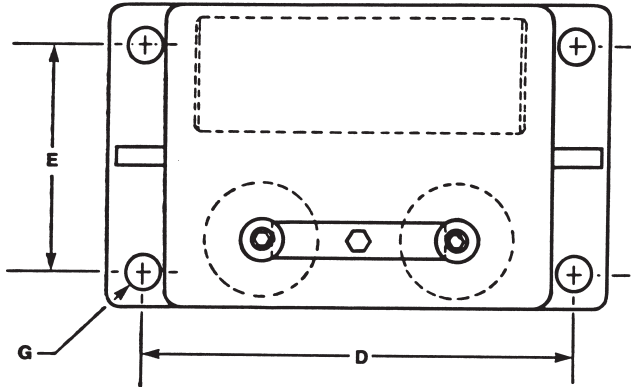
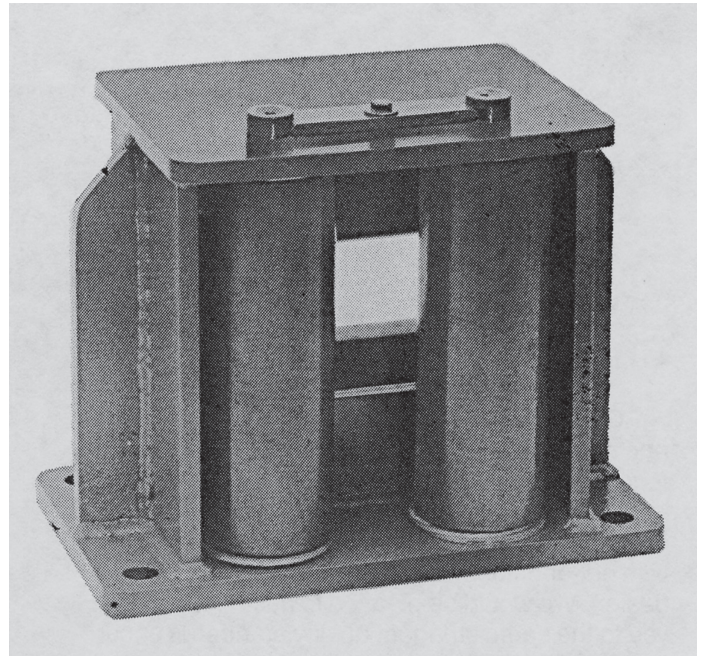
MODEL NO.	PART NO.	DESCRIPTION	WEIGHT (lbs)
	17671	PORT LIGHT SCREEN	
	6416	STB'D LIGHT SCREEN	
	6742	DECK SOCKET	

RUNNING LIGHT STANDS (PORT AND STB'D)

SKOOKUM®

Roller Fairleads

- Alloy steel rollers, heat treated
- Bronze bushings
- "Stressproof" steel pins
- Bolt down bases



MODEL NO.	WIRE ROPE SIZE	VERTICAL ROLLER	HORIZONTAL ROLLER	OPENING WxH	A	B	C	D	E	F	G	ROLLER PIN	NO. BOLT HOLES	LBS. KGS.
RF-0	in. 5/16-3/8	2 1/4 x 6 1/2	2 1/4 x 6 1/2	2 1/4 x 2 1/4	12	5 1/4	8 3/16	10 1/4	3 3/8	1/2	25/32	1	4	52
	mm. 8-10	57x165	57x165	57x57	305	133	208	260	98	13	20	25		24
RF-1	in. 3/8-7/8	4 x 11 3/8	4 x 11 3/8	2 3/4 x 2 3/4	17 1/2	10 1/2	13 3/8	15	8	3/4	1 1/16	1 3/8	4	235
	mm. 16-22	102x289	102x289	70x70	444	267	333	381	203	19	27	35		107
RF-2	in. 1-1 1/4	6 x 15 3/8	5 x 11	5 x 4	26	17	18 1/2	22	12 1/2	1 1/8	1 17/32	1 1/2	4	700
	mm. 25-32	152x391	127x279	127x102	660	432	470	559	318	29	39	38		318
RF-3	in. 1 3/4	8 x 22 1/2	8 x 22 1/2	6 1/2 x 6 1/2	36 3/4	23	27 1/8	31	8	1 1/2	1 13/16	3	6	2400
	mm. 44	203x572	203x572	165x165	933	584	689	787	203	38	46	76		1089

probably from Louisiana if...

You plan your wedding around hunting season & LSU football

FREEMAN OFFERS THE WIDEST SELECTION OF DOOR MODELS AND OPTIONS TO MEET YOUR SPECIFICATIONS



FREEMAN doors are built rugged with precision working components of stainless steel, marine aluminum and other quality materials. The precise fit and adjustable dogging of a Freeman door, along with its positive door jamb seal make it your best choice for new and old vessels alike.

A FREEMAN door is strong enough to withstand the onslaught of solid water, yet tight enough to keep out years of rain and spray. Typical installations include wheel-house, cabin side, engine room, stateroom access, and more.

FREEMAN doors offer a wide selection of options and a variety of styles to fit most applications. You'll be assured of rugged FREEMAN MARINE quality throughout! The elegant yet functional outward appearance masks the strength within.

All FREEMAN doors use our unique tight seal. A single piece, hollow neoprene or silicone gasket on the door's perimeter seals against the door jamb sealing edge, creating a high compression, uniformly tight seal. Mounting the gasket on the door rather than on the frame prevents premature failure of the gasket, common among doors with a frame mounted gasket.

FREEMAN doors solidly constructed and fully insulated, double-skin panel doors are suitable for the following typical high traffic access installations: pilothouse, galley, engine and staterooms, salon, main deck and above. Workboat, fishboat, and yacht alike rely on FREEMAN MARINE to provide superior construction at an affordable price.



probably from Louisiana if...

You offer somebody a "coke" and then ask them what kind: Coca-Cola, Dr. Pepper Pepsi, 7Up?

1110 SERIES STANDARD DUTY DOOR *WEATHER TIGHT SINGLE PANEL

FREEMAN
MARINE EQUIPMENT, INC.

FREEMAN MARINE'S 1110 SERIES Standard Duty, Weather Tight Rated, Single Panel Doors have double-skin panel construction offering rugged simplicity yet broad flexibility for configuring to your specific needs. These doors have .080" mill finished aluminum door skins captured in an extruded aluminum panel framework, clamp grip style windows with 3/16" clear glass, and marine grade lever handle locksets. The outer skin is trapped by the door panel extrusion, and the inner skin is riveted.

Solidly constructed and fully insulated, double-skin panel doors are suitable for the following typical high traffic access installations: pilothouse, galley, engine and staterooms, salon, main deck and above. Workboat, fishboat, and yacht alike rely on FREEMAN MARINE to provide superior construction at an affordable price.

STANDARD DUTY DESIGN FEATURES

- .080" Aluminum Panel Skins - Outside and Inside
- Welded Panel Frame for Strength.
- Outer Skin Captured in Frame Extrusion, Riveted Inner Skin.
- Gasket on Door Panel for Long Life and Positive Sealing.
- Radius or Mitered Corners.
- Bolt-in, Weld-in or Clamp-in Frames.
- Fully Welded Internal Doublers at All Seams.
- Mill Finish Aluminum Door Skins.
- Cast Aluminum Dogging Handles with Powder Coated Finish.
- Stainless Steel Dog Shafts.
- Glass Filled Striker Wedges.
- Solid Polyurethane Insulation.
- Stainless Steel Hinges.
- Stainless Steel Fasteners.
- Clamp-Grip Window with 3/16" Clear Tempered Glass - Options Available.

Where suitable, doors can be designated to include additional windows and/or dogs or omit windows and/or dogs. Pilothouse doors are often provided with windows in both top and bottom of the panel to allow greater operator visibility to deck or waterline areas.



Interior view of a typical standard duty door, showing door dog used here to secure the two halves of a dutch panel door, providing a weathertight seal and preventing unauthorized entry



Shown are two of the many custom window options available in standard duty doors.



probably from Louisiana if...

You can name all of your 3rd cousins

1120 SERIES HEAVY DUTY DOOR *WEATHER TIGHT SINGLE PANEL

FREEMAN
MARINE EQUIPMENT, INC.

FREEMAN MARINE'S 1120 SERIES Heavy-Duty, *Weather Tight Rated, Single Panel Doors feature thick panel skins (.160"), extra internal reinforcements, no seams exposed and all welded construction creating a rugged, seamless closure in individually dogged versions. Heavy-Duty doors feature a lineal brushed finish, a trademark of FREEMAN Heavy Duty Doors that creates a durable, uniform texture.

When specified with optional FREEMAN Bristol yacht quality paint to your color specifications, the 1120 Series' seamless welded construction makes an impressive, rugged portal that features long lasting beauty. Double-skin panel construction offers rugged simplicity yet allows for a broad variety of configurations. These doors offer welded in windows and can accommodate special glazing. Solidly constructed and fully insulated and moderately priced, Freeman Heavy-Duty doors are suitable for the following typical high traffic access installations: Pilothouse, Galley, Engine Room, Aft Salon and Main Deck

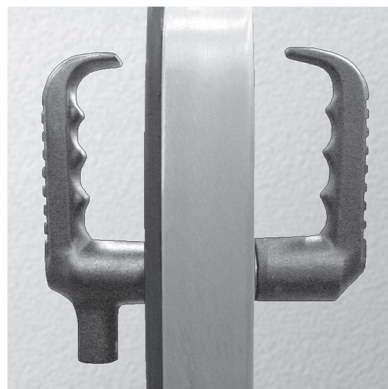


HEAVY-DUTY DESIGN FEATURES

- .160" Thick Aluminum Panel Skins Standard - .125" to .250" Available
- Welded Frame & Skin Construction.
- Gasket on Door Panel for Long Life and Positive Sealing.
- Radius or Mitered Corners.
- Bolt-in, Weld-in or Clamp-in Frames.
- Additional Internal Stiffeners for Extra Ruggedness.
- Lineal Sanded Finish Standard. Yacht-Quality Painted Finish Available.
- Solid Insulation Standard - Optional Materials Available.
- Welded In Window - Glazing and Tint Options Available.
- Stainless Steel Dog Shafts.
- Cast Aluminum Handles - Powder Coat Standard - Options Available.
- Glass Filled Striker Wedges.
- Stainless Steel Hinges.
- Stainless Steel Fasteners.

Pilothouse doors are often provided with windows in both top and bottom of the panel to allow greater operator visibility to deck or waterline areas. Where suitable, doors can be designated to include additional windows and/or dogs or omit windows and/or dogs.

Below left shows interior (dog) and exterior contours of typical powder coated cast aluminum handle set. Below right is a mitered corner engine room door showing door mounted gasket, cast aluminum dog/handles and optional round window



probably from Louisiana if...

Every so often, you have waterfront property.

1130 SERIES **WATERTIGHT RATED PREMIUM PANEL SINGLE DOORS

FREEMAN
MARINE EQUIPMENT, INC.

FREEMAN MARINE'S 1130 SERIES ** Watertight Rated, Premium Panel Single Doors feature a rugged knife-edge seal, robust gasket and floating hinges to provide a premium watertight seal when properly adjusted and dogged closed.

Thick panel skins (.160" up to .250"), extra internal reinforcements, no seams exposed and all welded construction create the rugged, seamless closure that is demanded from a premium, individually dogged door.

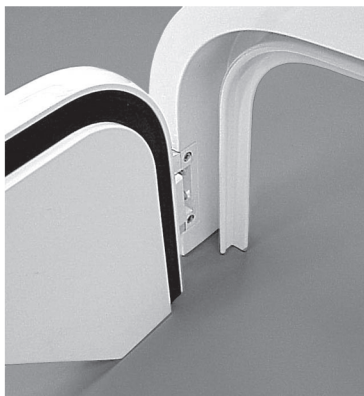
When Bristol yacht quality painted to your color specifications by Freeman, the 1130 Series' seamless welded construction makes an impressive, rugged portal that features long lasting beauty. These doors offer welded in windows and can accommodate special glazing.

Solidly constructed, fully insulated and moderately priced, FREEMAN Premium Panel doors are suitable for engine room, transom and bulkhead applications.

** Degree of watertightness depends on number of dogs, proper installation and sealing adjustment. Watertight doors are individually defined, specified and fabricated for each application.

PREMIUM PANEL DESIGN FEATURES

- 160" Thick Aluminum Panel Skins Standard - Up to .250" Available.
- Welded Frame & Skin Construction.
- Gasket on Door Panel for Long Life and Positive Sealing.
- Welded In Window - Glazing and Tint Options Available.
- Bolt-in, Weld-in or Clamp-in Frames.
- Cast Aluminum Handles, Powder Coat Standard - Options Available.
- Solid Insulation Standard - Optional Materials Available.
- Additional Internal Stiffeners for Extra Ruggedness.
- Lineal Sanded Finish Standard - Yacht-Quality Painted Finish Available.
- Stainless Steel Dog Shafts.
- Glass Filled Striker Wedges.
- Stainless Steel Hinges.
- Stainless Steel Fasteners.
- Radius Corners.



These photos illustrate the knife edge seal and panel mounted gasket (left), and dog/handle detail (right).



probably from Louisiana if...

You can pronounce Tchoupitoulas but can't spell it. (also, Thibodaux, Opelousas, Pontchartrain, Ouachita, Atchafalaya),

1400 SERIES QUICK-ACTING, SINGLE ACTUATION PANEL DOORS

FREEMAN
MARINE EQUIPMENT, INC.

FREEMAN MARINE'S 1400 SERIES QUICK-ACTING DOOR SYSTEM.

- Patented Chain Drive Dogging System.
- Heavy-duty Panels.
- Models Available For Weather Tight Or Watertight Rated Locations.
- 1500 And 1600 Series Doors Also Available With "Quick-acting" Dogging.

FREEMAN MARINE'S Quick-Acting door is designed to fill a need in the marine industry for handsome, double skinned, fully insulated doors, suitable for both yacht and commercial use. Actuating a single handle easily dogs doors; several styles of internal and external handles are available. The quick-acting dogging system utilizes a patented chain drive mechanism that is fully contained between the inner and outer skins of the door, affording protection from the elements.

FREEMAN MARINE'S 1400 Series Doors offer the utmost in versatility. FREEMAN'S patented chain-drive dogging system allows the installation of full length, centrally located and specially shaped windows; this design feature is not available on competitive products.

FREEMAN MARINE'S Quick-Acting Doors feature quality construction marine grade aluminum, 316L stainless steel, and other durable marine grade materials are used throughout. All doors are fully welded internally with doublers at all seams and cross-braced to provide even more rigidity.

Several hinge configurations are available including surface, barrel, concealed yoke and pantograph.

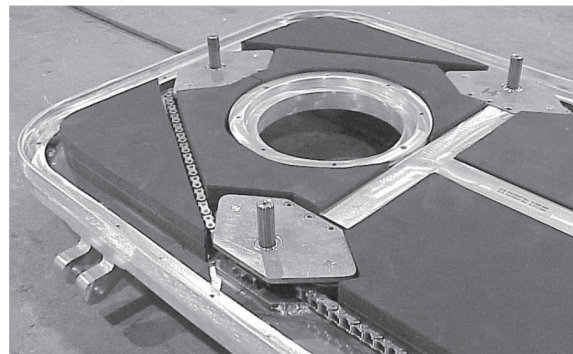
FOR WEATHER TIGHT RATED INSTALLATIONS:
1420 Series Doors featuring an adjustable sealing stop in the door coming should be specified.

FOR WATERTIGHT RATED INSTALLATIONS:
1430 Series Doors that utilize knife-edge sealing and a large gasket surface are the correct choice.

Doors are normally supplied with four to six dogs; additional dogs can be specified for larger doors. A keyed locking system that secures all the dogs by engaging the drive chain is a popular option.



Three styles of Quick-Actuating handles are depicted above. Below: Model 1430 water door under construction reveals the internal stiffeners, port window, Quick-Acting chain drive mechanism and accostic insulation.



probably from Louisiana if...

You don't worry when you see ships riding higher in the river than the top of your house.

1500 SERIES DUTCH PANEL DOORS

STANDARD DUTY, HEAVY DUTY & PREMIUM

FREEMAN
MARINE EQUIPMENT, INC.

FREEMAN MARINE'S 1500 SERIES DUTCH PANEL DOORS.

- AVAILABLE IN BOTH STANDARD DUTY (1510) AND HEAVY-DUTY (1520) MODELS .

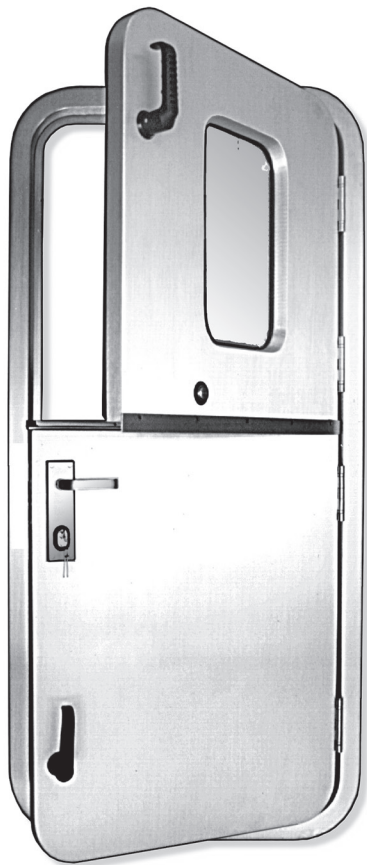
FREEMAN MARINE'S Dutch door performs like a single panel door when regular access is needed, yet the top half can be operated separately from the bottom half to improve ventilation and visibility.

The same high quality tooling and processes used to make FREEMAN single panel doors are put to work in the construction of each Dutch door.

A gasketed seam seals the top and bottom halves of the door to each other. Offering simplicity yet broad variation of style, solidly constructed and fully insulated, typical Dutch door applications include the galley and pilothouse of all types of craft.



Several examples of Freeman Marine standard and heavy duty Dutch doors are shown, including a unit with angled frame and window, fabricated to the customer's exact specifications.



probably from Louisiana if...

You judge a po-boy by the number of napkins used. (Amen) You Got dat rite

1600 SERIES FRENCH PANEL DOORS STANDARD DUTY, HEAVY DUTY & PREMIUM

FREEMAN
MARINE EQUIPMENT, INC.

FREEMAN MARINE'S 1600 SERIES FRENCH PANEL DOORS.

- AVAILABLE IN BOTH STANDARD DUTY (1610) AND HEAVY-DUTY (1620) MODELS.

When wider access is needed, FREEMAN MARINE'S French door performs like two single panel doors that seal to each other.

The same high quality tooling and construction techniques used to make the single panel door are put to work in the construction of each French door. A gasketed seam seals the two door panels to each other.

Common vessel locations for French doors are in high traffic entryways and passageways.

Where suitable, doors can be designated to include additional windows and/or dogs or omit windows and/or dogs.



Depicted are several styles of Freeman Marine French doors, including standard and heavy duty types and two views of a unit (open & closed) with maximum windows. This latter unit has concealed latches to secure the inactive panel and to prevent unauthorized entry.



probably from Louisiana if...

The waitress at your local sandwich shop tells you a fried oyster po-boy dressed is healthier than a Caesar salad.

1700 SERIES SLIDING DOORS **STANDARD DUTY, HEAVY DUTY & PREMIUM**

FREEMAN
MARINE EQUIPMENT, INC.

FREEMAN MARINE'S 1700 SERIES SLIDING DOORS

- 1710 SERIES: "SINGLE AXIS" - ECONOMICAL... AND VERY VERSATILE.
- 1720 SERIES: "DUAL-AXIS " - FULL PERIMETER NEOPRENE GASKET & CAM- ACTUATED WEATHER TIGHT SEALING.

Wherever you need a sliding door - pilothouse, aft salon, or mid-ship access - FREEMAN MARINE Sliding Doors will perform smoothly, reliably and elegantly.

FREEMAN MARINE Sliding Doors can be specified in virtually any size required and a variety of configurations - single panel, bi-parting, and multi-panel styles. Custom sized windows designed to complement adjacent vessel windows can be ordered. Passive solid panels as well as sidelights are also available.

FREEMAN MARINE Sliding Doors are finished in yacht-quality linear polyurethane and offer attention to detail, durability, performance and style not found in ordinary sliding doors.

Panels are precision crafted from rugged aluminum extrusions and sheet, roll on noise-isolating rollers and latch with the highest quality hardware available.

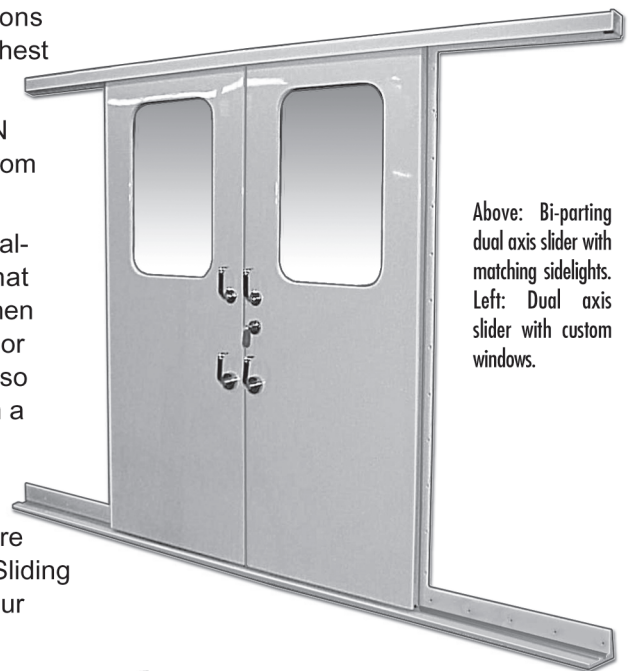
- DUAL-AXIS "FULL PERIMETER" GASKET & CAM ACTION SEALING - 1720 SERIES. A Patented Design Exclusively from FREEMAN MARINE.

FREEMAN MARINE proudly offers its exclusive, patented Dual-Axis sealing feature - a single lever actuated mechanism that creates a weather tight, full perimeter, positive gasket seal when the door is fully closed and "cammed in". Ideal for both exterior and interior applications, this single handle camming ability also acts as a HOLD OPEN FEATURE to secure the door panel in a secure, stationary position at any point along its track.

- "SINGLE AXIS" SLIDING DOORS - 1710 SERIES

When cost is a consideration or the door's location allows more traditional felt strip sealing, FREEMAN MARINE Single-Axis Sliding Doors are usually specified. The same craftsmen that build our Dual-Axis doors craft these doors with the same careful attention to detail. The only real differences are the track and sealing design. Reliability, craftsmanship and attention to detail are without compromise.

Most 1720 sliders are fully finish-painted and provided with windows and operating hardware per customer's specification. Note separate operating handles for the locksets and the internal camming mechanism.



Above: Bi-parting dual axis slider with matching sidelights.
Left: Dual axis slider with custom windows.



probably from Louisiana if...
You know the definition of "dressed."

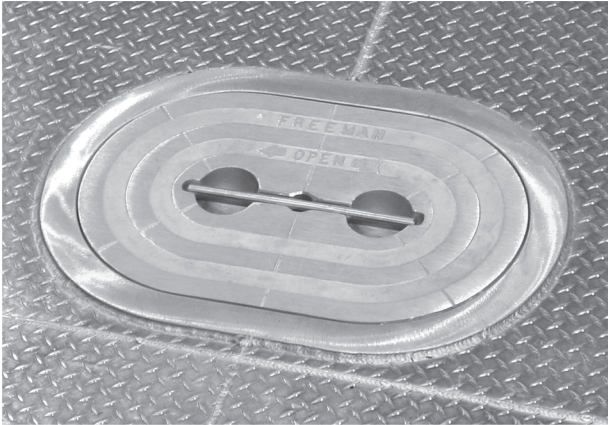
WIDEST RANGE OF MODELS AND FEATURES OF ANY BRAND

FREEMAN MARINE 2400 Series Cast Hatches

are specified and used on a wide variety of yachts, fishing boats, tugs, barges, research vessels, offshore tenders, rescue craft and other workboats. The FREEMAN hatch is designed for new boats, for replacing other hatches in standard openings, or for improving existing craft. They can be installed in any deck style or material using stock



Round and square hinged cast hatches with aluminum deck rings ready to install in steel, aluminum, wood or fiberglass decks. In the center is an elliptical cast lift-out hatch with a stainless steel weld-in deck ring.



- **Top Value**

A FREEMAN Cast Hatch is the best buy for every flush hatch application. Measure it against any other hatch for long life of materials, strength of design, precision fit, smooth action, dependable mechanism, and built-in, never-lost handle.

- **Value Added**

Yacht-quality linear polyurethane, powder coat, and anodized finishes available.

- **Unique**

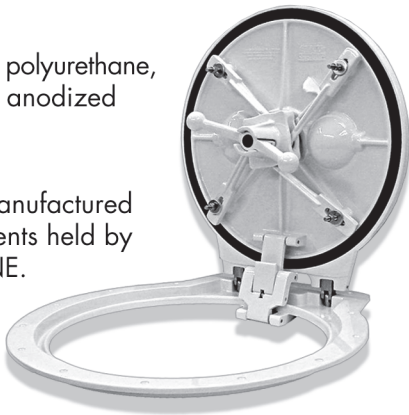
Developed and manufactured under various patents held by FREEMAN MARINE.

- **Fast Acting**

Simply grasp the handle and pull, the shaft slides up into place, and with less than a quarter of a turn completely disengages the locking mechanism. The dogs and linked handle do the work smoothly in just a second.

- **Easy Lift**

With the locking mechanism disengaged, the hatch is merely resting on the deck ring and can be lifted out with one hand.



- **Positive Dogging**

Closing is just as quick and easy. Evenly spaced dogging arms (either 3, 4 or 8 per hatch) exert uniform pull on the cover plate. Handle position shows when dogging arms are engaged or loose.

- **Hatch Sealed**

Hatch and handle fit flush with the deck, the handle in recessed lock position. The FREEMAN Cast Hatch handle is always there when you need it.

- **Watertight**

Designed to seal up to 25-foot head, the double-sealing gasket actually seals tighter under pressure.

- **Versatile**

Installs in steel, aluminum, wood or fiberglass decks. Complete unit includes aluminum or steel mounting ring for bolting or welding installations.

- **Reliable**

The unique design, fit, finish and adjustability of the dogging mechanism assures smooth, consistent action - no binding or jamming of parts. This hatch, adjusted to proper tensions, can't be over or under tightened by mistake. It operates the same each time.

- **Low Maintenance**

All parts are made of superior materials designed especially for marine and other abusive environments. The hatch and most parts are corrosion resistant aluminum. All other components are stainless steel, acetal or compatible.

- **Customer Approvals**

U.S. Coast Guard, CE, ISO-12216 compliant, ABS, Lloyd's Register of Shipping, Bureau Veritas and German Lloyd's approvals have been awarded and may be obtained for specific intended uses. FREEMAN Cast Hatches are currently in use on Coast Guard vessels and U.S. Naval craft of all types.

probably from Louisiana if...

You can eat Popeye's, Haydel's and Zapp's for lunch and wash it down with Barq's and several Abitas, without losing it all on your stoop.

2400 SERIES ALUMINUM CAST HATCH VARIETY & FEATURES

FREEMAN
MARINE EQUIPMENT, INC.

MORE SIZES AND STYLES TO FIT YOUR APPLICATION

Whether it's for new construction or improving an existing craft, easy-to-install and precision crafted deck hatches are a must for convenient access and watertight integrity on commercial vessels. No company knows this better and offers more models of Cast Hatches than FREEMAN MARINE of Gold Beach, Oregon USA



Lift out 15"X24" Cast Aluminum hatch with compression seal aluminum deck ring.

Often copied but never equaled, FREEMAN offers more fit-for-purpose styles and more optional features than any other cast hatch manufacturer in the world. FREEMAN'S size range reaches from an 8" (201mm) opening size round lift-out all the way up to an impressive 36"x36" (915mm x 915mm) square hinged hatch with integral hold-open. FREEMAN MARINE provides mounting ring models to adapt their cast aluminum hatch covers to virtually any deck style or material.

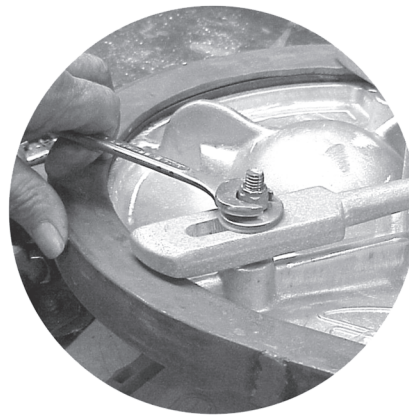


24" Square hinged hatch with steel deck ring. Note raised T-Handle in the open position.

TWO IMPORTANT FEATURES DISTINGUISH FREEMAN CAST ALUMINUM HATCHES FROM OTHER DESIGNS:

#1...The standard pocketed, stainless steel T-handle is built in - permanently part of the hatch so it's right there where you need it every time. It can't get lost. Simply grasp the handle and pull, the shaft slides up into place, and with less than a quarter of a turn the locking mechanism completely disengages. It's a matter of one or two seconds. The alignment of the handle shows when dogging arms are engaged or loose.

#2...The evenly spaced dogging arms (either 3, 4 or 8 depending on size of hatch) exert uniform sealing pressure on the cover plate. The unique design, fit and adjustability of FREEMAN'S dogging mechanism assure smooth, consistent action - no binding or jamming of parts. Adjusted to proper tensions, a FREEMAN HATCH can't be over or under tightened by mistake. It operates the same each time.



Each dog can be easily adjusted for even, balanced tension assuring smooth operation, security and longevity of FREEMAN cast aluminum hatches.

Reliability and accessibility of service parts is always a concern for critical vessel components. While ruggedly designed and precision crafted, deck hatches are often subjected to the most severe conditions and encounter more than a few "hard knocks". Whether it's a original replacement gasket for periodic scheduled maintenance or parts needed to repair a hatch regrettably damaged, BYRNE, RICE & TURNER keeps substantial inventories of FREEMAN parts for immediate shipment.

probably from Louisiana if...

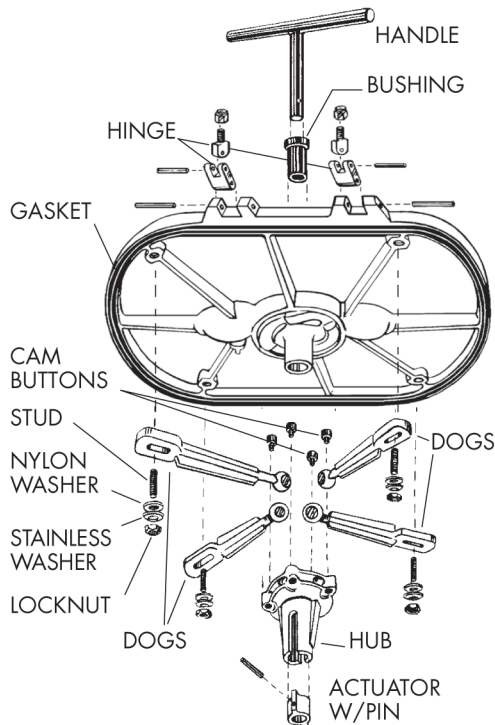
The smell of a crawfish boil turns you on more than HBO.

2400 SERIES ALUMINUM CAST HATCH STYLES

FREEMAN
MARINE EQUIPMENT, INC.

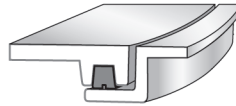
TYPICAL HATCH COVER ASSEMBLY

With Complete Mechanism Installed
Shape & optional hinge vary by model

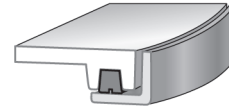


KNIFE EDGE OR COMPRESSION?

- **Compression Seal 2400 Series Hatches** have easy-to-clean spigots, feature long gasket life, and are economical to purchase.
- Aluminum Deck Rings are intended to be weld installed into aluminum decks and bolt installed into other deck materials.



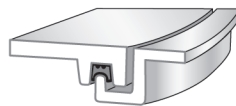
Compression Seal w/Aluminum Deck Ring



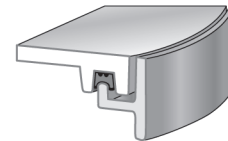
Compression Seal w/Steel Deck Ring

- Steel Deck Rings are to be weld installed into steel decks only.
- Watertight seal intermittent to 25 foot head, continuous 10 foot head top-loaded pressure (on properly installed and adjusted hatch assemblies).
- Specify any special performance criteria and/or certification requirements at time of order.

- **Knife Edge Seal 2400 Series Hatches** feature a coaming with drain gutter and an aggressive sealing rim edge. A drain fitting can be installed to minimize water from entering enclosure when hatch is initially opened.

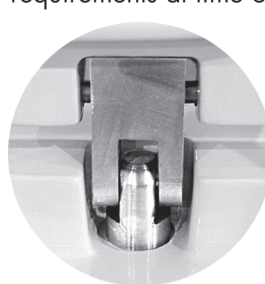


Knife Edge Seal w/Aluminum Deck Ring



Knife Edge Seal w/Steel Deck Ring

- Aluminum Deck Rings are intended to be weld installed into aluminum decks and bolt installed into other deck materials.
- Steel Deck Rings are to be weld installed into steel decks only.
- Specify any special performance criteria and/or certification requirements at time of order.



Interior view of standard Freeman "floating" hinge installed on hatch assembly.



Hinged Hatches

For hinged models the unique hinging device allows the hatch to be opened more than 180 degrees and "floats" when the hatch is closed to facilitate a tighter seal. Round hatches 18" and larger, and all oval and square hatches with aluminum covers are available hinged from the factory.



This 2435-Series (above) (19" x 26") flush-top cast hatch features a watertight, knife edge sealing edge with integral gutter. When closed, the hatch provides a totally flush deck surface. It has been custom assembled with a concealed, below deck yoke hinge and integral hold open.

probably from Louisiana if...

You're not afraid when someone wants to "ax you something."

2400 SERIES ALUMINUM CAST HATCH SHAPES

FREEMAN
MARINE EQUIPMENT, INC.

ROUND HATCHES

- Round hatch sizes 8", 12", and 15" are ideal for quick-acting access into shaft alleys, for fish sorting, void inspection, ventilation and access to valving, piping, wiring, controls, and other areas where seaworthy security is required.



8" & 12" Round hatch with compression seal and aluminum ring.

- 18", 20", 22", 24" and 30" round clear opening manhole-sized access hatches are ideal for entry and escape of all types, especially when a person must be able to pass through the opening. Escape route applications, storage access, lazarette access, fish sorting, and many more applications are common Freeman Marine installations.



24" Round hinged hatch with knife edge seal and aluminum ring (left) and an 18" Round lift out hatch with knife edge steel ring (right).

OVAL HATCHES

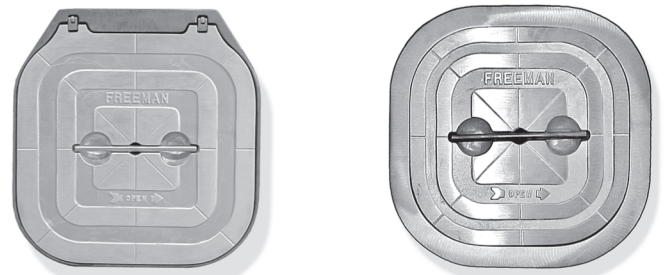
- Oval Style 12"x18", 15"x24" and 19"x26" lift out or hinged clear opening hatches are ideal for manhole-sized access of all types, especially when deck framing restricts cutout dimensions. Escape route application, storage access, lazarette access, fish sorting, and many more applications are common oval shaped Freeman hatch installations. The 15"x24" clear opening dimension is a standard used by many throughout the world as a crawl-through access opening.



Two 15" X 24" Oval hatches. Left: Lift out style with knife edge seal aluminum ring. Right: Hinged hatch with knife edge seal steel ring.

SQUARE & RECTANGULAR HATCHES

- Square hatch sizes 20"x20", 22"x22", 24"x24", 30"x30" and 36"x36" are best for quick-acting access, escape routes, gear storage and where other types of large manhole-sized watertight security is required.
- The square models utilize a knife-edge sealing surface design that reduces the possibility of water dripping into a compartment when the hatch is opened, yet offer the advantages of flush deck versatility. The diagonal dimension opening is greater than standard oval or round shape hatches.



Above Left: Square hinged hatch with knife edge seal steel ring. Above Right: Lift out style with knife edge seal aluminum ring. Right: Rectangular hinged hatch with knife edge seal aluminum ring.



probably from Louisiana if...

You don't learn until high school that Mardi Gras is not a national holiday.

2400 SERIES ALUMINUM CAST HATCH OPTIONS

FREEMAN
MARINE EQUIPMENT, INC.



24" Smooth Top Hatch with optional yoke hinge, hold open and inside escape handle.

HANDLES

- Quarter-turn of center spindle engages or disengages mechanism on all models. All hatches feature uniform & equally spaced dogging with adjustable dog pressures.
- Attached topside T handle standard. Optional removable tools include stowed key style, bi-square, hex drive, or interlocking spanner wrench and spindle combinations.
- Optional Inside escape handles, wheels, or levers available for installation on hatches with clear opening greater than 18" (455mm).

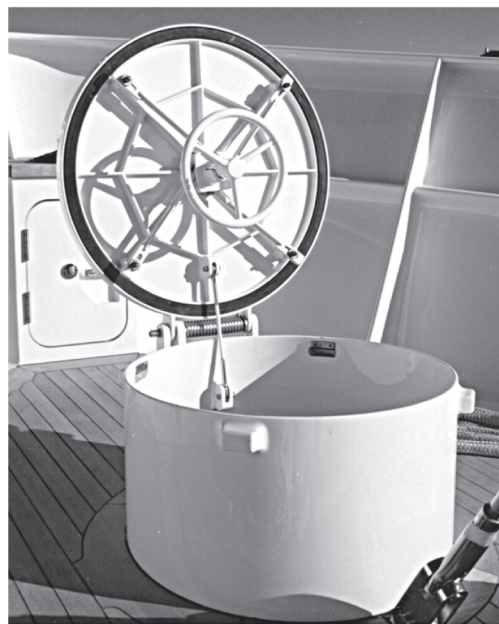
MATERIALS

- Deck rings/coamings available in aluminum, steel, or stainless steel; hot-dip galvanizing is available for steel rings. Optional coaming extensions are available on custom basis.
- Most models utilize standard mechanism aluminum alloy. Stainless steel mechanism available as option on most models.
- Where the term 'CRES' (corrosion resistant steel) or 'Stainless Steel' is used it shall mean type 316 stainless steel unless otherwise specified.

GASKETS

- Neoprene gaskets standard on all hatches-flat surface seal (50 durometer, operating range -60F to +260F) or knife-edge seal (25 durometer, operating range -20F to +225F). Optional gaskets include harder durometer for heavy traffic areas, Buna-N where contact with fuel or oil based materials may occur and other compositions for specialty applications.
- Specialty applications and options are available. Specific intended use approvals may or may not be necessary or available. Contact FREEMAN MARINE or local dealer for additional information.
- Assembly weights shown in charts are standard assembly units using materials shown. Complete assembly weights will be dependent upon options selected for final configuration.

Optimal below deck escape handle.



30" Round Cast Hatch installed on knife edged raised coaming. Note optional inside wheel and spring loaded hold open.

probably from Louisiana if...

You don't realize until high school what a "county" is.

2400 SERIES ALUMINUM CAST HATCH COMPRESSION SEAL/ALUMINUM RING

FREEMAN
MARINE EQUIPMENT, INC.



30" Round lift out with aluminum ring



22" Round hinged with aluminum ring



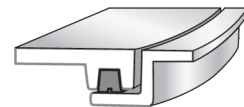
8" Round lift out with aluminum ring



15"X24" Oval lift out with aluminum ring



Compression Seal w/Aluminum Deck Ring



PART NO.	"SIZE"	SHAPE	STYLE	DIMENSIONS								MECHANISM				ASSEMBLY WEIGHT	
				CLEAR OPENING		ROUGH OPENING*							STD. MATERIAL		DOG QTY.	LBS.	KGS.
				A (inches)	A (mm)	B	C	D	E	OVERALL (inches)	OVERALL (mm)						
2401-0002	8"	ROUND	LIFT-OUT	7.9	201	10.3	12.0	1	0.31	9.8	249	ALUMINUM ALLOY	3	8	3.6		
2402-0002	12"	ROUND	LIFT-OUT	11.9	302	14.8	17.4	1.3	0.31	13.9	353	ALUMINUM ALLOY	3	13	5.9		
2403-0002	15"	ROUND	LIFT-OUT	15.0	381	17.8	21.5	1.3	0.31	17.0	432	ALUMINUM ALLOY	3	23	10.4		
2404-0002	18"	ROUND	LIFT-OUT	18.0	457	20.9	24.5	1.4	0.31	20.0	508	ALUMINUM ALLOY	3	30	13.6		
2406-0002	20"	ROUND	LIFT-OUT	19.8	503	22.8	26.5	1.3	0.31	21.9	556	ALUMINUM ALLOY	4	36	16.3		
2408-0002	22"	ROUND	LIFT-OUT	22.0	559	24.8	28.5	1.6	0.31	24.0	610	ALUMINUM ALLOY	4	39	17.7		
2411-0002	24"	ROUND	LIFT-OUT	23.3	592	26.6	30.5	1.4	0.31	25.8	655	ALUMINUM ALLOY	4	52	23.6		
2415-0002	30"	ROUND	LIFT-OUT	30.0	762	33.5	37.3	1.4	0.31	32.5	826	STAINLESS STEEL	4	81	36.7		
2431-0002	12"x18"	OVAL	LIFT-OUT	12.0x18.0	305x457	15.0x21.0	18.8x24.8	1.5	0.31	14.1x20.3	358x516	ALUMINUM ALLOY	4	29	13.2		
2433-0002	15"x24"	OVAL	LIFT-OUT	14.6x23.4	371x594	17.6x26.6	21.3x30.3	1.5	0.25	16.3x25.9	414x658	ALUMINUM ALLOY	4	35	15.9		
2441-0002	18"	ROUND	HINGED	18.0	457	20.9	24.5	1.6	0.27	20.0	508	ALUMINUM ALLOY	3	35	15.9		
2443-0002	20"	ROUND	HINGED	19.6	498	22.8	26.5	1.7	0.40	21.9	556	ALUMINUM ALLOY	4	44	20.0		
2445-0002	22"	ROUND	HINGED	22.0	559	24.8	28.5	1.7	0.40	24.0	610	ALUMINUM ALLOY	4	45	20.4		
2447-0002	24"	ROUND	HINGED	23.4	594	26.4	30.5	1.7	0.40	25.8	655	ALUMINUM ALLOY	4	59	26.8		
2452-0002	30"	ROUND	HINGED	30.0	762	33.5	37.3	1.7	0.40	32.5	826	STAINLESS STEEL	4	82	37.2		
2471-0002	12"x18"	OVAL	HINGED	12.0x18.0	305x457	15.0x21.0	18.8x24.8	1.5	0.31	14.1x20.3	358x516	ALUMINUM ALLOY	4	31	14.1		
2473-0002	15"x24"	OVAL	HINGED	14.6x23.5	371x597	17.6x26.5	21.6x30.5	1.5	0.31	16.3x25.9	414x658	ALUMINUM ALLOY	4	37	16.8		

*DOES NOT INCLUDE HINGE POCKETS

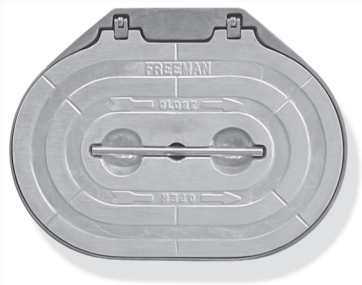
FREEMAN
MARINE EQUIPMENT, INC.

probably from Louisiana if...

You believe that purple, green and gold look good together (and you will even eat things those colors).

2400 SERIES ALUMINUM CAST HATCH COMPRESSION SEAL/STEEL RING

FREEMAN
MARINE EQUIPMENT, INC.



15"X24" Oval hinged with steel ring



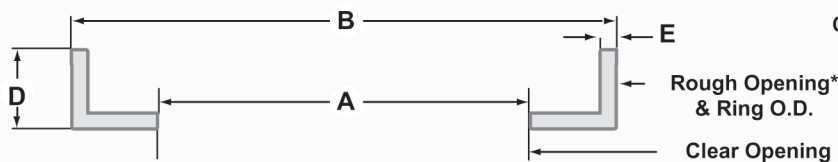
18" Round lift out with steel ring



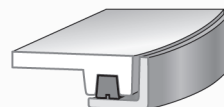
12" Round lift out with steel ring



5"X24" Oval hinged inside view



Compression Seal w/Steel Deck Ring



PART NO.	SIZE	SHAPE	STYLE	DIMENSIONS							MECHANISM			ASSEMBLY WEIGHT	
				CLEAR OPENING		ROUGH OPENING*	B	D	E	OVERALL (inches)	OVERALL (mm)	STD. MATERIAL	DOG QTY.	LBS.	KGS.
				A (inches)	A (mm)										
2402-0003	12"	ROUND	LIFT-OUT	11.9	302	14.5	1.3	0.25	13.9	353	ALUMINUM ALLOY	3	16	7.3	
2403-0003	15"	ROUND	LIFT-OUT	15.0	381	17.6	1.3	0.25	17.0	432	ALUMINUM ALLOY	3	26	11.8	
2404-0003	18"	ROUND	LIFT-OUT	18.0	457	20.5	1.3	0.25	20.0	508	ALUMINUM ALLOY	3	32	14.5	
2406-0003	20"	ROUND	LIFT-OUT	19.8	503	22.4	1.3	0.25	21.9	556	ALUMINUM ALLOY	4	37	16.8	
2408-0003	22"	ROUND	LIFT-OUT	22.0	559	24.6	1.5	0.25	24.0	610	ALUMINUM ALLOY	4	40	18.1	
2411-0003	24"	ROUND	LIFT-OUT	23.3	592	26.5	1.5	0.25	25.8	655	ALUMINUM ALLOY	4	54	24.5	
2415-0003	30"	ROUND	LIFT-OUT	30.0	762	33.3	1.3	0.25	32.5	826	STAINLESS STEEL	4	87	39.5	
2431-0003	12"x18"	OVAL	LIFT-OUT	12.0x18.0	305x457	14.8x19.8	1.3	0.25	14.1x20.3	358x516	ALUMINUM ALLOY	4	30	13.6	
2433-0003	15"x24"	OVAL	LIFT-OUT	14.6x23.4	371x594	17.4x26.5	1.3	0.25	16.3x25.9	414x658	ALUMINUM ALLOY	4	37	16.8	
2441-0003	18"	ROUND	HINGED	18.0	457	20.8	1.3	0.25	20.0	508	ALUMINUM ALLOY	3	38	17.2	
2443-0003	20"	ROUND	HINGED	19.6	498	22.4	1.3	0.25	21.9	556	ALUMINUM ALLOY	4	47	21.3	
2447-0003	24"	ROUND	HINGED	23.4	594	26.5	1.5	0.25	25.8	655	ALUMINUM ALLOY	4	62	28.1	
2452-0003	0"	ROUND	HINGED	30.0	762	33.3	1.5	0.25	32.5	826	STAINLESS STEEL	4	118	53.5	
2471-0003	12"x18"	OVAL	HINGED	12.0x18.0	305x457	14.8x20.6	1.3	0.25	14.1x20.3	358x516	ALUMINUM ALLOY	4	31	14.1	
2473-0003	15"x24"	OVAL	HINGED	14.6x23.5	371x597	17.6x26.5	1.3	0.25	16.3x25.9	414x658	ALUMINUM ALLOY	4	38	17.2	
2481-0103	18"	ROUND	LIFT-OUT	18.0	457	20.5	1.5	0.25	19.9	505	STAINLESS STEEL	3	75	34.0	
2482-0103	24"	ROUND	LIFT-OUT	23.3	592	26.5	1.5	0.25	25.8	655	STAINLESS STEEL	4	110	49.9	
2483-0103	15"x24"	OVAL	LIFT-OUT	14.8x23.8	376x605	17.5x26.5	1.5	0.25	16.9x25.6	429x650	STAINLESS STEEL	4	85	28.6	

*DOES NOT INCLUDE HINGE POCKETS

FREEMAN
MARINE EQUIPMENT, INC.

probably from Louisiana if...

You go to buy a new winter coat (what most people refer to as windbreakers)

2400 SERIES ALUMINUM CAST HATCH KNIFE EDGE SEAL/ALUMINUM RING

FREEMAN
MARINE EQUIPMENT, INC.



22" Square hinged with aluminum ring



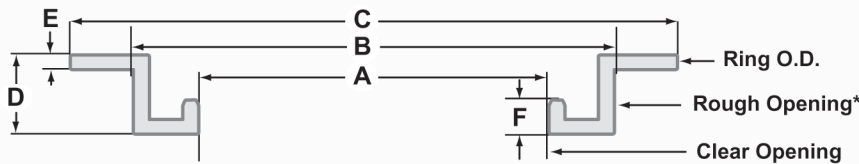
15"X24" Oval lift out with aluminum ring



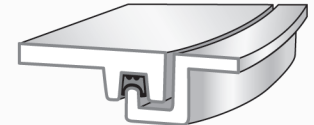
22" Round lift out inside view



18"X24" Rectangular hinged with aluminum ring



Knife Edge Seal w/Aluminum Deck Ring



PART NO.	"SIZE"	SHAPE	STYLE	DIMENSIONS							MECHANISM		ASSEMBLY WEIGHT	
				CLEAR OPENING		ROUGH OPENING*								
				A (inches)	A (mm)	B	C	D	E	F	STD. MATERIAL		DOG QTY.	LBS.
2405-0002	18"	ROUND	LIFT-OUT	18.0	457	20.0	24.0	1.5	0.38	0.8	ALUMINUM ALLOY	3	38	17.2
2407-0002	20"	ROUND	LIFT-OUT	20.0	508	22.0	26.0	1.4	0.38	0.7	ALUMINUM ALLOY	4	44	20.0
2409-0002	22"	ROUND	LIFT-OUT	22.0	559	24.0	28.0	1.4	0.38	0.7	ALUMINUM ALLOY	4	49	22.2
2412-0002	24"	ROUND	LIFT-OUT	24.1	612	26.1	30.6	1.6	0.38	0.6	ALUMINUM ALLOY	4	65	29.5
2421-0002	18"x24"	RECTANGLE	LIFT-OUT	18.0x24.0	457x610	20.5x26.5	24.5x30.5	1.6	0.38	0.7	ALUMINUM ALLOY	4	36	16.3
2422-0002	20"x20"	SQUARE	LIFT-OUT	20.3x20.3	517x517	22.8x22.8	26.8x26.8	1.6	0.38	0.7	ALUMINUM ALLOY	4	43	19.5
2423-0002	22"x22"	SQUARE	LIFT-OUT	22.0x22.0	559x559	24.5x24.5	28.5x28.5	1.6	0.38	0.7	ALUMINUM ALLOY	4	45	20.4
2424-0002	24"x24"	SQUARE	LIFT-OUT	24.5x24.5	622x622	27.0x27.0	31.0x31.0	1.6	0.38	0.7	ALUMINUM ALLOY	4	57	25.9
2426-0006	30"x30"	SQUARE	LIFT-OUT	30.0x30.0	762x762	32.5x32.5	36.5x36.5	1.6	0.25	0.7	STAINLESS STEEL	4	75	31.0
2428-0002	36"x36"	SQUARE	LIFT-OUT	36.0x36.0	914x914	39.3x39.3	42.0x42.0	2.5	0.31	0.9	ALUMINUM ALLOY	8	104	48.0
2434-0002	15"x24"	OVAL	LIFT-OUT	15.2x24.2	386x615	17.2x26.2	21.0x30.0	1.6	0.31	0.6	ALUMINUM ALLOY	4	35	15.9
2435-0002	19"x26"	OVAL	LIFT-OUT	19.2x26.2	488x665	21.2x28.2	25.0x32.0	1.6	0.31	0.6	ALUMINUM ALLOY	4	43	19.5
2442-0002	18"	ROUND	HINGED	18.0	457	20.0	24.0	1.5	0.38	0.8	ALUMINUM ALLOY	3	39	17.7
2444-0002	20"	ROUND	HINGED	20.0	508	22.0	26.0	1.4	0.38	0.7	ALUMINUM ALLOY	4	45	20.4
2448-0002	24"	ROUND	HINGED	24.1	612	26.1	30.6	1.6	0.38	0.6	ALUMINUM ALLOY	4	66	29.9
2461-0002	18"x24"	RECTANGLE	HINGED	18.0x24.0	457x610	20.5x26.5	24.5x30.5	1.6	0.38	0.7	ALUMINUM ALLOY	4	36	16.3
2462-0002	20"x20"	SQUARE	HINGED	20.3x20.3	517x517	22.8x22.8	26.8x26.8	1.6	0.38	0.7	ALUMINUM ALLOY	4	45	20.4
2463-0002	22"x22"	SQUARE	HINGED	22.0x22.0	559x559	24.5x24.5	28.5x28.5	1.6	0.38	0.7	ALUMINUM ALLOY	4	46	20.9
2464-0002	24"x24"	SQUARE	HINGED	24.5x24.5	622x622	27.0x27.0	31.0x31.0	1.6	0.38	0.7	ALUMINUM ALLOY	4	58	26.3
2466-0006	30"x30"	SQUARE	HINGED	30.0x30.0	762x762	32.5x32.5	36.5x36.5	1.6	0.25	0.7	STAINLESS STEEL	4	78	35.4
2468-0002	36"x36"	SQUARE	HINGED	36.0x36.0	914x914	39.3x39.3	42.0x42.0	2.5	0.31	0.9	ALUMINUM ALLOY	8	119	54.0
2474-0002	15"x24"	OVAL	HINGED	15.2x24.2	386x615	17.2x26.2	21.0x30.0	1.6	0.31	0.6	ALUMINUM ALLOY	4	35	15.9
2475-0002	19"x26"	OVAL	HINGED	19.2x26.2	488x665	21.2x28.2	25.0x32.0	1.6	0.31	0.6	ALUMINUM ALLOY	4	44	20.0

*DOES NOT INCLUDE HINGE POCKETS

probably from Louisiana if...

Your last name isn't pronounced the way it's spelled.

2400 SERIES ALUMINUM CAST HATCH KNIFE EDGE SEAL/STEEL RING

FREEMAN
MARINE EQUIPMENT, INC.



22" Square hinged with steel ring



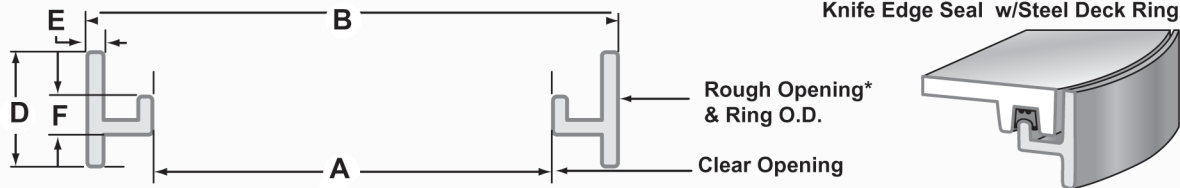
18" Round lift out with steel ring



15"X24" Oval lift out with steel ring



22" Square hinged inside view



PART NO.	"SIZE"	SHAPE	STYLE	DIMENSIONS						MECHANISM		ASSEMBLY WEIGHT	
				CLEAR OPENING		ROUGH OPENING*							
				A (inches)	A (mm)	B				D	E		
2405-0003	18"	ROUND	LIFT-OUT	18.0	457	20.6	2.5	0.31	1.0	ALUMINUM ALLOY	3	36	16.3
2407-0003	20"	ROUND	LIFT-OUT	20.0	508	22.6	2.5	0.31	1.0	ALUMINUM ALLOY	4	41	18.6
2412-0003	24"	ROUND	LIFT-OUT	24.1	612	26.7	2.5	0.31	1.0	ALUMINUM ALLOY	4	59	26.8
2421-0003	18"x24"	RECTANGLE	LIFT-OUT	18.0x24.0	457x610	20.5x26.5	2.5	0.31	0.9	ALUMINUM ALLOY	4	61	27.7
2422-0003	20"x20"	SQUARE	LIFT-OUT	20.3x20.3	517x517	22.8x22.8	2.5	0.31	0.9	ALUMINUM ALLOY	4	74	33.6
2423-0003	22"x22"	SQUARE	LIFT-OUT	22.0x22.0	559x559	24.5x24.5	2.5	0.31	0.9	ALUMINUM ALLOY	4	92	41.7
2424-0003	24"x24"	SQUARE	LIFT-OUT	24.5x24.5	622x622	27.0x27.0	2.5	0.31	0.9	ALUMINUM ALLOY	4	96	43.5
2426-0007	30"x30"	SQUARE	LIFT-OUT	30.0x30.0	762x762	32.5x32.5	2.5	0.31	0.9	STAINLESS STEEL	4	113	51.3
2428-0003	36"x36"	SQUARE	LIFT-OUT	36.0x36.0	914x914	39.3x39.3	2.5	0.31	0.9	ALUMINUM ALLOY	8	134	60.8
2434-0003	15"x24"	OVAL	LIFT-OUT	15.2x24.2	386x615	17.7x26.7	2.5	0.31	0.9	ALUMINUM ALLOY	4	54	24.5
2435-0003	19"x26"	OVAL	LIFT-OUT	19.2x26.2	488x665	21.7x28.7	2.5	0.31	0.9	ALUMINUM ALLOY	4	61	27.7
2442-0003	18"	ROUND	HINGED	18.0	457	20.6	2.5	0.31	1.0	ALUMINUM ALLOY	3	42	19.1
2444-0003	20"	ROUND	HINGED	20.0	508	22.6	2.5	0.31	1.0	ALUMINUM ALLOY	4	48	21.8
2446-0003	22"	ROUND	HINGED	22.0	559	24.6	2.5	0.31	1.0	ALUMINUM ALLOY	4	51	23.1
2448-0003	24"	ROUND	HINGED	24.1	612	26.7	2.5	0.31	1.0	ALUMINUM ALLOY	4	65	29.5
2461-0003	18"x24"	RECTANGLE	HINGED	18.0x24.0	457x610	20.5x26.5	2.5	0.31	0.9	ALUMINUM ALLOY	4	66	29.9
2462-0003	20"x20"	SQUARE	HINGED	20.3x20.3	517x517	22.8x22.8	2.5	0.31	0.9	ALUMINUM ALLOY	4	76	34.5
2464-0003	24"x24"	SQUARE	HINGED	24.5x24.5	622x622	27.0x27.0	2.5	0.31	0.9	ALUMINUM ALLOY	4	97	44.0
2466-0007	30"x30"	SQUARE	HINGED	30.0x30.0	762x762	32.5x32.5	2.5	0.31	0.9	STAINLESS STEEL	4	114	51.7
2468-0003	36"x36"	SQUARE	HINGED	36.0x36.0	914x914	39.3x39.3	2.5	0.31	0.9	ALUMINUM ALLOY	8	149	67.6
2474-0003	15"x24"	OVAL	HINGED	15.2x24.2	386x615	17.7x26.7	2.5	0.31	0.9	ALUMINUM ALLOY	4	60	27.2
2475-0003	19"x26"	OVAL	HINGED	19.2x26.2	488x665	21.7x28.7	2.5	0.31	0.9	ALUMINUM ALLOY	4	67	30.0

*DOES NOT INCLUDE HINGE POCKETS

probably from Louisiana if...

You know what a nutria rat is but you still pick it to represent your baseball team. (Geaux Zephyrs)



EASY ORDER Form

Item	Qty	Clear Opening w x h	Sealing Performance	Opening Style	Panel Type	Frame Material	Install Method	Window Size	Door Handing	Insulation	Door Hardware	Other
		Cutout Opening w x h				Corner Type					Keying	
			Weather Tight Watertight	Single-1100 Quick Acting-1400 Dutch-1500 French-1600 Slider-1700	0.080 0.160 0.190 0.250	Aluminum Steel Stainless Radius Mitered	Bolt In Weld In Clamp In	10 x 16 15 x 20 15 x 24 Top Half Full 7" Rd. 12" Rd.	RH LH RH Active LH Active	Rigid Foam Acoustic FireMaster	Lockset Passage Key Alike Key Different	Painted Bare Metal Pantograph
OPTIONS												
OPTIONS												
OPTIONS												
OPTIONS												
OPTIONS												

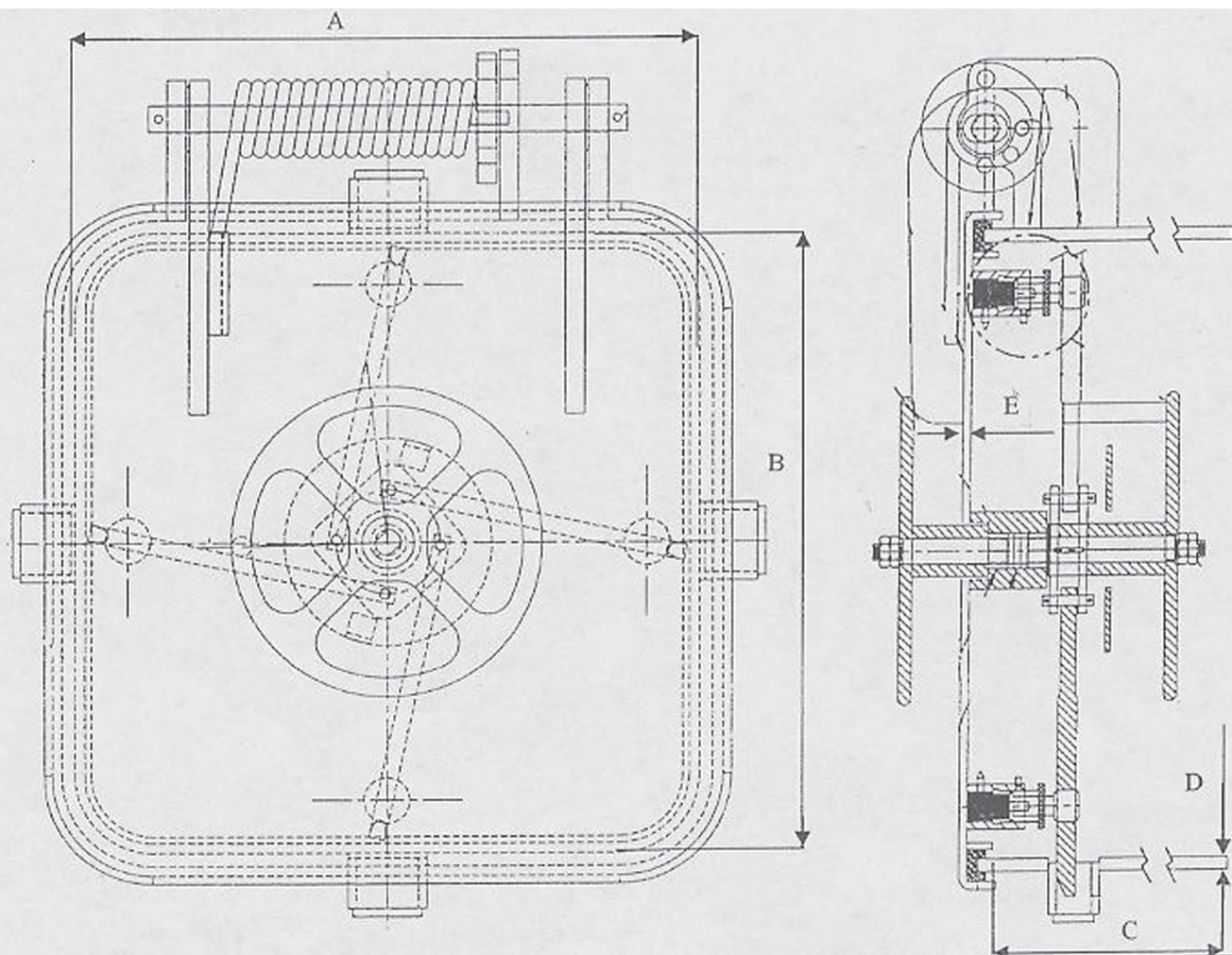
From: Name: _____ Project: _____

Company: _____ Phone: _____

Address: _____ Fax: _____

City, State: _____ Email: _____

Country: _____



PIECE NO.	PART	PART NUMBER	MATERIAL
1	COVER		MILD STEEL
2	COAMING		MILD STEEL
3	GASKET		NEOPRENE*
4	SPRING	24025	STAINLESS STEEL
5	HINGE PIN	30400	STAINLESS STEEL
6	COTTER PIN	24029	STAINLESS STEEL
7	HAND WHEEL	30526	MILD STEEL

ABS CERTIFIED PDA # 01-HS211271B

MODEL NO.	PART NO.	A.	B.	C.	D.	E.
DF-615-2424	24x24QA4S	24	24	24	1/2"	5/16"
DF-615-3030	30x30QA4S	30	30	24	1/2"	5/16"
DF-615-3636	36x36QA4S	36	36	24	1/2"	5/16"

QUICK ACTING SQUARE HATCH

*Other gasket materials available.

The specifications and details described by drawings or text in this literature are subject to change without notice.



NABRICO MARINE PRODUCTS

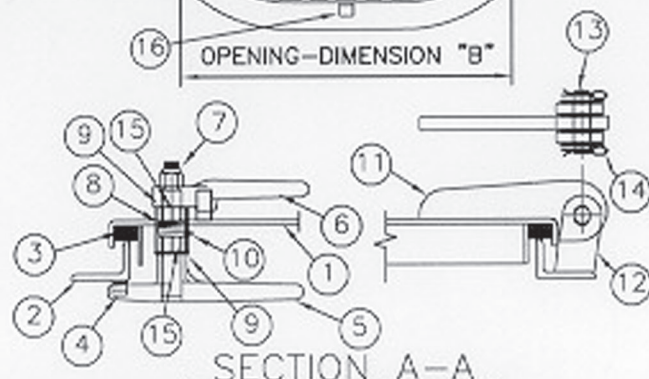
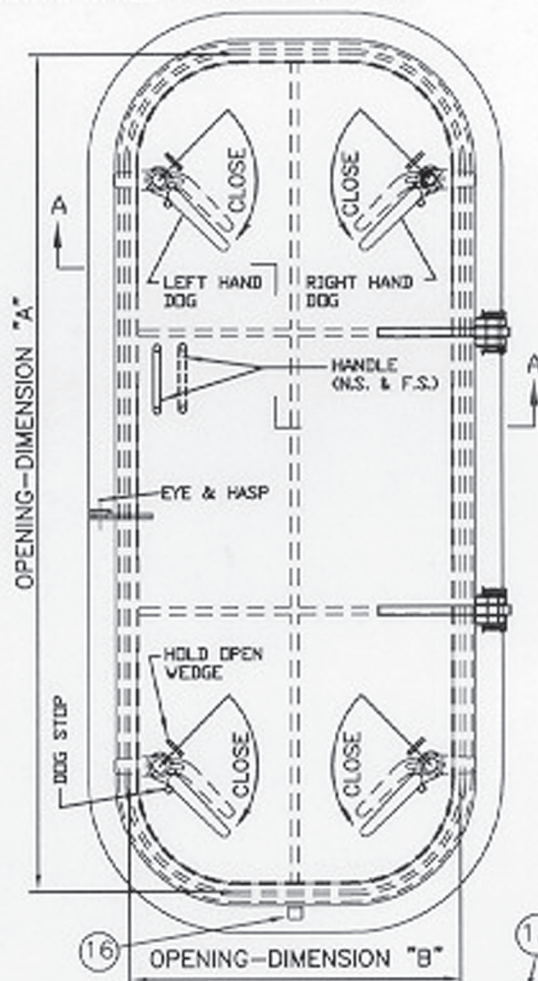
PIECE NO.	PART
1	DOOR PANEL
2	COAMING
3	GASKET
4	WEDGE
5	DOG-RIGHT OR LEFT HAND
6	DOG HANDLE
7	HEX NUT
8	PACKING
9	SHIMS
10	GREASE FITTING
11	HINGE BLADE
12	HINGE PAD
13	HINGE PIN
14	COTTER
15	BUSHING
16	CENTERING LUG

WHEN ORDERING SPECIFY:

RIGHT HAND OR LEFT HAND DOOR
NUMBER OF DOGS



ORIENTATION (RIGHT HAND/LEFT HAND)



SECTION A-A

MODEL NO.	MFGR PART NO.	A	B
DF-605-2460	24X60M4DRH	24"	60"
DF-605-2460	24X60M4DLH	24"	60"
DF-605-2472	24X72M4DRH	24"	72"
DF-605-2472	24X72M4DLH	24"	72"
DF-605-2866	28X66M4DRH	28"	66"
DF-605-2866	28X66M4DLH	28"	66"
DF-605-2872	28X72M4DRH	28"	72"
DF-605-2872	28X72M4DLH	28"	72"
DF-605-3054	30X54M4DRH	30"	54"

MODEL NO.	MFGR PART NO.	A	B
DF-605-3054	30X54M4DLH	30"	54"
DF-605-3060	30X60M4DRH	30"	60"
DF-605-3060	30X60M4DLH	30"	60"
DF-605-3072	30X72M4DRH	30"	72"
DF-605-3072	30X72M4DLH	30"	72"
DF-605-3666	36X66M4DRH	36"	66"
DF-605-3666	36X66M4DLH	36"	66"
DF-605-3672	36X72M4DRH	36"	72"
DF-605-3672	36X72M4DLH	36"	72"

ABS CERTIFICATION NO. 01-HS195940-PDA WATERTIGHT DOORS-4 DOG

The specifications and details described by drawings or text in this literature are subject to change without notice.



NABRICO MARINE PRODUCTS

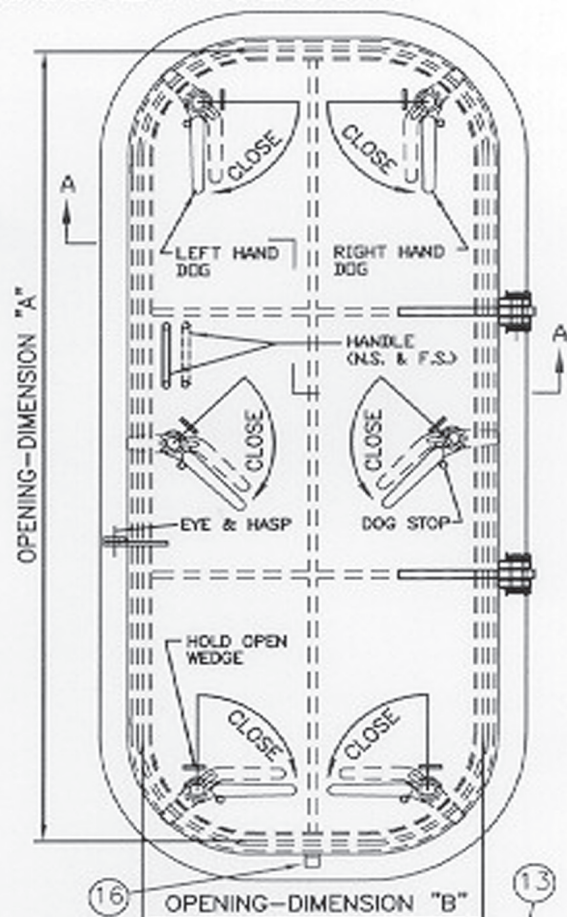
PIECE NO.	PART
1	DOOR PANEL
2	COAMING
3	GASKET
4	WEDGE
5	DOG-RIGHT OR LEFT HAND
6	DOG HANDLE
7	HEX NUT
8	PACKING
9	SHIMS
10	GREASE FITTING
11	HINGE BLADE
12	HINGE PAD
13	HINGE PIN
14	COTTER
15	BUSHING
16	CENTERING LUG

WHEN ORDERING SPECIFY:

RIGHT HAND OR LEFT HAND DOOR
NUMBER OF DOGS



ORIENTATION (RIGHT HAND/LEFT HAND)

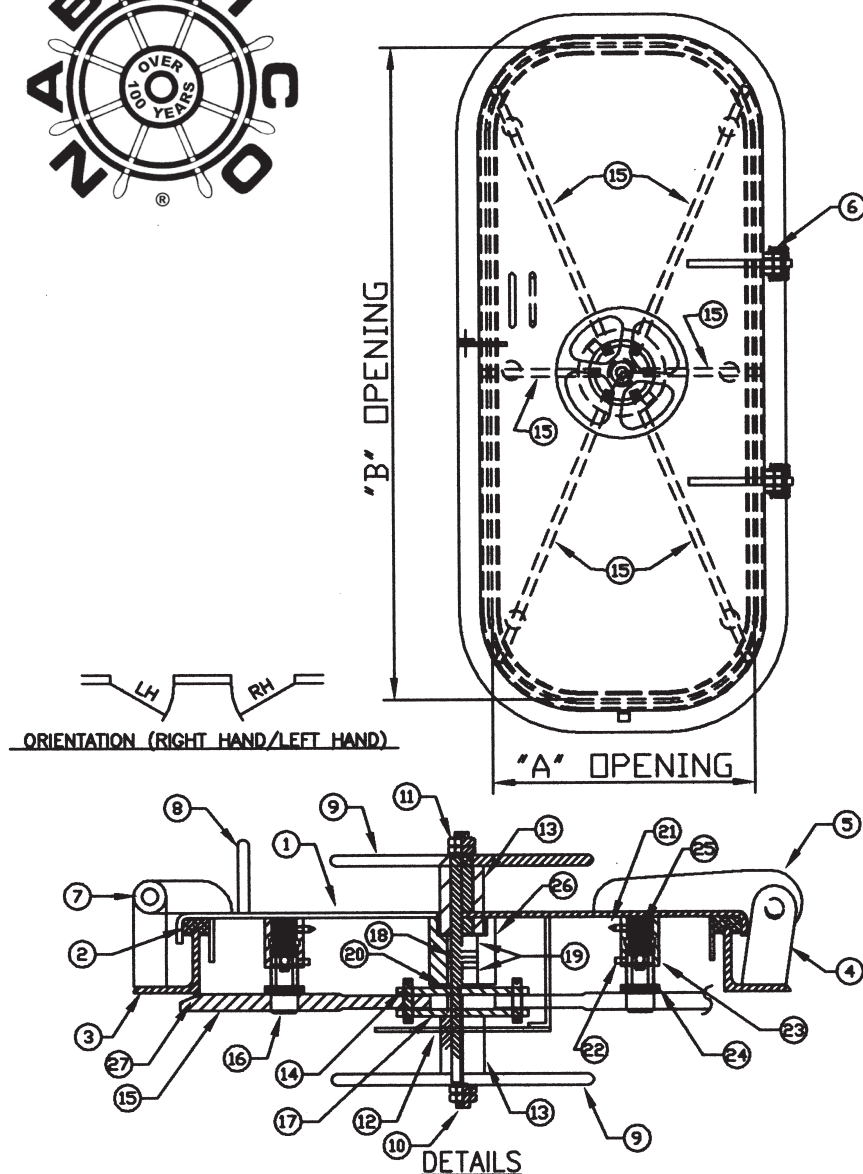


SECTION A-A

MODEL NO.	MFG PART NO.	A	B	MODEL NO.	MFG PART NO.	A	B
DF-600-2460	24X60M6DRH	24"	60"	DF-600-3054	30X54M6DLH	30"	54"
DF-600-2460	24X60M6DLH	24"	60"	DF-600-3060	30X60M6DRH	30"	60"
DF-600-2472	24X72M6DRH	24"	72"	DF-600-3060	30X60M6DLH	30"	60"
DF-600-2472	24X72M6DLH	24"	72"	DF-600-3072	30X72M6DRH	30"	72"
DF-600-2866	28X66M6DRH	28"	66"	DF-600-3072	30X72M6DLH	30"	72"
DF-600-2866	28X66M6DLH	28"	66"	DF-600-3666	36X66M6DRH	36"	66"
DF-600-2872	28X72M6DRH	28"	72"	DF-600-3666	36X66M6DLH	36"	66"
DF-600-2872	28X72M6DLH	28"	72"	DF-600-3672	36X72M6DRH	36"	72"
DF-600-3054	30X54M6DRH	30"	54"	DF-600-3672	36X72M6DLH	36"	72"

ABS CERTIFICATION NO. 01-HS195940-PDA WATERTIGHT DOORS-6 DOG

The specifications and details described by drawings or text in this literature are subject to change without notice.



MARK	ITEM	MATERIAL
1	DOOR PANEL	STEEL
2	GASKET	NEOPRENE
3	FRAME	STEEL
4	HINGE PAD	STEEL
5	HINGE BLADE	STEEL
6	HINGE PIN	STEEL
7	EYE & HASP	STEEL
8	HANDLE	STEEL
9	HANDWHEEL	STEEL
10	CENTER SHAFT	STEEL
11	JAM NUT	BRASS
12	COVER PLATE	STEEL
13	SLEEVE	STEEL
14	PIN	STEEL
15	DOG	STEEL
16	SWIVEL GUIDE	BRONZE
17	ROTATING BLOCK	STEEL
18	PACKING	GRAPHITE
19	BUSHING	NYLON
20	SHIMS	STEEL
21	GREASE FITTING	STAINLESS
22	SET SCREW	STAINLESS
23	SWIVEL HOUSING	STEEL
24	ADJUSTMENT FITTING	STEEL
25	SPRING	STAINLESS
26	CENTER HOUSING	STEEL
27	WEDGE	STEEL

MODEL NO.	MFGR PART NO.	A	B
DF-610-2460	24X60Q6DRH	24"	60"
DF-610-2460	24X60Q6DLH	24"	60"
DF-610-2472	24X72Q6DRH	24"	72"
DF-610-2472	24X72Q6DLH	24"	72"
DF-610-2866	28X66Q6DRH	28"	66"
DF-610-2866	28X66Q6DLH	28"	66"
DF-610-2872	28X72Q6DRH	28"	72"
DF-610-2872	28X72Q6DLH	28"	72"
DF-610-3054	30X54Q6DRH	30"	54"

MODEL NO.	MFGR PART NO.	A	B
DF-610-3054	30X54Q6DLH	30"	54"
DF-610-3060	30X60Q6DRH	30"	60"
DF-610-3060	30X60Q6DLH	30"	60"
DF-610-3072	30X72Q6DRH	30"	72"
DF-610-3072	30X72Q6DLH	30"	72"
DF-610-3666	36X66Q6DRH	36"	66"
DF-610-3666	36X66Q6DLH	36"	66"
DF-610-3672	36X72Q6DRH	36"	72"
DF-610-3672	36X72Q6DLH	36"	72"

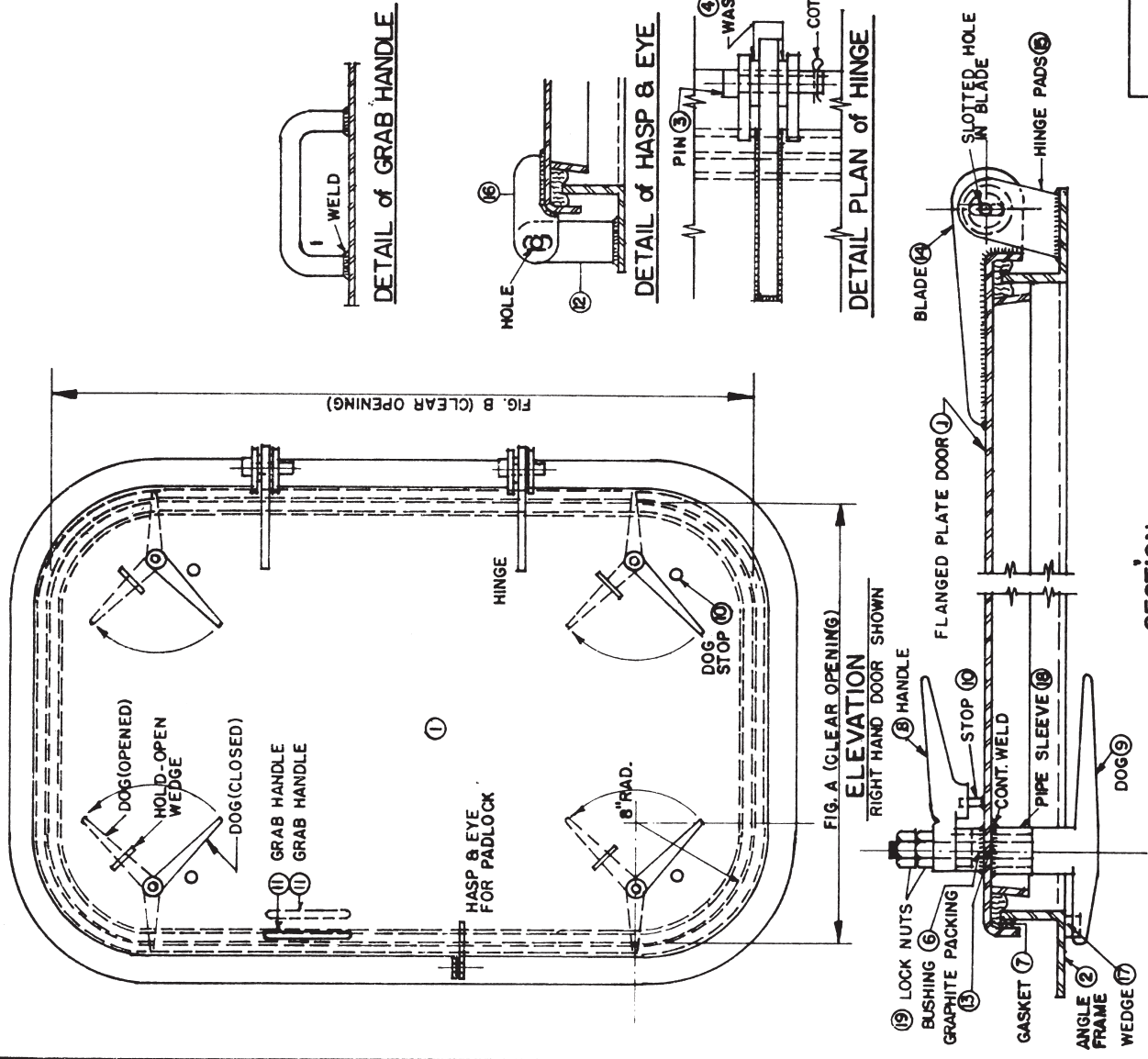
ABS CERTIFICATION NO. 01-HS211271A-PDA

QUICK ACTING 6 DOG DOOR

The specifications and details described by drawings or text in this literature are subject to change without notice.

probably from Louisiana if...
You have a ditch on at least one side of your property

SCHEDULE OF MATERIALS		
PC.NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	BRASS	
4	BRASS	
5	BRASS	
6	DELTRIN	
7	NEOPRENE	
8	FRG. ST.	
9	FRG. STL.	
10	MILD STEEL	
11	MILD STEEL	
12	MILD STEEL	
13	GRAPHITE	
14	MILD STEEL	
15	MILD STEEL	
16	MILD STEEL	
17	MILD STEEL	
18	MILD STEEL	
19	MILD STEEL	

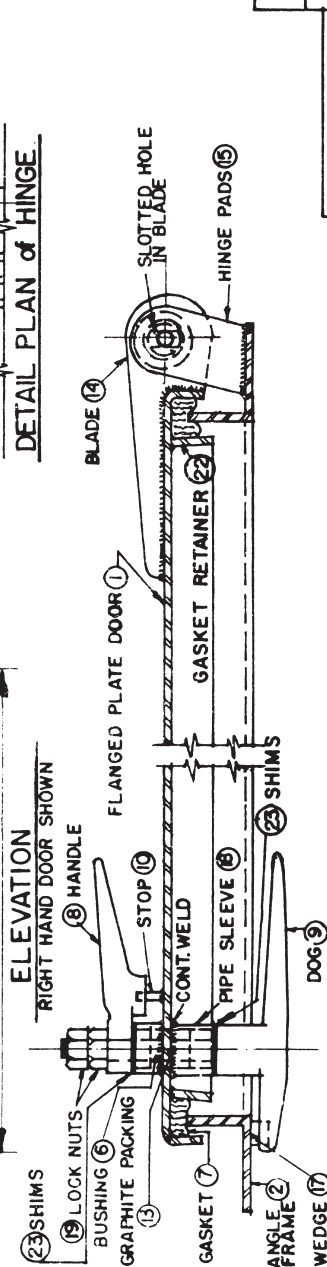
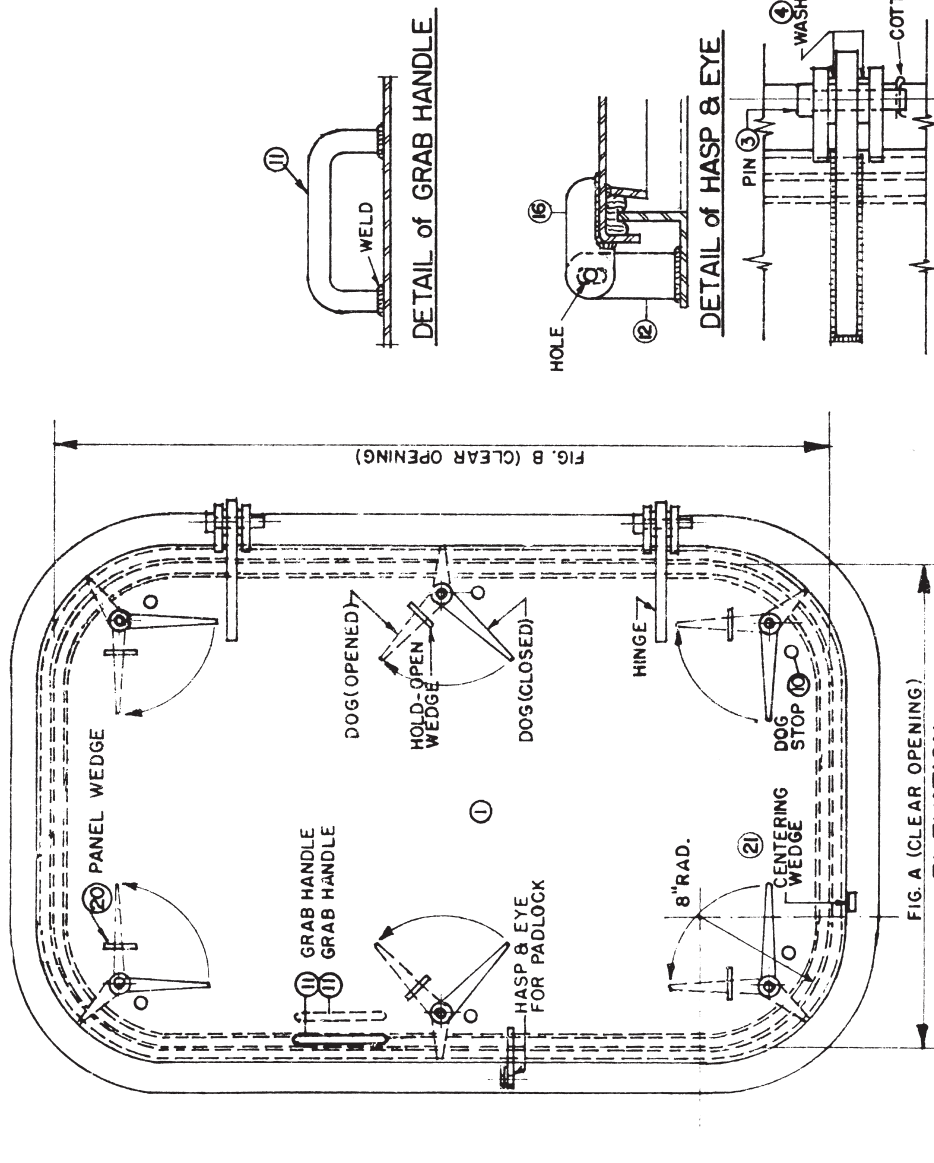


BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
WATERTIGHT DOOR WITH FOUR DOGS
DRAWING NO. 101



SECTION

SCHEDULE OF MATERIALS		
PC. NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	BRASS	
4	BRASS	
5	BRASS	
6	DELTRIN	
7	NEOPRENE	
8	FRG. STL.	
9	FRG. STL.	
10	MILD STEEL	
11	MILD STEEL	
12	MILD STEEL	
13	GRAPHITE	
14	MILD STEEL	
15	MILD STEEL	
16	MILD STEEL	
17	MILD STEEL	
18	MILD STEEL	
19	MILD STEEL	
20	MILD STEEL	
21	MILD STEEL	
22	MILD STEEL	
23	BRASS	



BYRNE, RICE & TURNER, INC.
 NEW ORLEANS, LOUISIANA
 WATERTIGHT DOOR WITH SIX (6) DOGS
 DRAWING NO. 102



SECTION

You have spent a summer afternoon on the Lake Pontchartrain seawall catching blue crabs.

SCHEDULE OF MATERIALS	
PC. NO.	MATERIAL
1	MILD STEEL
2	MILD STEEL
3	BRASS
4	BRASS
5	BRASS
6	MILD STEEL
7	NEOPRENE
8	MILD STEEL
9	MILD STEEL
10	MILD STEEL
11	MILD STEEL
12	MILD STEEL
13	GRAPHITE
14	MILD STEEL
15	MILD STEEL
16	MILD STEEL
17	MILD STEEL
18	MILD STEEL
19	MILD STEEL
20	MILD STEEL
21	DELFIN
22	BRASS
23	MILD STEEL
24	MILD STEEL
25	MILD STEEL
26	BRASS
27	MILD STEEL
28	MILD STEEL
29	MILD STEEL
30	C.F. STEEL
31	MILD STEEL

FIG. 'A'-CLEAR OPENING

DETAIL of GRAB HANDLE

DETAIL of HASP & EYE

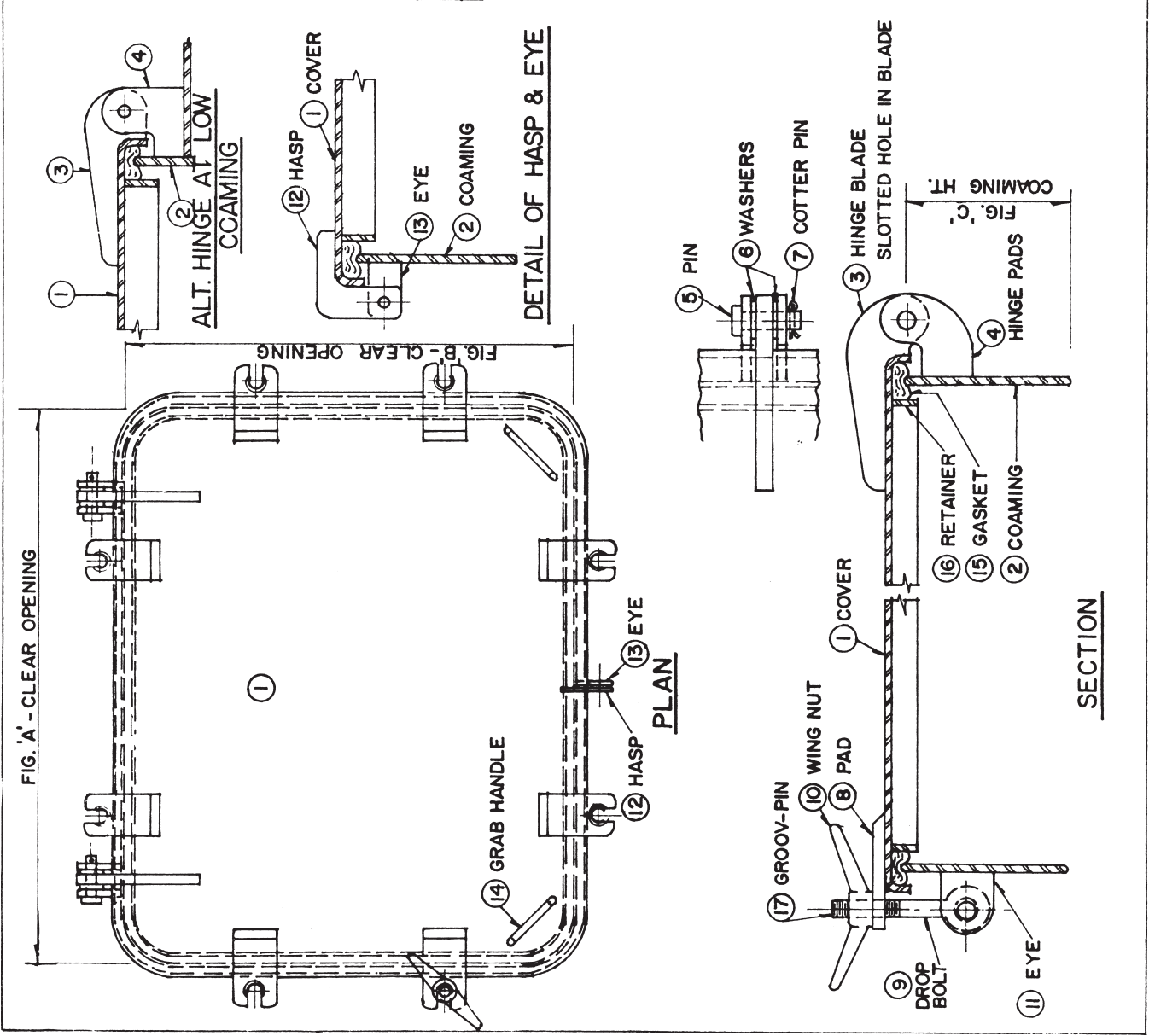
DETAIL PLAN of HINGE

ELEVATION

SECTION

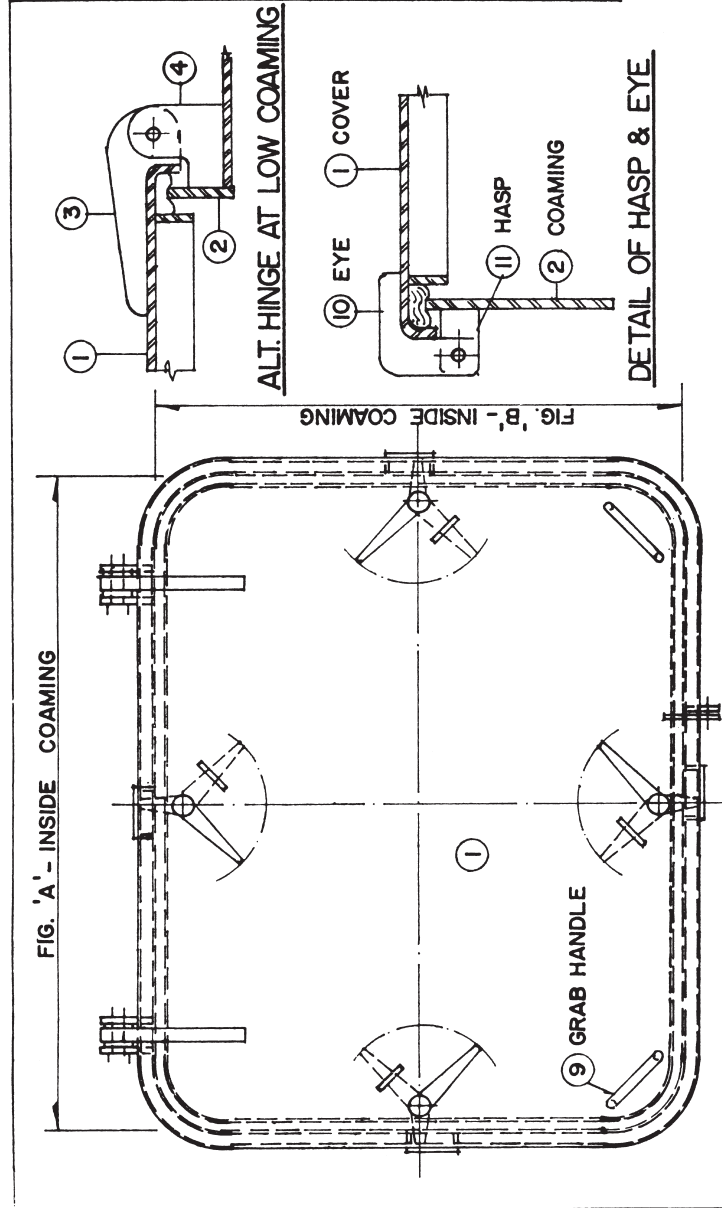
BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
QUICK ACTING watertight door
DRAWING NO. 104

SCHEDULE OF MATERIALS		
PC. NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	MILD STEEL	
4	MILD STEEL	
5	BRASS	
6	BRASS	
7	BRASS	
8	MILD STEEL	
9	BRONZE	
10	BRONZE	
11	MILD STEEL	
12	MILD STEEL	
13	MILD STEEL	
14	MILD STEEL	
15	NEOPRENE	
16	MILD STEEL	
17	STAINLESS	
18	BRASS	

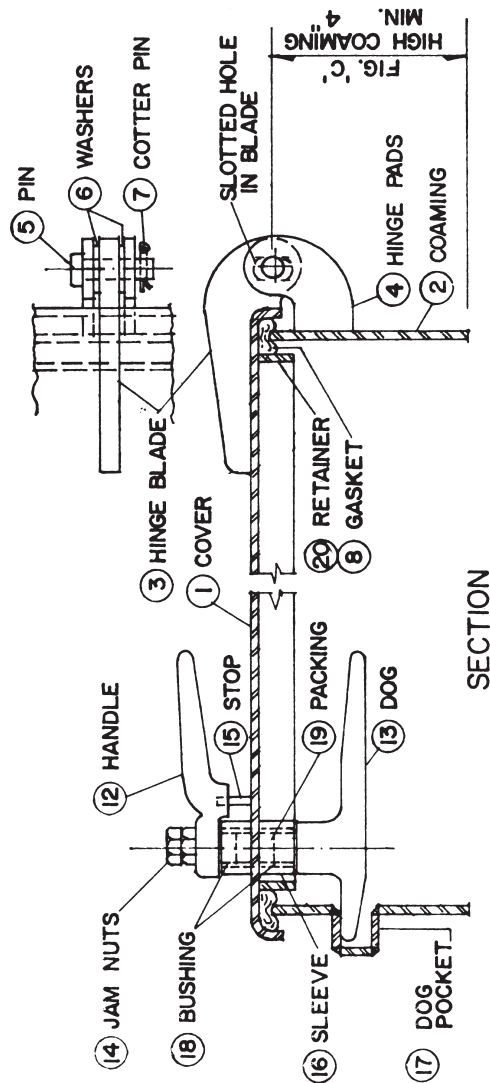


BYRNE, RICE & TURNER
NEW ORLEANS, LOUISIANA
WATERTIGHT HATCH WITH DROP BOLTS
DRAWING NO. 200

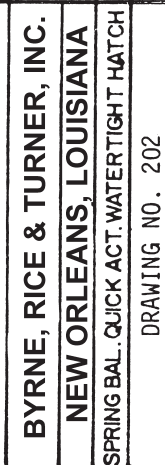
SCHEDULE OF MATERIALS		
PC. NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	MILD STEEL	
4	MILD STEEL	
5	BRASS	
6	BRASS	
7	BRASS	
8	NEOPRENE	
9	STEEL	
10	MILD STEEL	
11	MILD STEEL	
12	FRG. STEEL	
13	FRG. STEEL	
14	STEEL	
15	STEEL	
16	STEEL	
17	STEEL	
18	DELFIN	
19	GRAPHITE	
20	MILD STEEL	



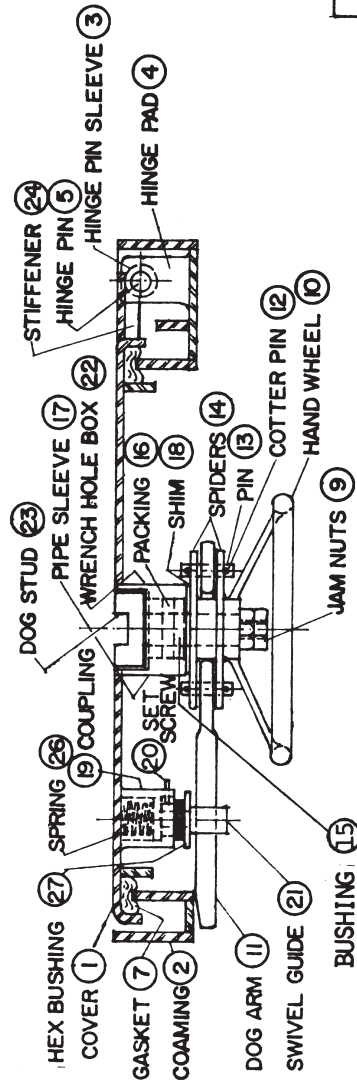
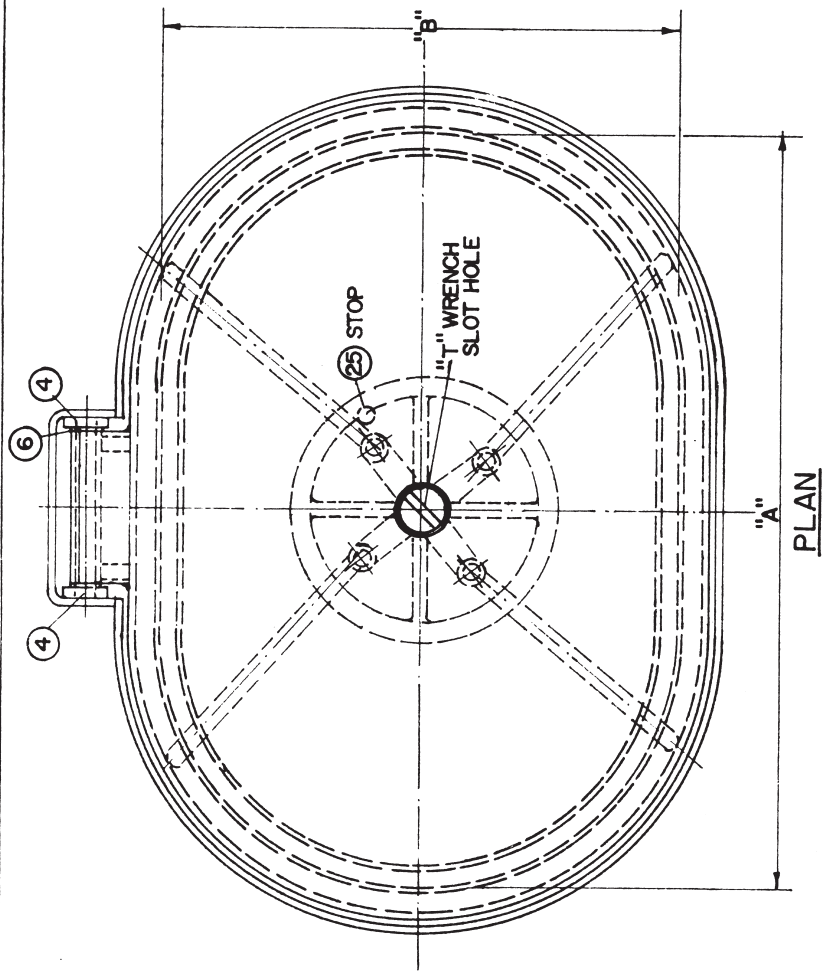
PLAN



BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
WATERTIGHT HATCH
DRAWING NO. 201

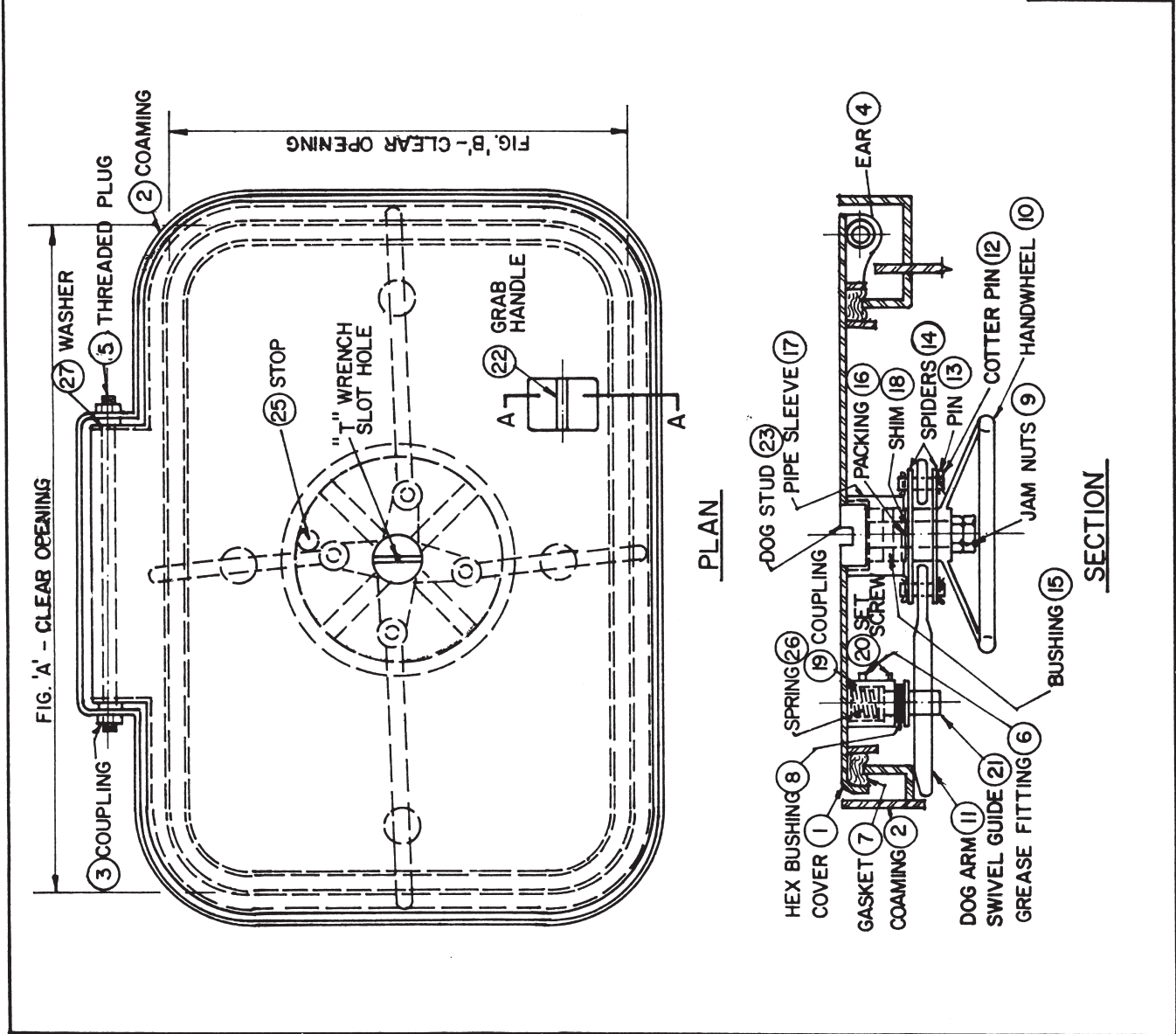


SCHEDULE OF MATERIALS		
PC. NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	MILD STEEL	
4	MILD STEEL	
5	COLD FINISH	
6	BRASS	
7	NEOPRENE	
8	MILD STEEL	
9	MILD STEEL	
10	MILD STEEL	
11	MILD STEEL	
12	BRASS	
13	BRASS	
14	MILD STEEL	
15	DELRI	
16	GRAPHITE	
17	MILD STEEL	
18	BRASS	
19	MILD STEEL	
20	MILD STEEL	
21	BRASS	
22	MILD STEEL	
23	BRASS	
24	MILD STEEL	
25	MILD STEEL	
26	SPRING STEEL	
27	MILD STEEL	



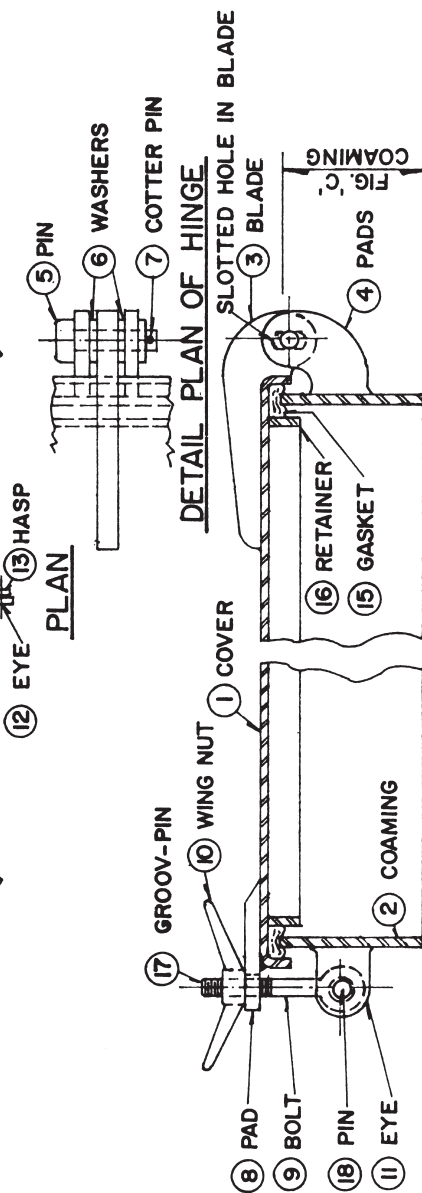
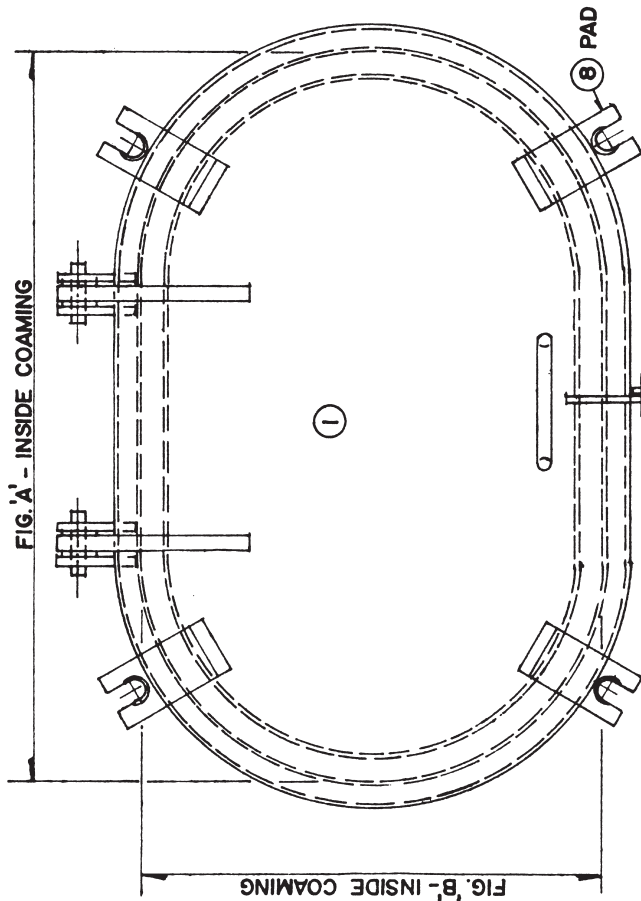
BYRNE, RICE & TURNER, INC.
 NEW ORLEANS, LOUISIANA
 QUICK ACTING OVAL WATERTIGHT HATCH
 DRAWING NO. 204

SCHEDULE OF MATERIALS		
PC.NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	MILD STEEL	
4	MILD STEEL	
5	MILD STEEL	
6	PLATED	
7	NEOPRENE	
8	MILD STEEL	
9	MILD STEEL	
10	ALUMINIUM	
11	COLD FINISH	
12	STAINLESS	
13	BRASS	
14	MILD STEEL	
15	DELIN	
16	GRAPHITE	
17	COLD FINISH	
18	STAINLESS	
19	MILD STEEL	
20	MILD STEEL	
21	BRASS	
22	MILD STEEL	
23	BRASS	
24	MILD STEEL	
25	MILD STEEL	
26	SPRING STEEL	
27	STAINLESS	

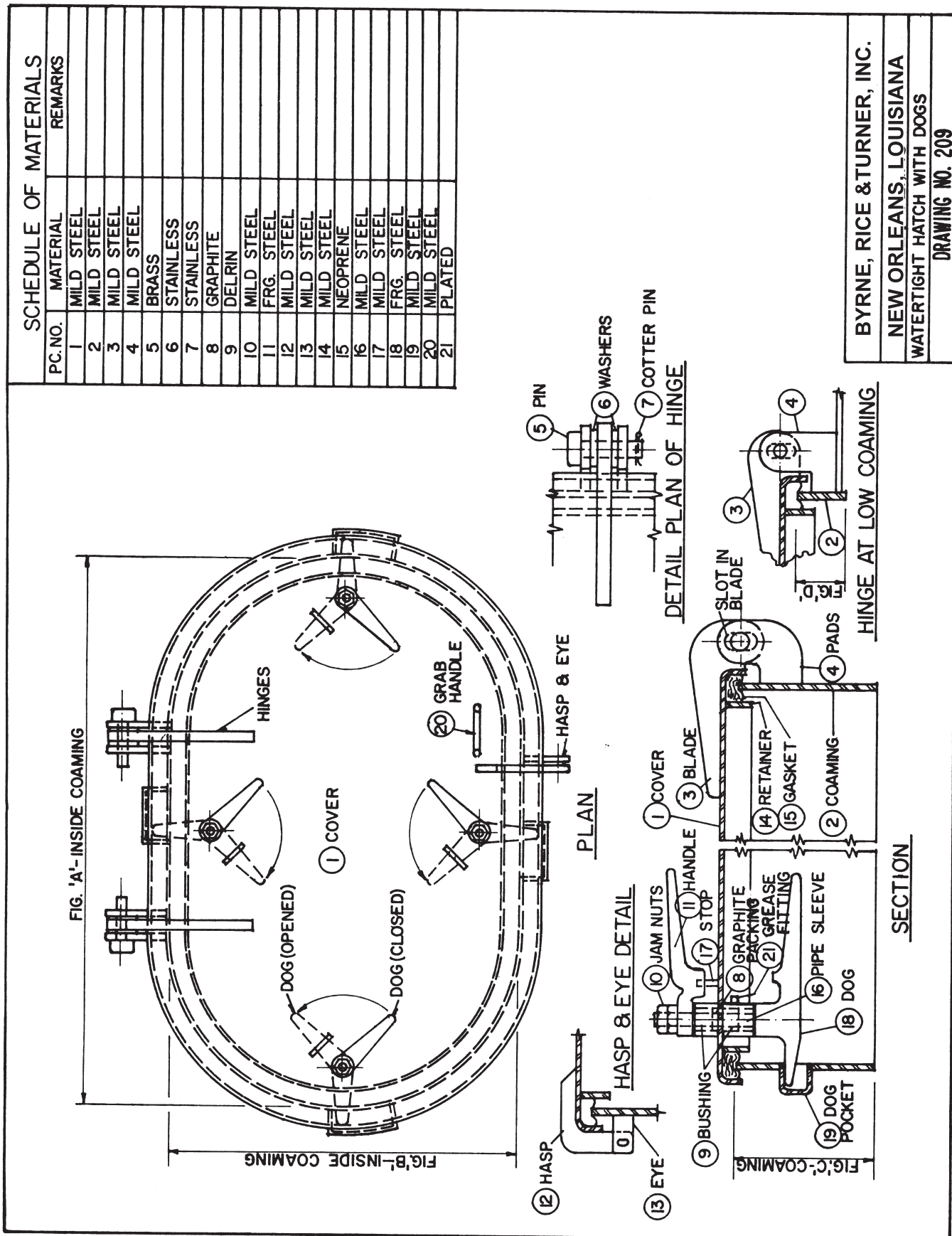


BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
QUICK ACTING WATERTIGHT FLUSH HATCH
DRAWING NO. 205

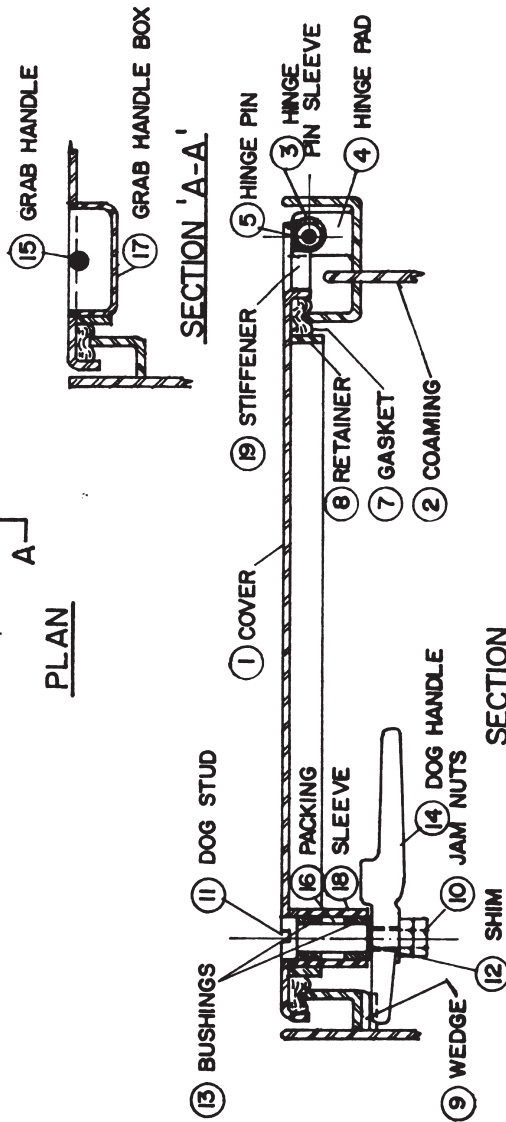
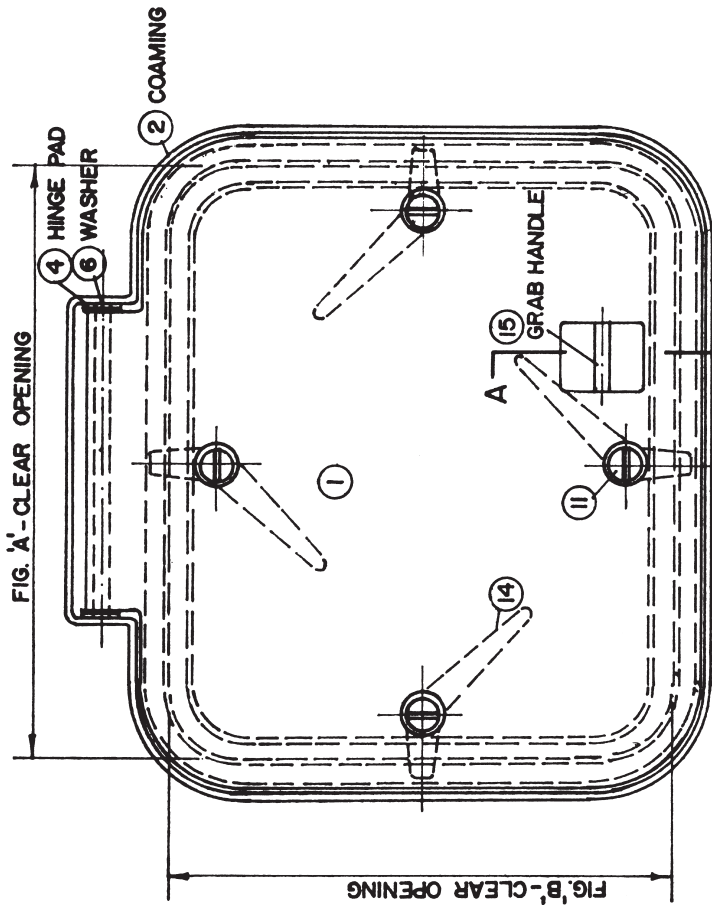
SCHEDULE OF MATERIALS		
PC. NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	MILD STEEL	
4	MILD STEEL	
5	BRASS	
6	BRASS	
7	BRASS	
8	MILD STEEL	
9	MANGANESE BRONZE	
10	MANGANESE BRONZE	
11	STEEL	
12	MILD STEEL	
13	MILD STEEL	
14	STEEL	
15	NEOPRENE	
16	MILD STEEL	
17	STAINLESS	
18	BRASS	



BYRNE, RICE & TURNER, INC.
 NEW ORLEANS, LOUISIANA
 WATERTIGHT HATCH WITH DROP BOLTS
 DRAWING NO. 208

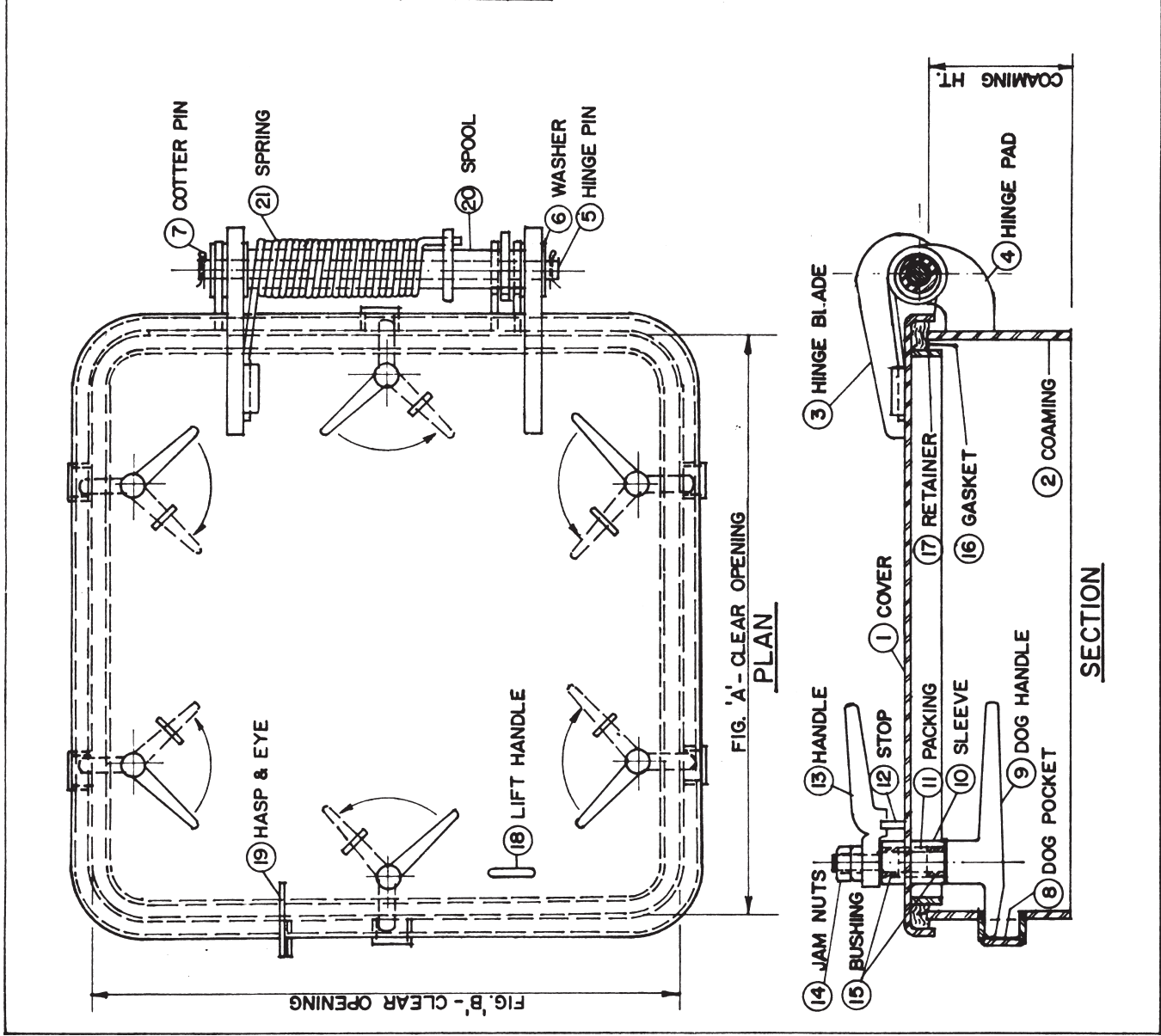


SCHEDULE OF MATERIALS		
PC.NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	MILD STEEL	
4	MILD STEEL	
5	COLD FINISH	
6	BRASS	
7	NEOPRENE	
8	MILD STEEL	
9	MILD STEEL	
10	STEEL	
11	MANGANESE BRONZE	
12	BRASS	
13	DELTRIN	
14	MILD STEEL	
15	MILD STEEL	
16	GRAPHITE	
17	MILD STEEL	
18	MILD STEEL	
19	MILD STEEL	



BYRNE, RICE & TURNER, INC.
 NEW ORLEANS, LOUISIANA
 WATERTIGHT FLUSH HATCH
 DRAWING NO. 211

SCHEDULE OF MATERIALS		
PC.NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	MILD STEEL	
4	MILD STEEL	
5	COLD FINISH	
6	BRASS	
7	BRASS	
8	MILD STEEL	
9	FRG. STEEL	
10	MILD STEEL	
11	GRAPHITE	
12	MILD STEEL	
13	FRG. STEEL	
14	STEEL	
15	DELFIN	
16	NEOPRENE	
17	MILD STEEL	
18	MILD STEEL	
19	MILD STEEL	
20	MILD STEEL	
21	SPRING STEEL	



BYRNE, RICE & TURNER, INC.
 NEW ORLEANS, LOUISIANA
 WATERTIGHT HATCH — SPRING BALANCED
 DRAWING NO. 214

HINGE PLATE REMOVED
TO SHOW SPRING ASSY.

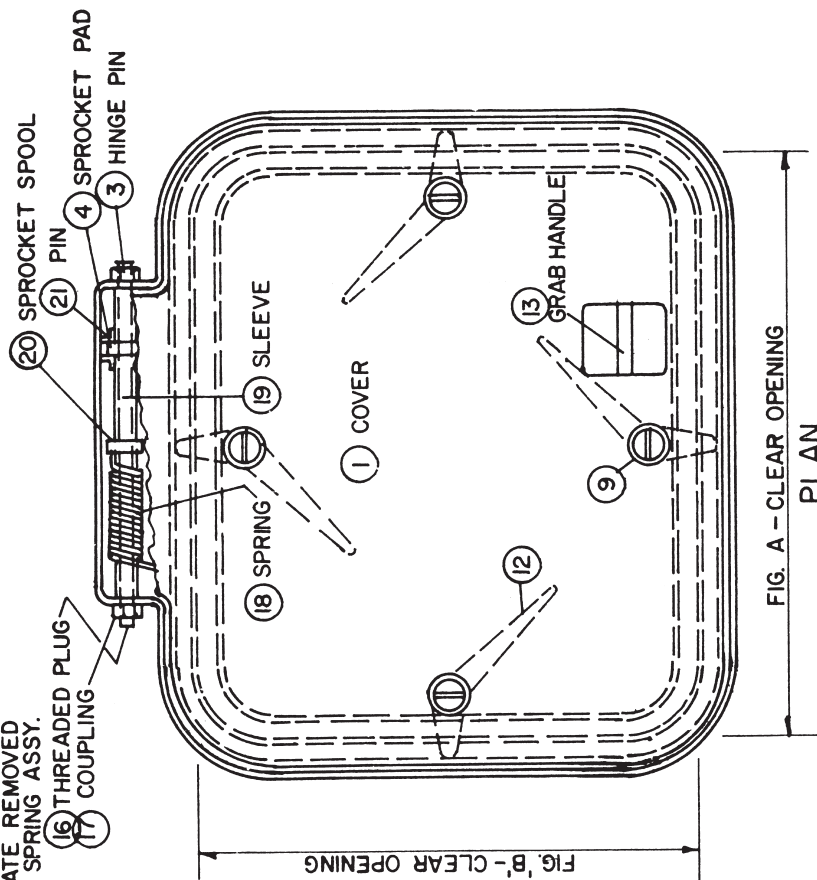
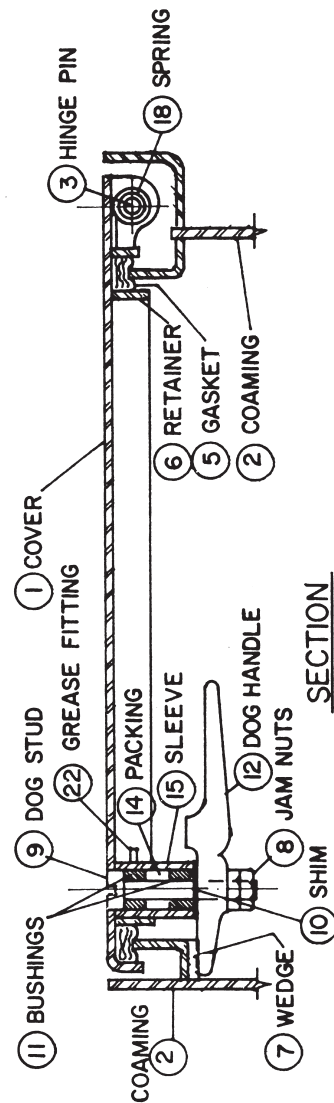


FIG. A - CLEAR OPENING

PLAN



NOTES:

1. COVER OPENS TO APPROX. 100 DEG.

SCHEDULE OF MATERIALS

PC.NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	COLD FINISH	
4	MILD STEEL	
5	NEOPRENE	
6	MILD STEEL	
7	FORGED STEEL	
8	STEEL	
9	BRASS	
10	STAINLESS	
11	DELIRIN	
12	MANGANESE BRONZE	
13	MILD STEEL	
14	GRAPHITE	
15	MILD STEEL	
16	MILD STEEL	
17	COLD FINISH	
18	SPRING STEEL	
19	MILD STEEL	
20	MILD STEEL	
21	MILD STEEL	
22	PLATED	

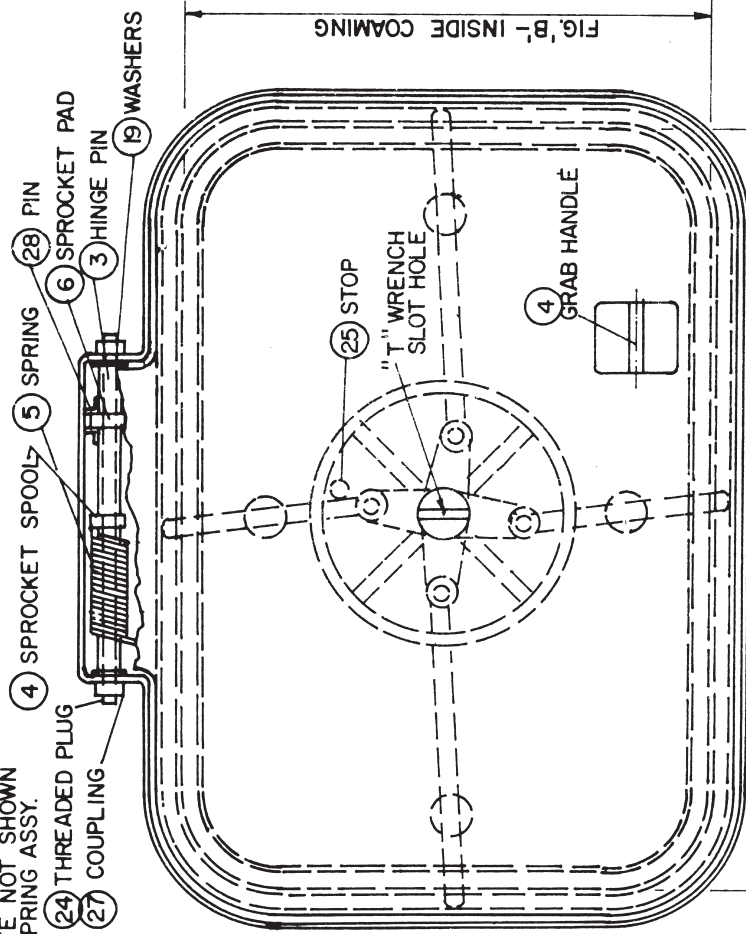
BYRNE, RICE & TURNER, INC.

NEW ORLEANS, LOUISIANA

WATERTIGHT FLUSH HATCH WITH SPRING
BALANCED COVER & RECESSED SPRING

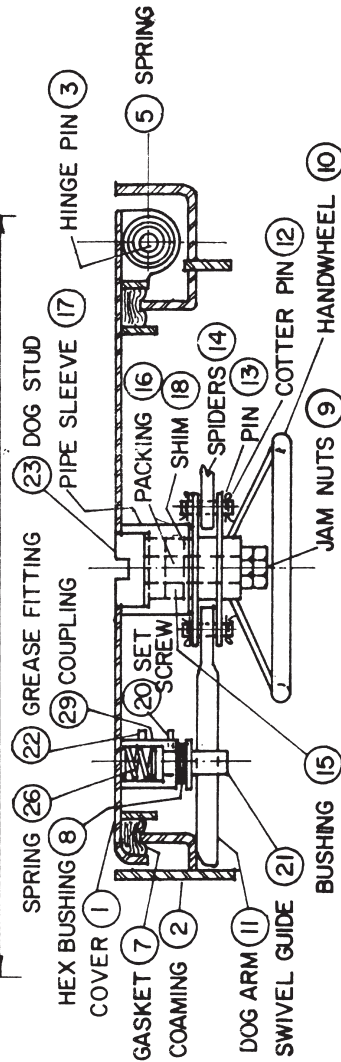
DRAWING NO. 217

COVER PLATE NOT SHOWN
TO SHOW SPRING ASSY.



PLAN

FIG. 'A' - INSIDE COAMING



SECTION

SCHEDULE OF MATERIALS

PC.NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	COLD FINISH	
4	MILD STEEL	
5	SPRING STL.	
6	MILD STEEL	
7	NEOPRENE	
8	MILD STEEL	
9	STEEL	
10	ALUMINIUM	
11	COLD FINISH	
12	STAINLESS	
13	BRASS	
14	MILD STEEL	
15	DEL RIN	
16	GRAPHITE	
17	COLD FINISH	
18	STAINLESS	
19	STAINLESS	
20	MILD STEEL	
21	BRASS	
22	PLATED	
23	BRASS	
24	MILD STEEL	
25	MILD STEEL	
26	SPRING STL.	
27	MILD STEEL	
28	MILD STEEL	
29	MILD STEEL	

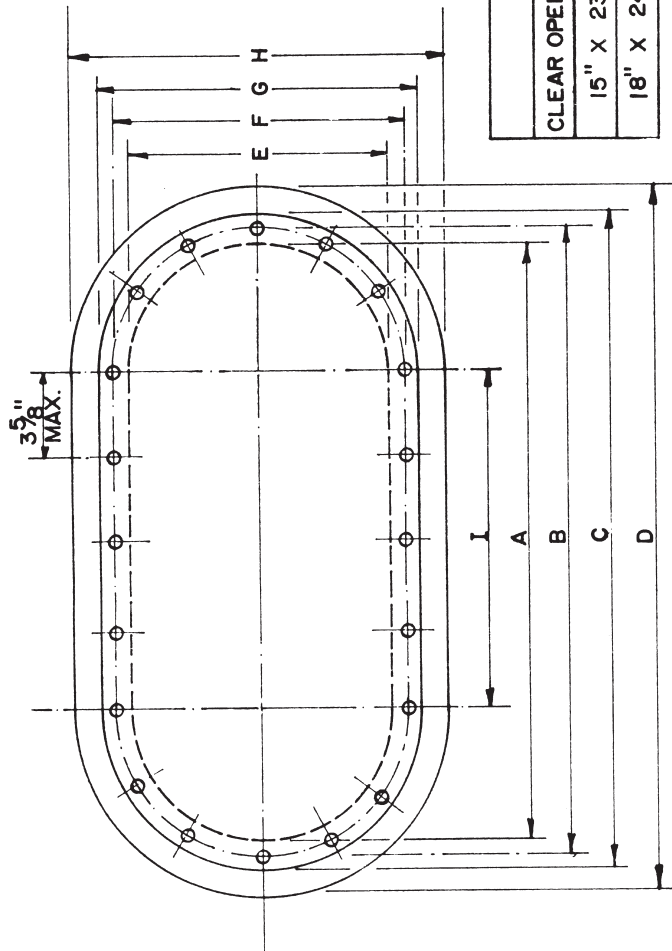
BYRNE, RICE & TURNER, INC.

NEW ORLEANS, LOUISIANA

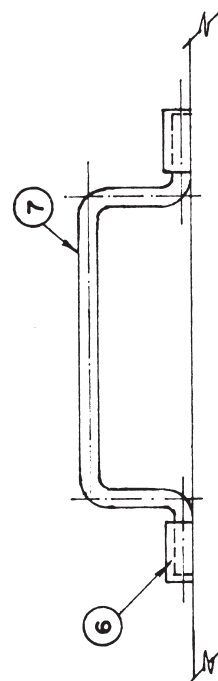
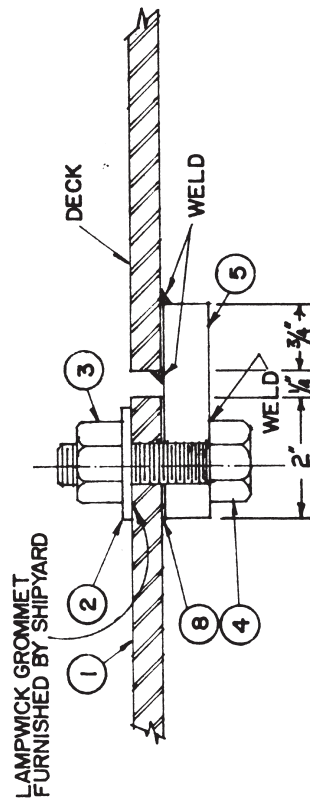
QUICK ACTING WATERTIGHT FLUSH HATCH
WITH RECESSED SPRING

DRAWING NO. 219

SCHEDULE OF MATERIALS		
PC. NO.	MATERIAL	REMARKS
1	STEEL	
2	PLATED STEEL	
3	BRASS	
4	STEEL	
5	STEEL	
6	STEEL	
7	STEEL	
8	NEOPRENE	



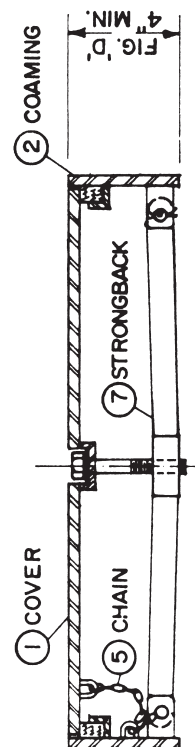
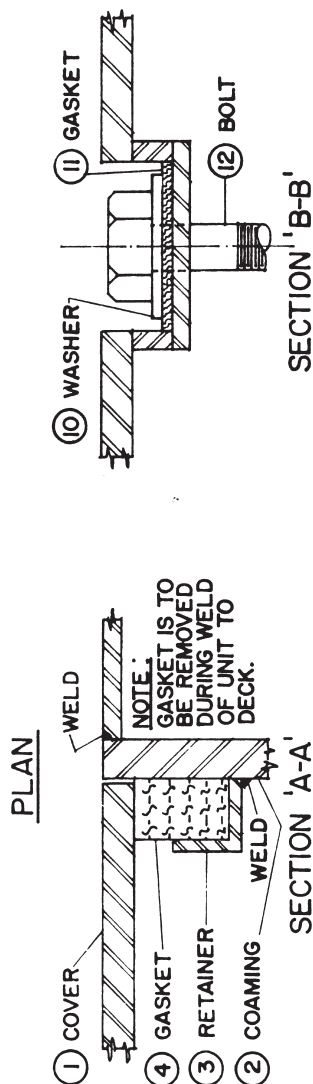
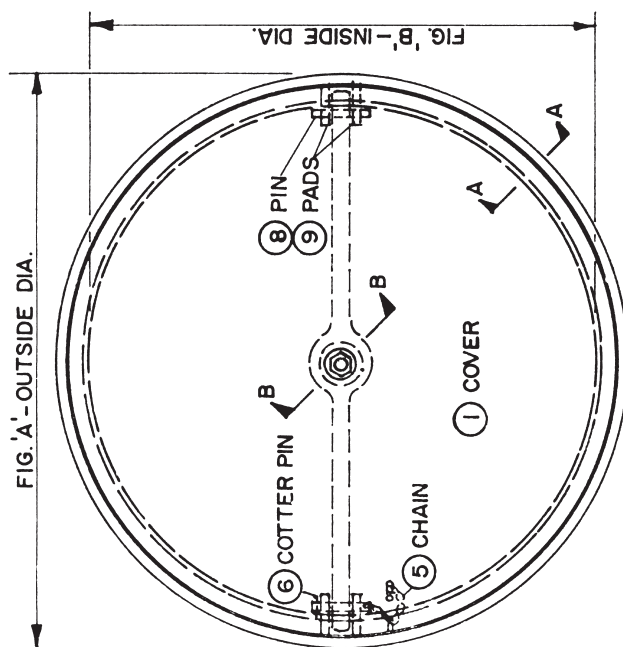
DIMENSION SCHEDULE									
CLEAR OPENING	A	B	C	D	E	F	G	H	I
15" X 23"	23"	24 1/4"	27"	29"	15"	16 1/4"	19"	21"	8"
18" X 24"	24"	25 1/4"	28"	30"	18"	19 1/4"	22"	24"	6"



BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
WATERTIGHT MANHOLE COVER
DRAWING NO. 300 - REV #1

SCHEDULE OF MATERIALS		
PC. NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	MILD STEEL	
4	NEOPRENE	
5	STEEL	
6	STEEL	
7	MILD STEEL	
8	COLD FINISH	
9	MILD STEEL	
10	BRASS	
11	NEOPRENE	
12	STAINLESS	

NOTE:
 20" O.D. — 17 3/4" I.D.
 21" O.D. — 18 3/4" I.D.
 22" O.D. — 19 3/4" I.D.
 24" O.D. — 21 3/4" I.D.



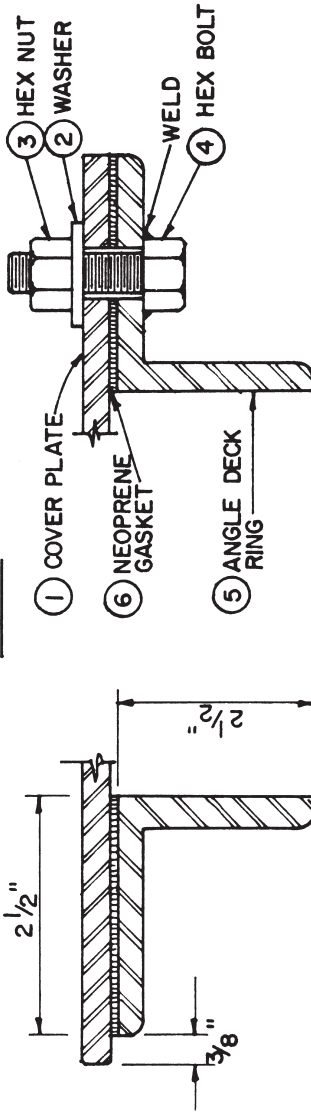
BYRNE, RICE & TURNER, INC.
 NEW ORLEANS, LOUISIANA
 SINGLE BOLT MANHOLE
 DRAWING NO. 301

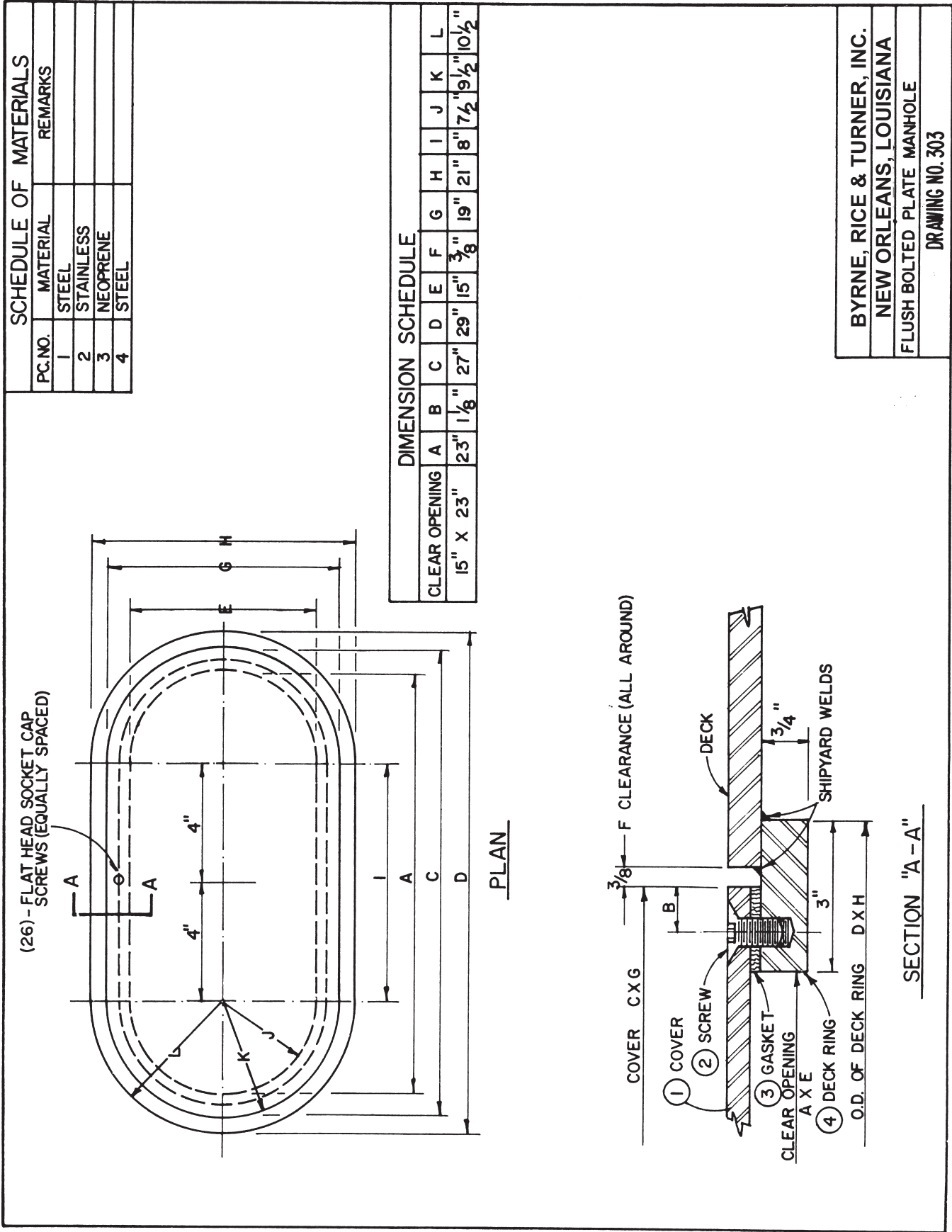
6	NEOPRENE
---	----------

18" x 24"

Age Group	Percentage of Respondents
18-29	65%
30-49	75%
50-69	85%
70+	94%

BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
RAISED BOLTED PLATE MANHOLE
DRAWING NO. 302

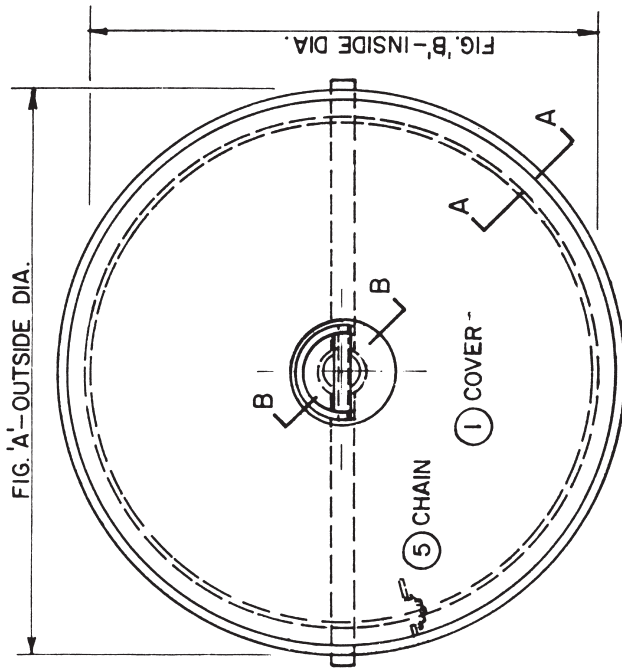




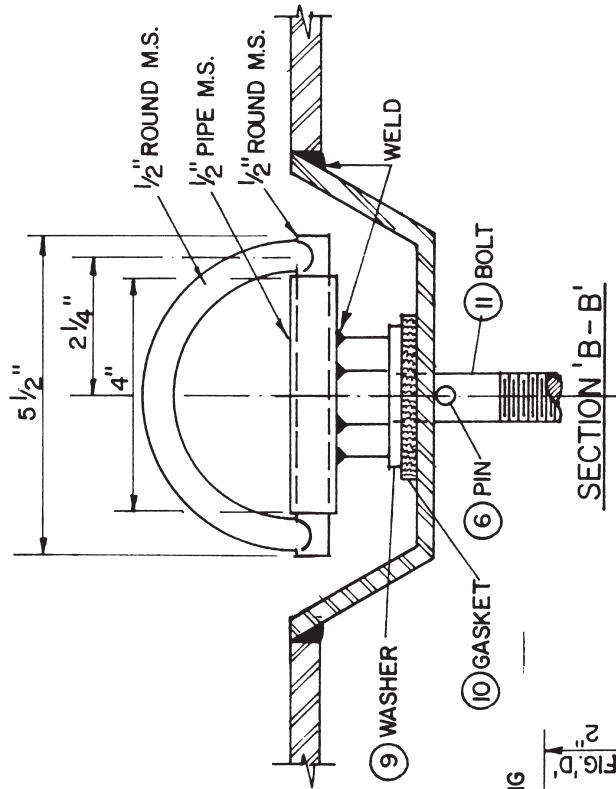
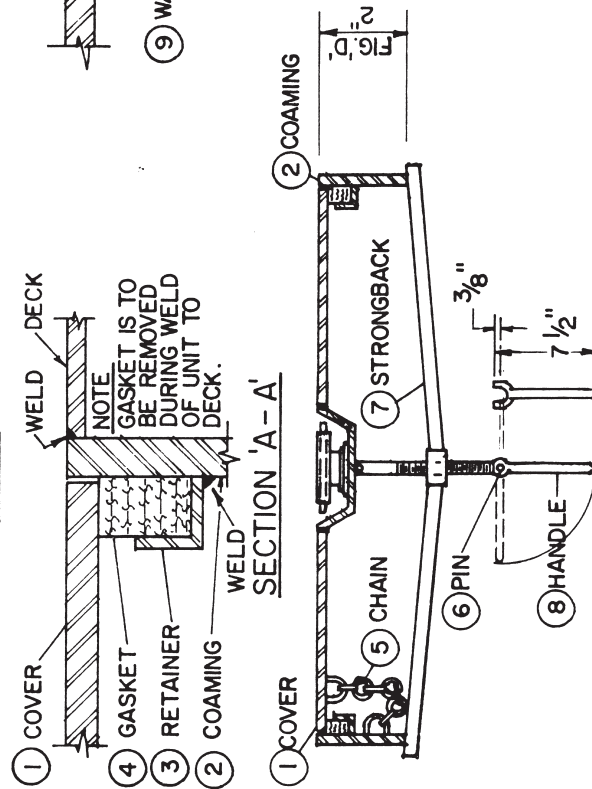
SCHEDULE OF MATERIALS		
PC.NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	MILD STEEL	
4	NEOPRENE	
5	STEEL	
6	STAINLESS	
7	MILD STEEL	
8	MILD STEEL	
9	STAINLESS	
10	NEOPRENE	
11	STAINLESS	

NOTE:

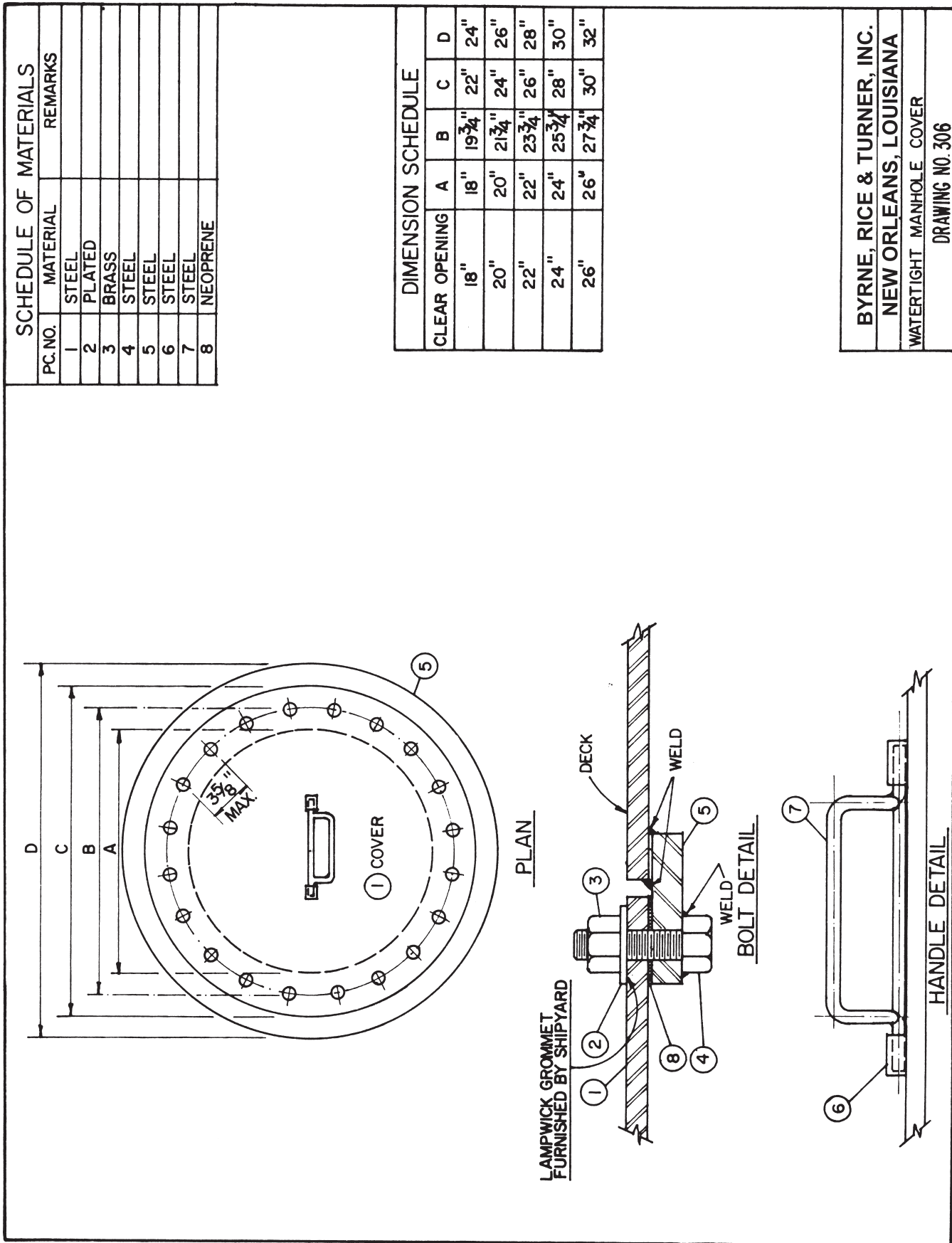
20" O.D. —	17 3/4" I.D.
21" O.D. —	18 3/4" I.D.
22" O.D. —	19 3/4" I.D.
24" O.D. —	21 3/4" I.D.

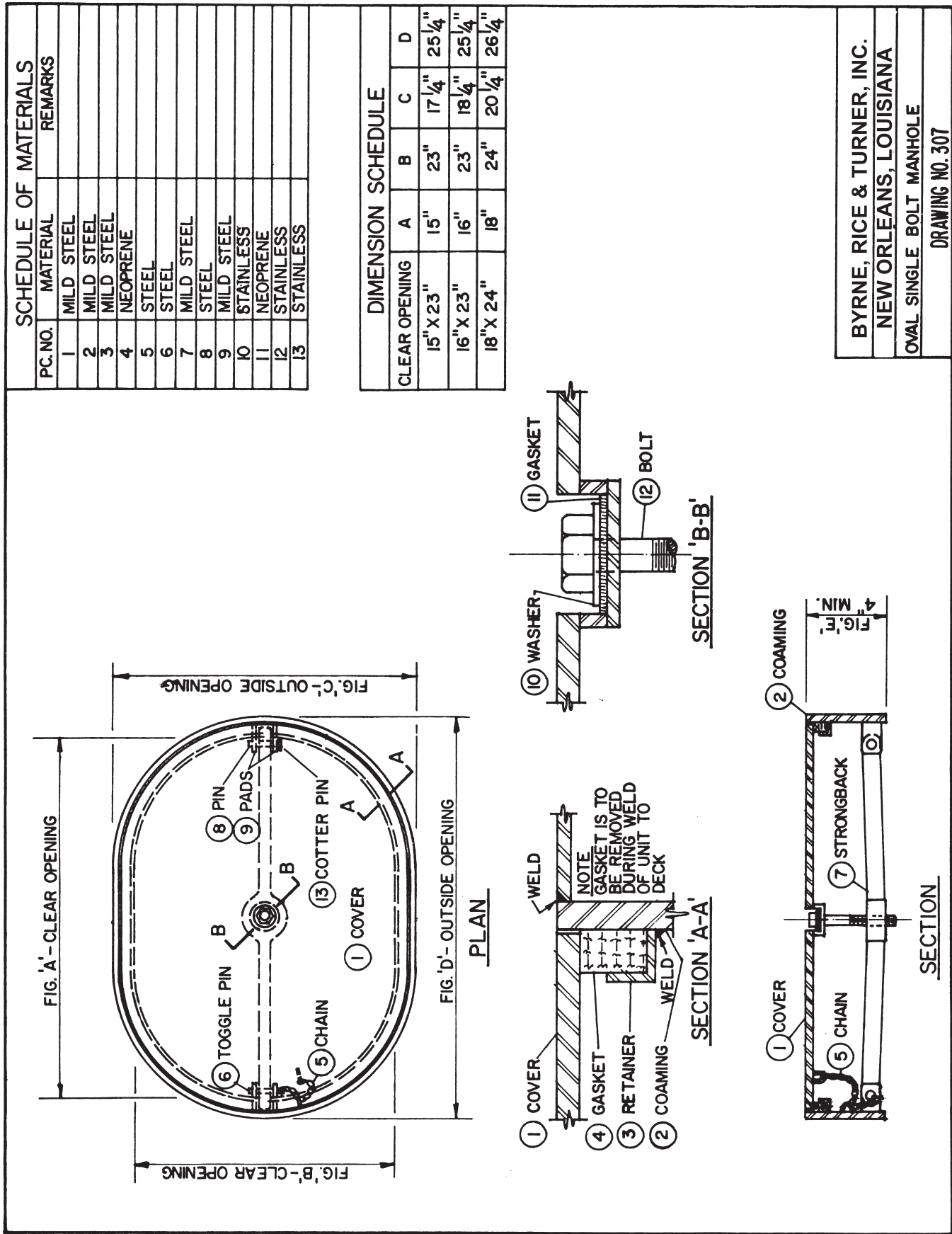


PLAN

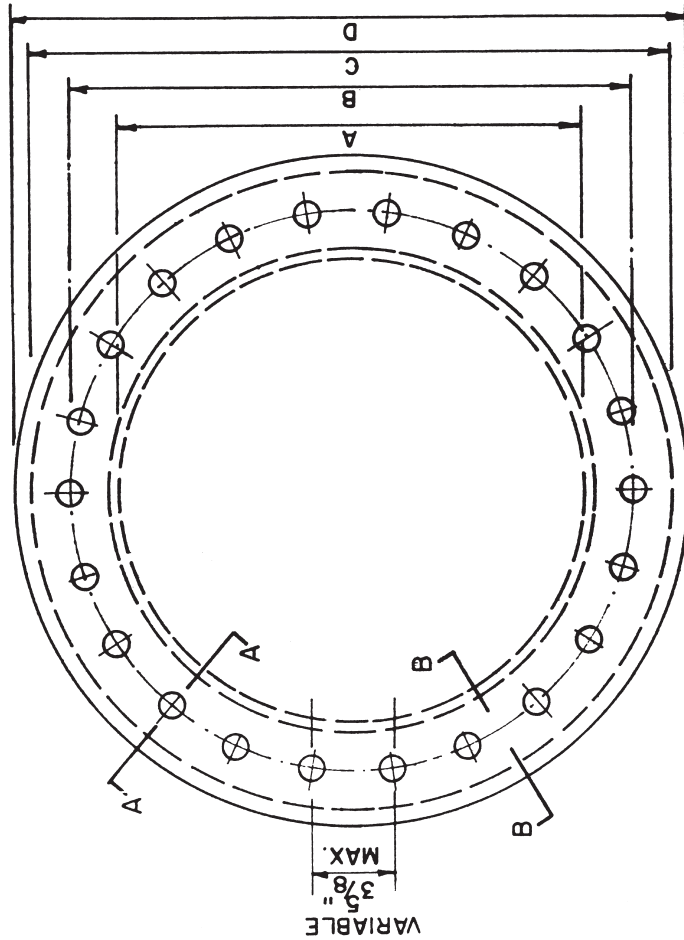


BYRNE, RICE & TURNER, INC.
 NEW ORLEANS, LOUISIANA
 SINGLE BOLT MANHOLE WITH FOLD
 DOWN HANDLE
 DRAWING NO. 305



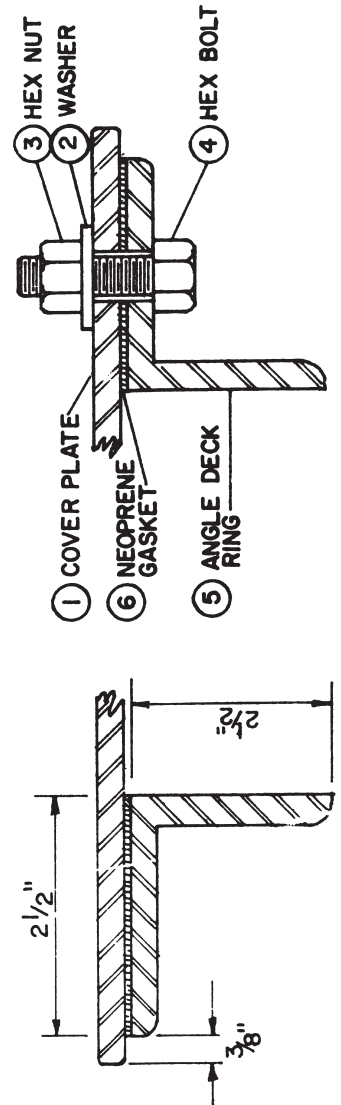


SCHEDULE OF MATERIALS		
PC. NO.	MATERIAL	REMARKS
1	STEEL	
2	PLATED	
3	PLATED	
4	MILD STEEL	
5	STEEL	
6	NEOPRENE	



PLAN

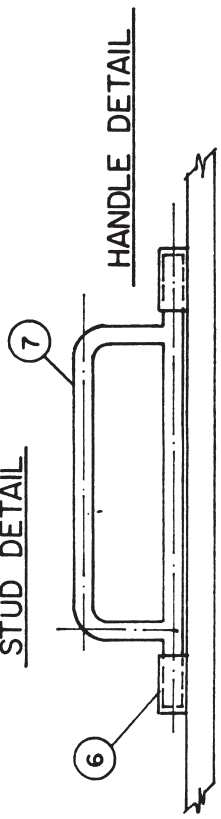
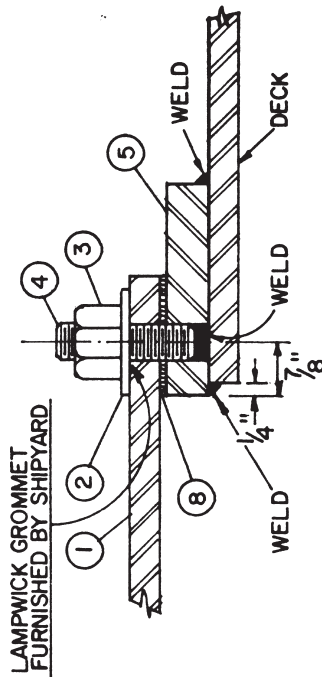
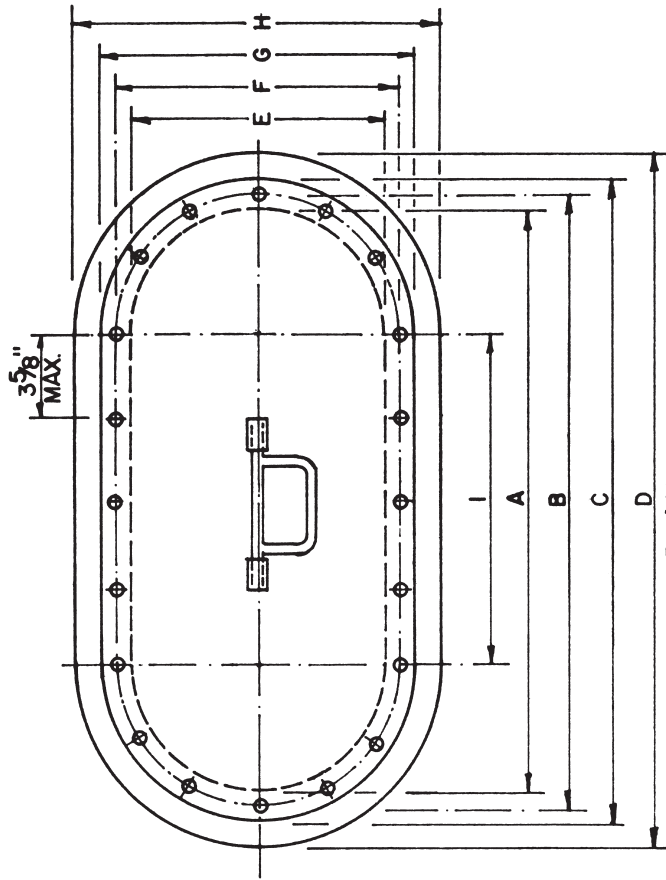
DIMENSION SCHEDULE				
NO. BOLTS	CLEAR OPENING	A	B	C D
22	18"	18"	$20\frac{3}{4}$ "	23" $23\frac{3}{4}$ "
22	20"	20"	$22\frac{3}{4}$ "	25" $25\frac{3}{4}$ "
22	22"	22"	$24\frac{3}{4}$ "	27" $27\frac{3}{4}$ "
22	24"	24"	$26\frac{3}{4}$ "	29" $29\frac{3}{4}$ "



BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
ROUND RAISED BOLTED MANHOLE
DRAWING NO. 308

SCHEDULE OF MATERIALS		
PC. NO.	MATERIAL	REMARKS
1	STEEL	
2	PLATED	
3	PLATED	
4	MILD STEEL	
5	STEEL	
6	STEEL	
7	STEEL	
8	NEOPRENE	

DIMENSION SCHEDULE										
CLEAR OPENING	A	B	C	D	E	F	G	H	I	
15" X 23"	23"	24 ³ / ₄ "	26 ¹ / ₂ "	29"	15"	16 ³ / ₄ "	18 ¹ / ₂ "	21"	8"	
18" X 24"	24"	25 ¹ / ₄ "	27 ¹ / ₂ "	30"	18"	19 ¹ / ₄ "	21 ¹ / ₂ "	24"	6"	



BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
BOLTED PLATE MANHOLE WITH STUDS
DRAWING NO. 309



PC.NO.	MATERIAL	REMARKS
1	STEEL	
2	STAINLESS	
3	NEOPRENE	
4	STEEL	

CLEAR OPENING	A	B	C
18"	18"	21"	24"
20"	20"	24"	26"
22"	22"	26"	28"
24"	24"	28"	30"

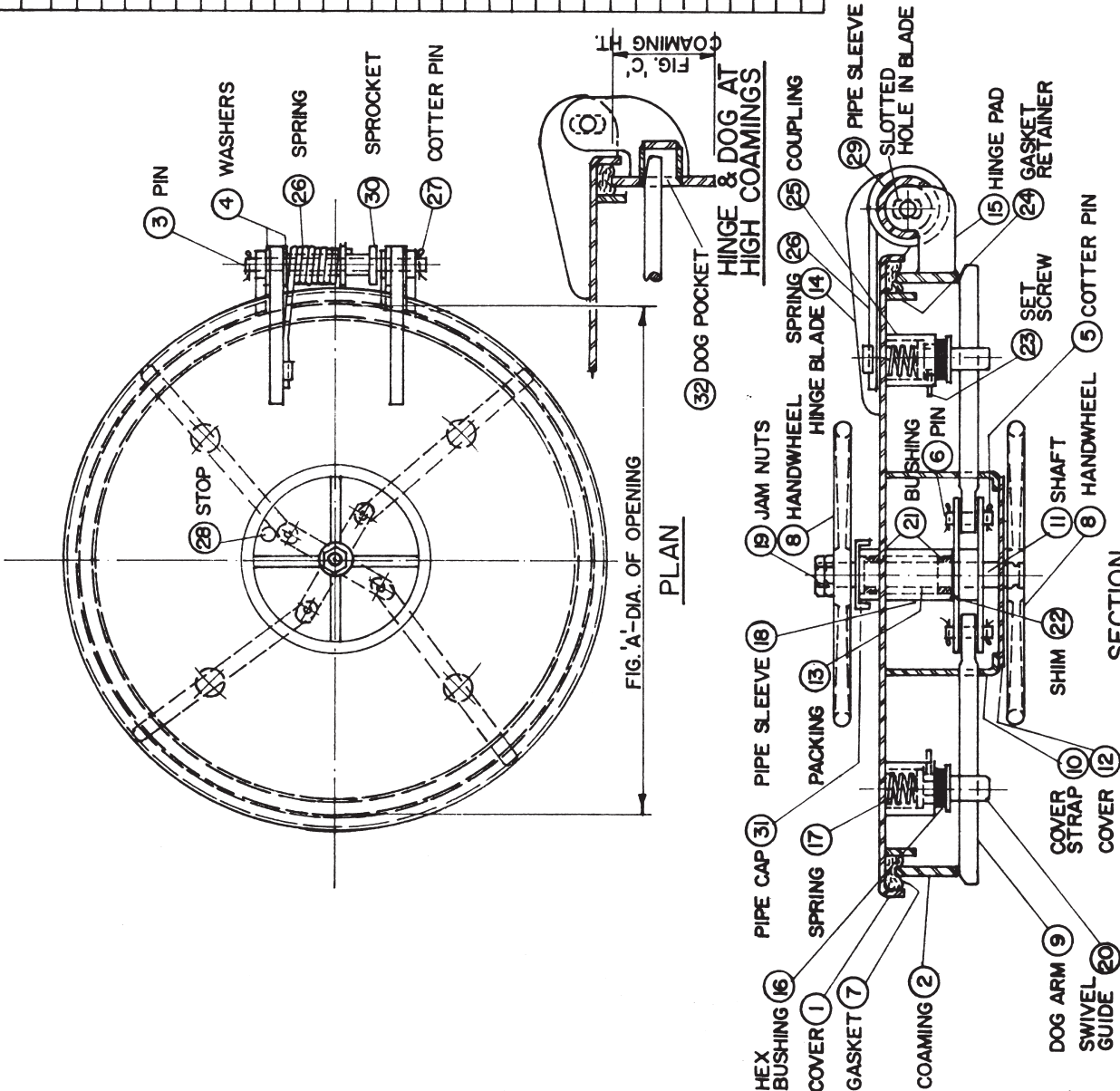
BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
FLUSH BOLTED PLATE MANHOLE
DRAWING NO. 310

SCHEDULE OF MATERIALS

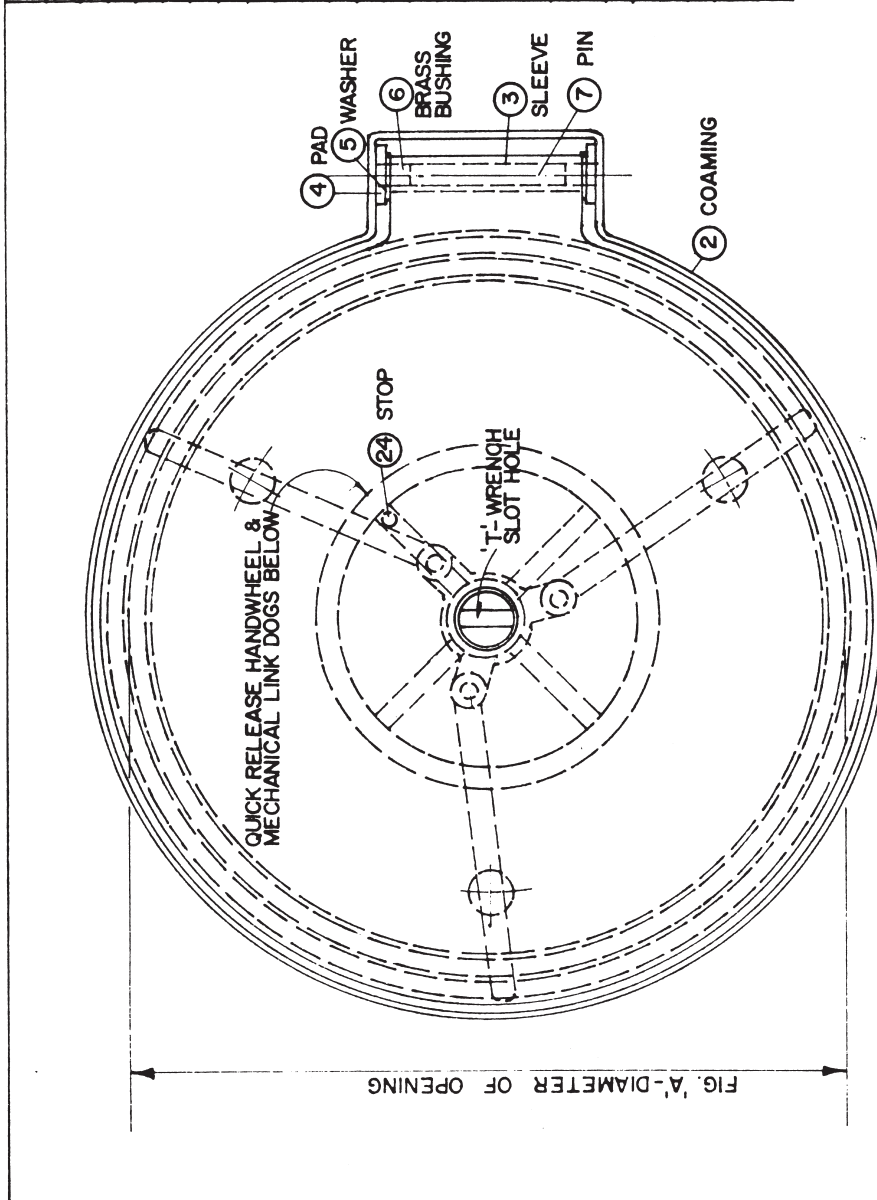
PC. NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	COLD FINISH	
4	BRASS	
5	MILD STEEL	
6	COLD FINISH	
7	NEOPRENE	
8	MILD STEEL	
9	MILD STEEL	
10	MILD STEEL	
11	COLD FINISH	
12	MILD STEEL	
13	GRAPHITE	
14	MILD STEEL	
15	MILD STEEL	
16	MILD STEEL	
17	SPRING STEEL	
18	STEEL	
19	STEEL	
20	BRASS	
21	DELURIN	
22	BRASS	
23	STEEL	
24	MILD STEEL	
25	STEEL	
26	SPRING STEEL	
27	MILD STEEL	
28	MILD STEEL	
29	MILD STEEL	
30	MILD STEEL	
31	STEEL	
32	MILD STEEL	

BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
QUICK ACTING WATERTIGHT SCUTTLE WITH
SPRING BALANCED COVER

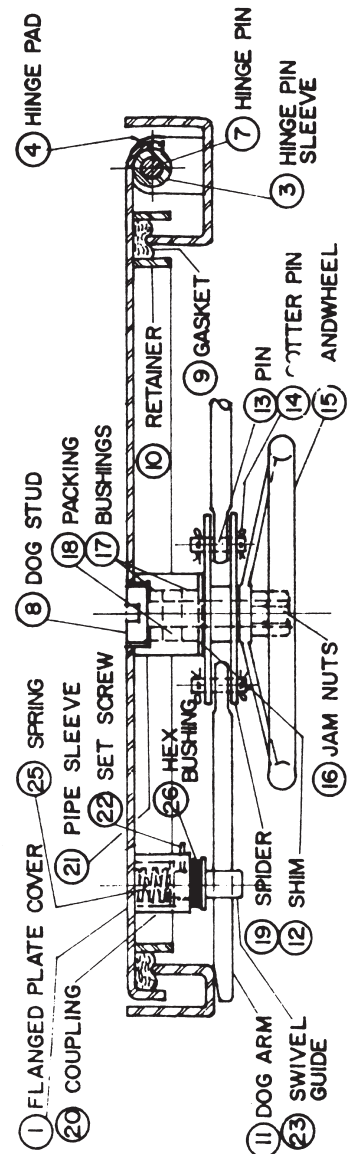
DRAWING NO. 400



SCHEDULE OF MATERIALS		
PC. NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	MILD STEEL	
4	MILD STEEL	
5	BRASS	
6	BRASS	
7	COLD FINISH	
8	MILD STEEL	
9	NEOPRENE	
10	MILD STEEL	
11	MILD STEEL	
12	BRASS	
13	COLD FINISH	
14	MILD STEEL	
15	MILD STEEL	
16	MILD STEEL	
17	DELFIN	
18	GRAPHITE	
19	MILD STEEL	
20	MILD STEEL	
21	MILD STEEL	
22	MILD STEEL	
23	BRASS	
24	MILD STEEL	
25	SPRING STEEL	
26	MILD STEEL	



PLAN



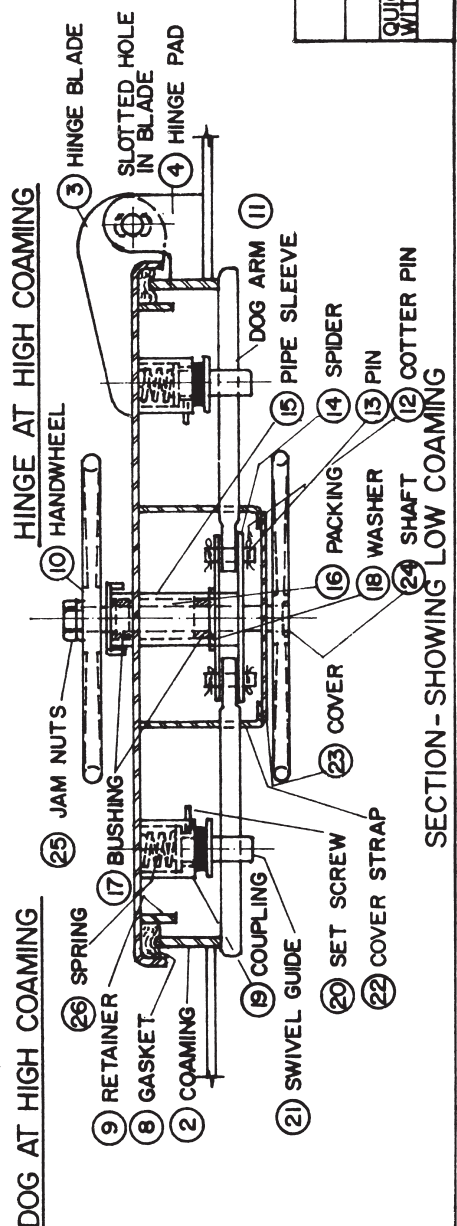
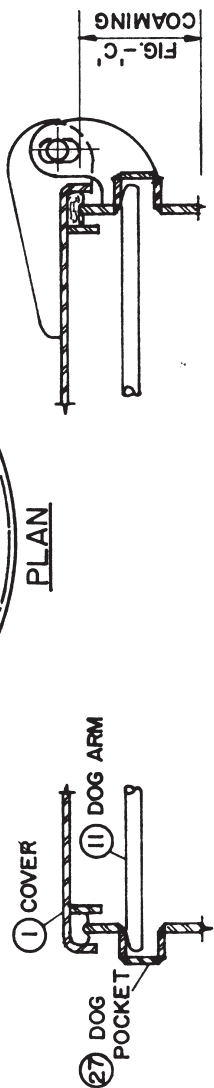
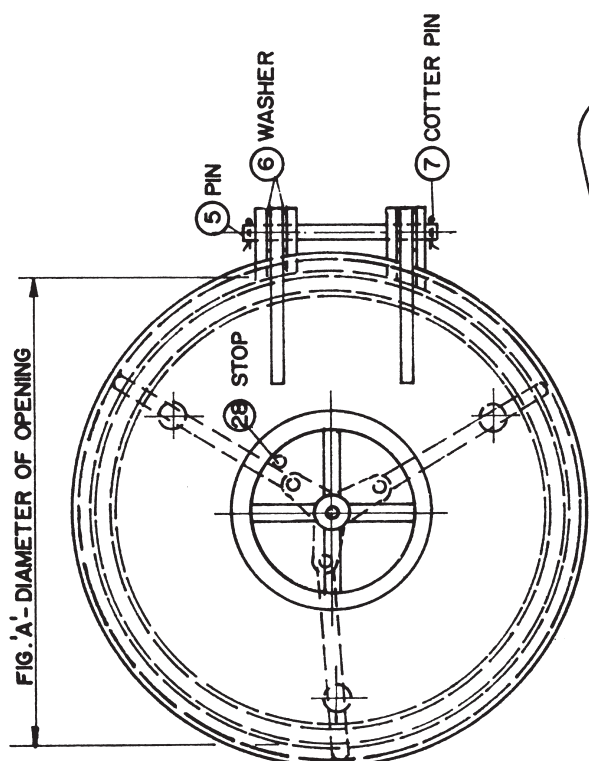
SECTION

BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
FLUSH QUICK ACTING WATERTIGHT ROUND
SCUTTLE

DRAWING NO. 401

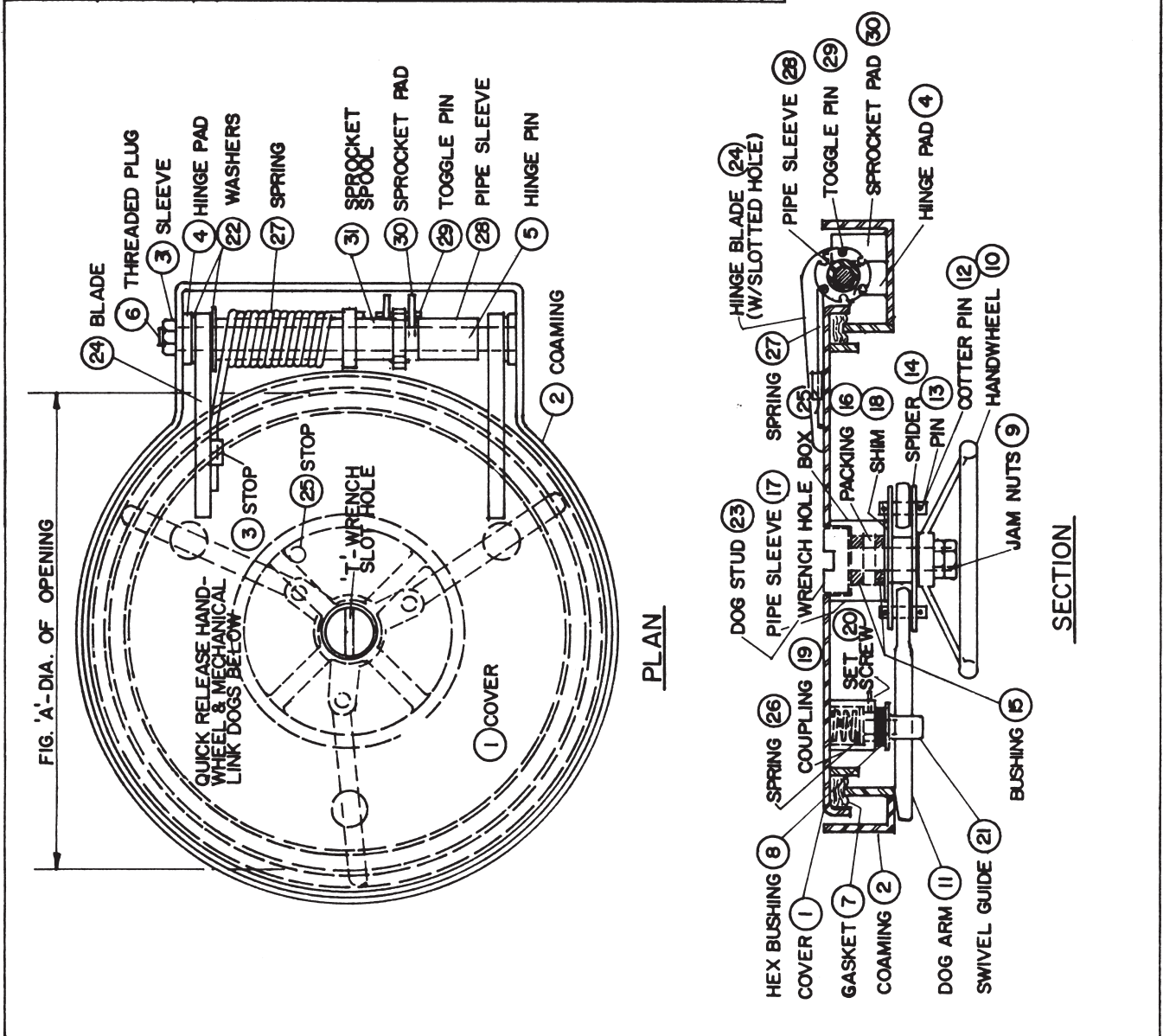
SCHEDULE OF MATERIALS

PC. NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	MILD STEEL	
4	MILD STEEL	
5	COLD FINISH	
6	BRASS	
7	BRASS	
8	NEOPRENE	
9	MILD STEEL	
10	MILD STEEL	
11	MILD STEEL	
12	MILD STEEL	
13	COLD FINISH	
14	MILD STEEL	
15	MILD STEEL	
16	GRAPHITE	
17	DELTRIN	
18	BRASS	
19	MILD STEEL	
20	MILD STEEL	
21	BRASS	
22	MILD STEEL	
23	MILD STEEL	
24	COLD FINISH	
25	BRASS	
26	STEEL	
27	MILD STEEL	
28	MILD STEEL	



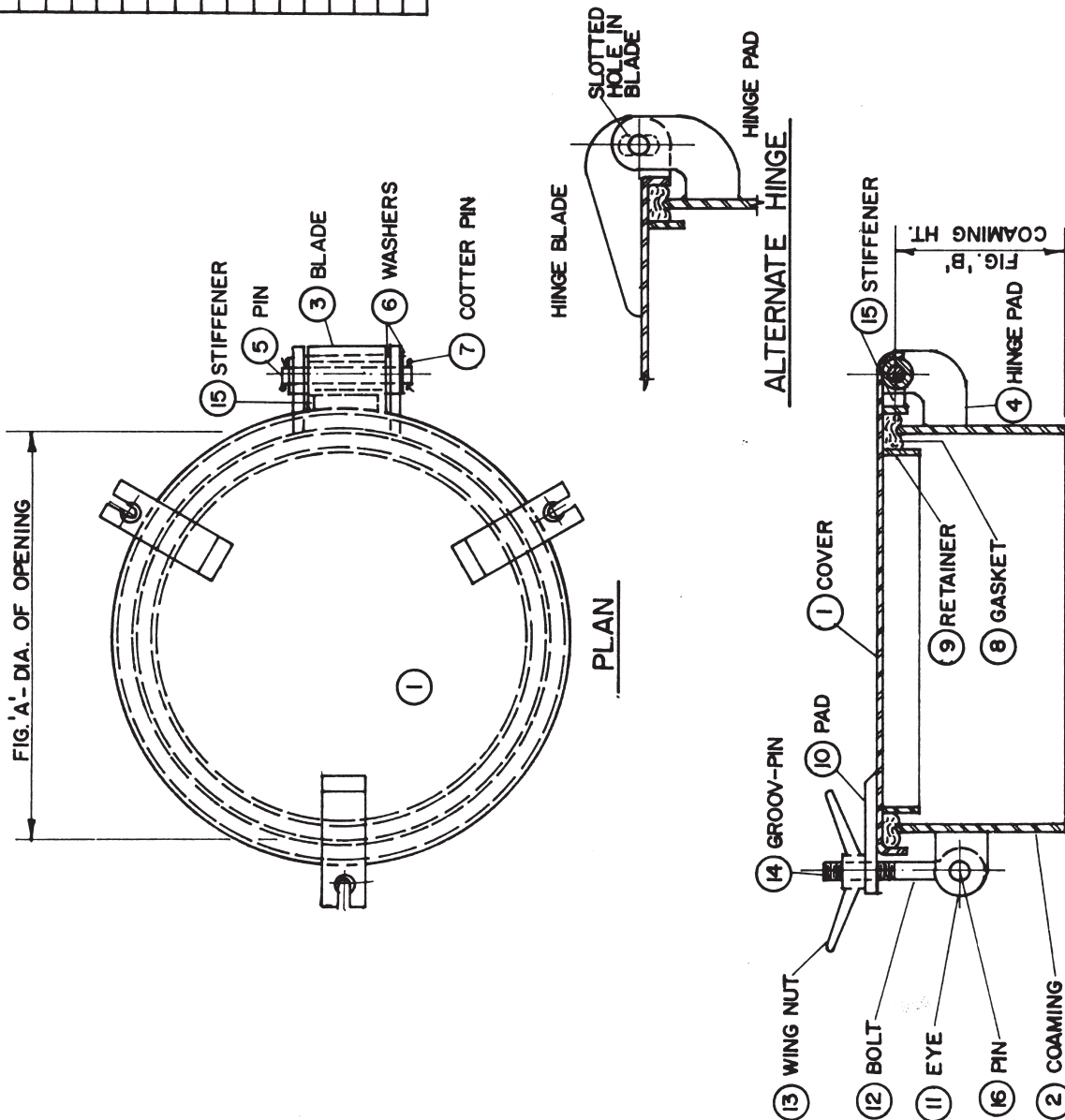
BYRNE, RICE & TURNER, INC.
 NEW ORLEANS, LOUISIANA
 QUICK ACTING WATERTIGHT ROUND SCUTTLE
 WITH THREE DOGS
 DRAWING NO. 402

SCHEDULE OF MATERIALS		
PC. NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	MILD STEEL	
4	MILD STEEL	
5	COLD FINISH	
6	STEEL	
7	NEOPRENE	
8	MILD STEEL	
9	MILD STEEL	
10	MILD STEEL	
11	MILD STEEL	
12	BRASS	
13	COLD FINISH	
14	MILD STEEL	
15	DELFIN	
16	GRAPHITE	
17	MILD STEEL	
18	BRASS	
19	MILD STEEL	
20	MILD STEEL	
21	BRASS	
22	BRASS	
23	BRASS	
24	MILD STEEL	
25	MILD STEEL	
26	SPRING STEEL	
27	SPRING STEEL	
28	MILD STEEL	
29	MILD STEEL	
30	MILD STEEL	
31	MILD STEEL	

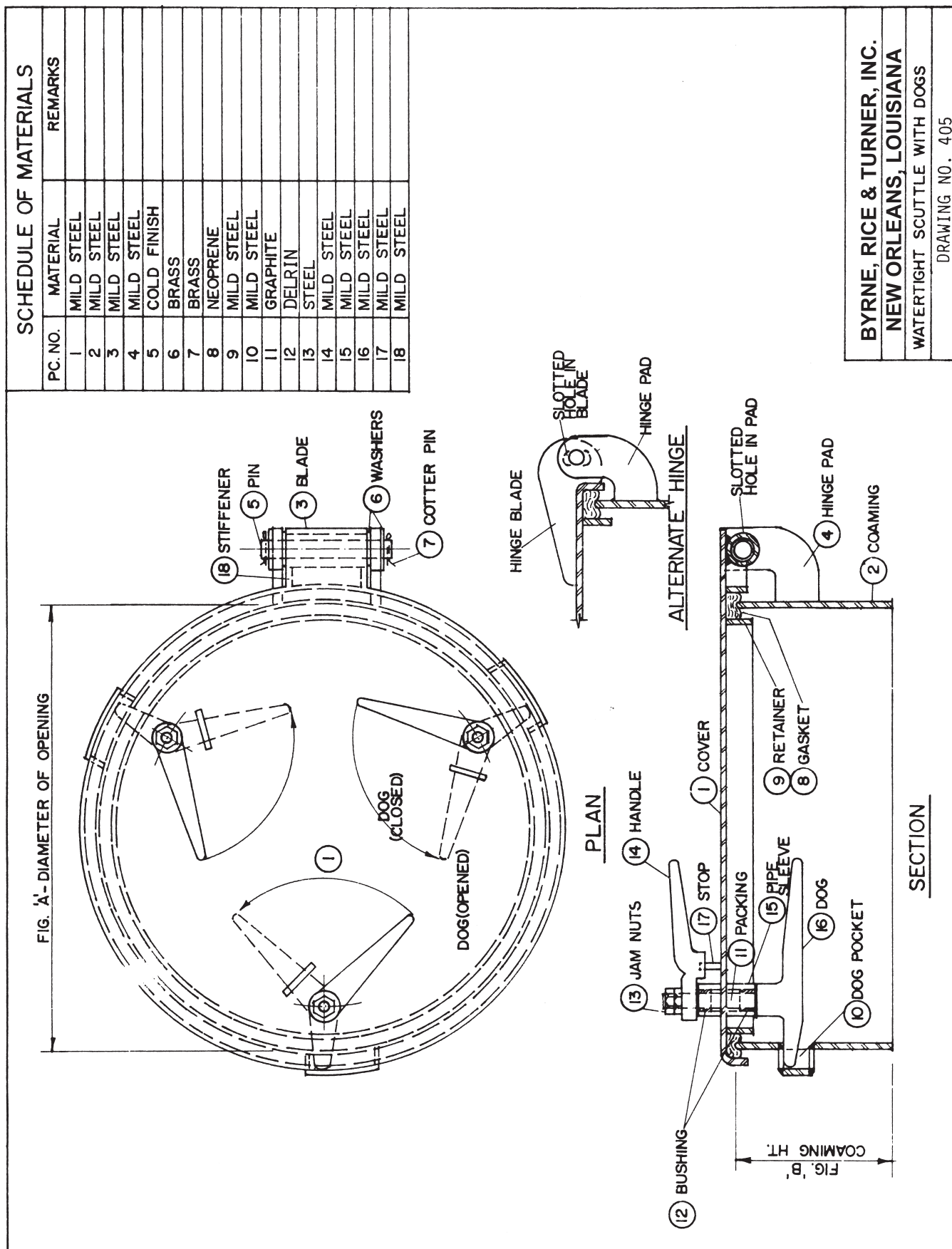


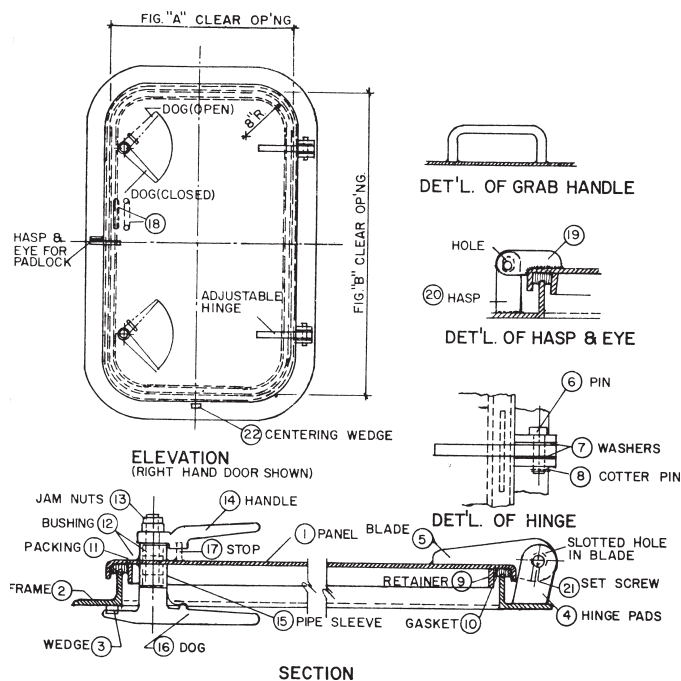
BYRNE, RICE & TURNER, INC.
 NEW ORLEANS, LOUISIANA
 QUICK ACTING WATERTIGHT FLUSH SQUITTL
 DRAWING NO. 403

SCHEDULE OF MATERIALS		
PC. NO.	MATERIAL	REMARKS
1	MILD STEEL	
2	MILD STEEL	
3	MILD STEEL	
4	MILD STEEL	
5	COLD FINISH	
6	BRASS	
7	BRASS	
8	NEOPRENE	
9	MILD STEEL	
10	MILD STEEL	
11	MILD STEEL	
12	BRONZE	
13	BRONZE	
14	STAINLESS	
15	MILD STEEL	
16	BRASS	

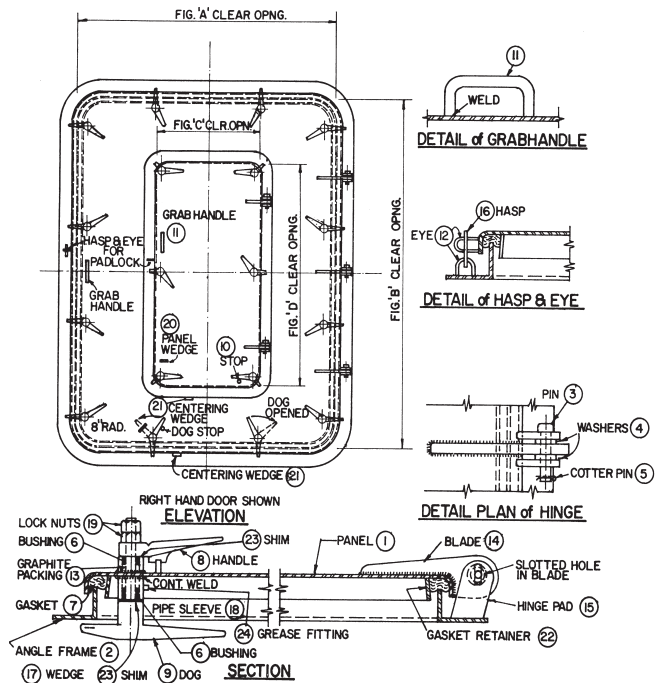


BYRNE, RICE & TURNER, INC.
 NEW ORLEANS, LOUISIANA
 WATERTIGHT SCUTTLE W/DROP BOLTS
 DRAWING NO. 404

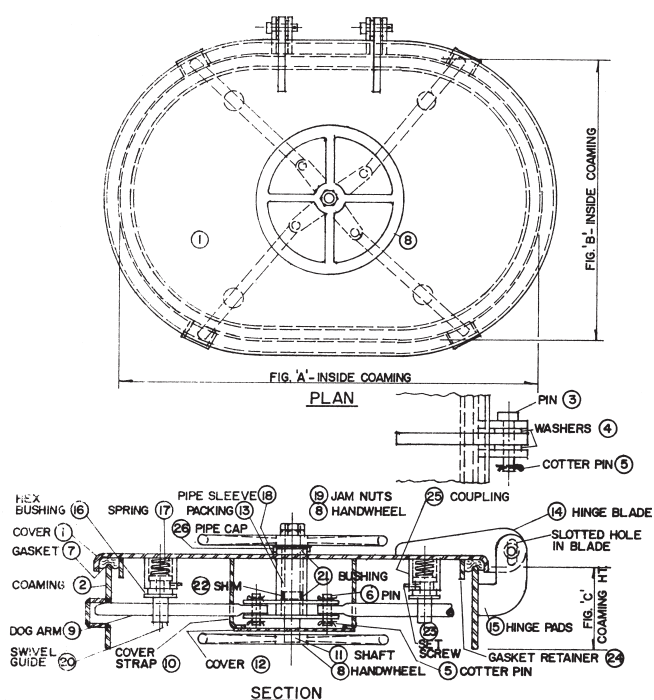




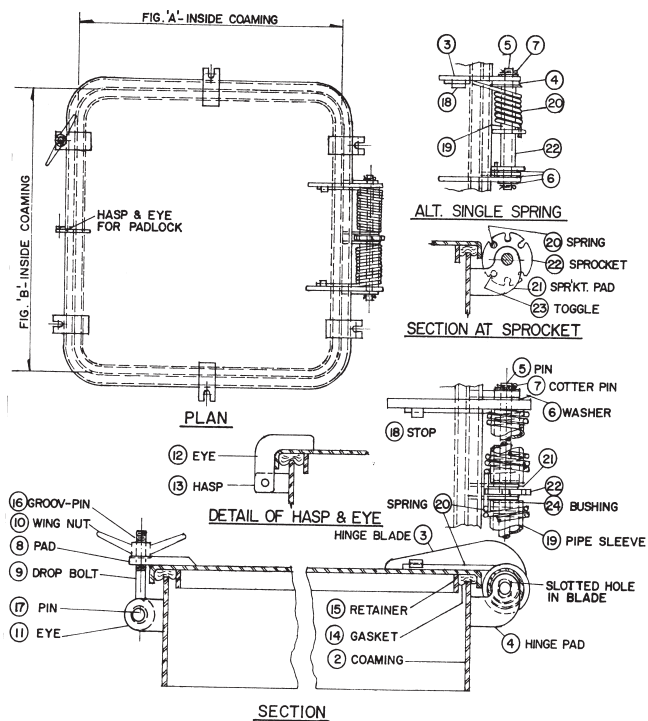
BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
 GASTIGHT & WEATHERTIGHT DOOR W/ 2 DOGS
 DRAWING NO. 100



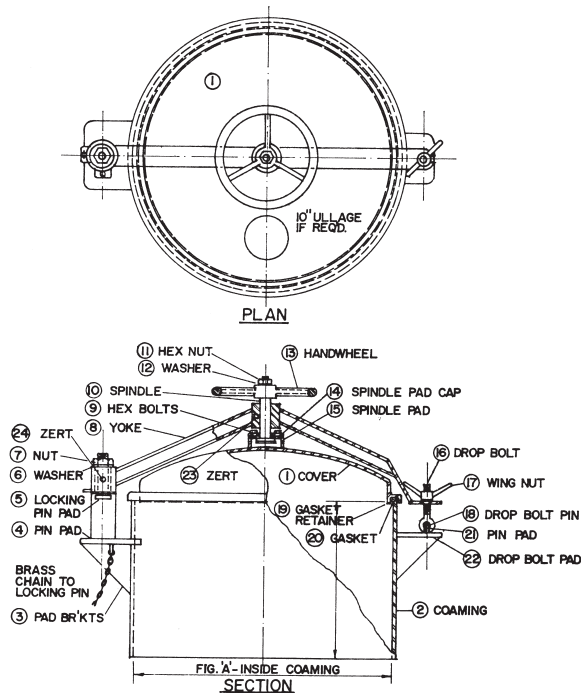
BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
 WATERTIGHT DOOR - PERSONAL & EQUIP.
 DRAWING NO. 107



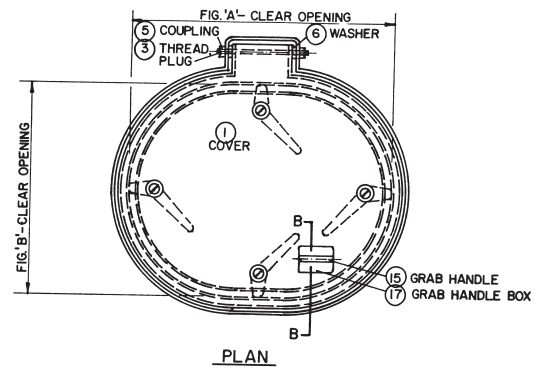
BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
 QUICK ACTING WATERTIGHT HATCH
 DRAWING NO. 203



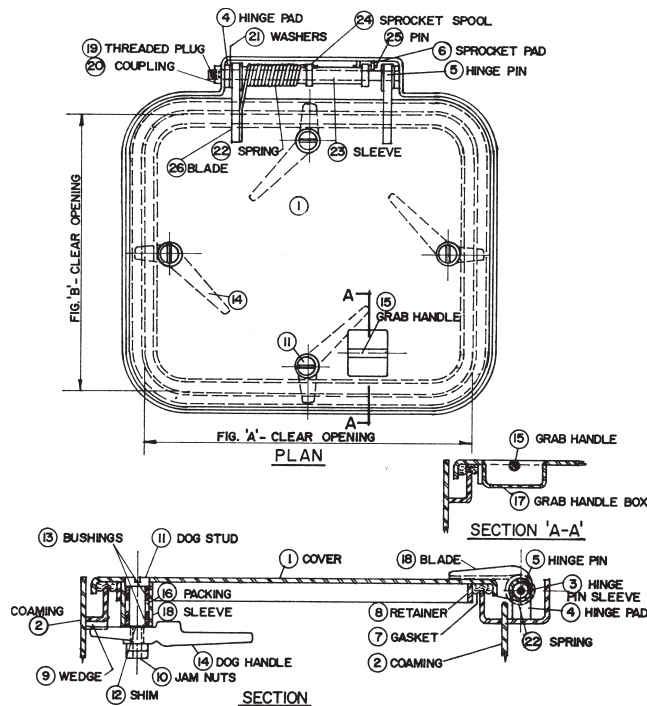
BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
 SPRING BAL. RECTANGULAR OR SQ. DOG HATCH
 DRAWING NO. 207



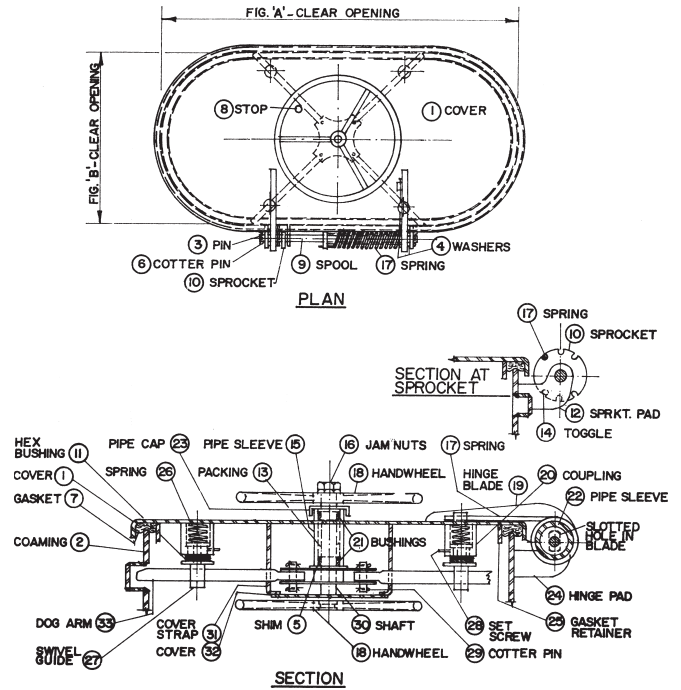
BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
 OIL CARGO HATCH
 DRAWING NO. 210



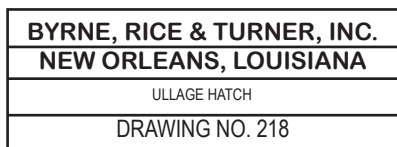
BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
 WATERTIGHT FLUSH OVAL HATCH
 DRAWING NO. 212

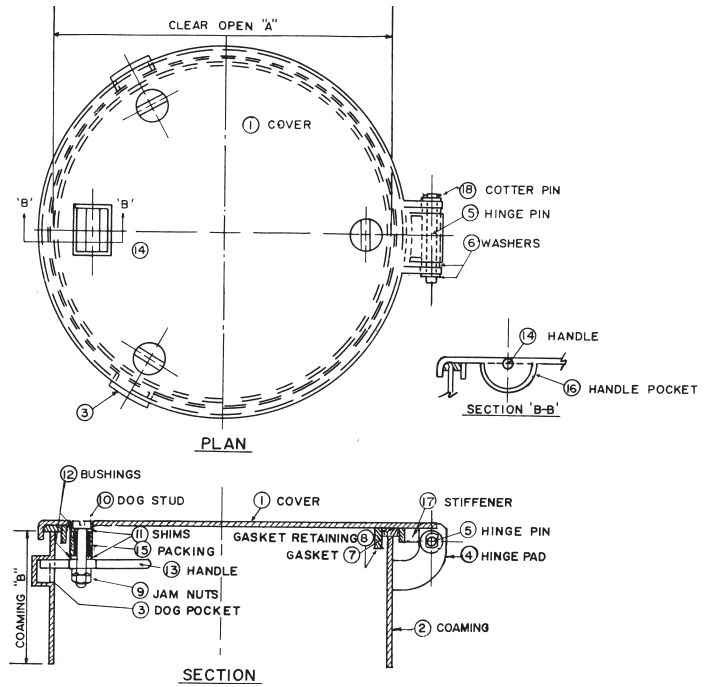
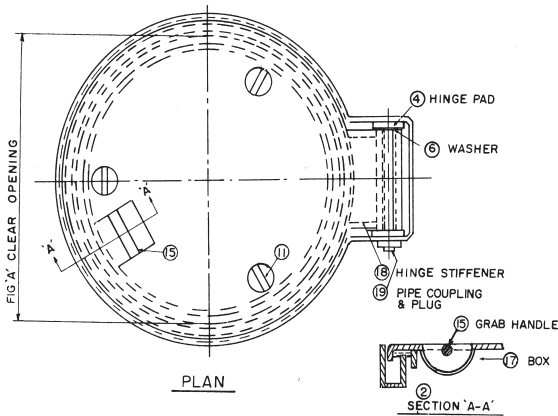


BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
 WATERTIGHT FLUSH HATCH W SPRING BAL. COVER
 DRAWING NO. 213



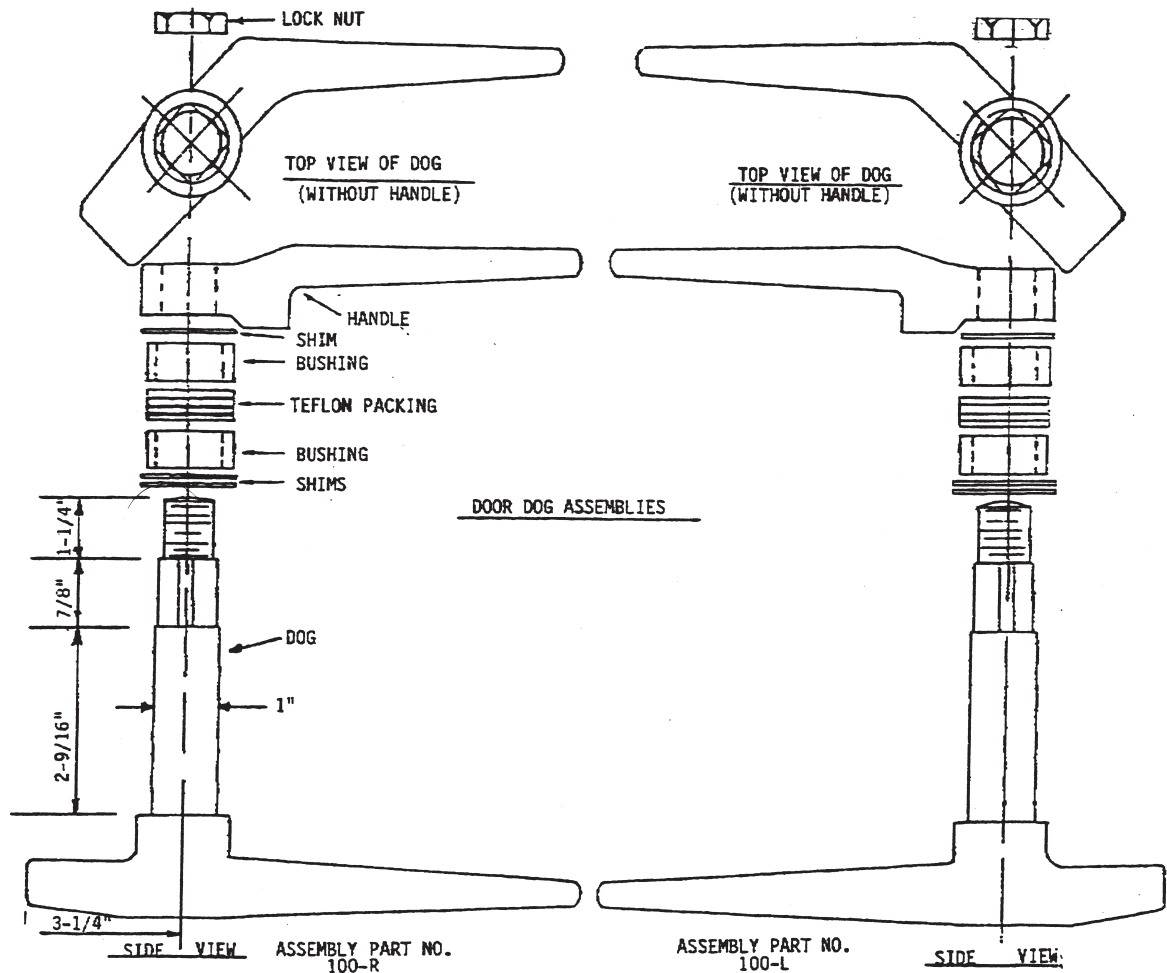
BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
 SPRING BAL. QUICK ACTING WATERTIGHT OVAL HATCH
 DRAWING NO. 215





BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
WATERTIGHT FLUSH SCUTTLE
DRAWING NO. 407

BYRNE, RICE & TURNER, INC.
NEW ORLEANS, LOUISIANA
WATERTIGHT RAISED SCUTTLE - FLUSH COVER
DRAWING NO. 408



HOLLOW METAL JOINER DOORS AND FRAMES

Panel and flush type doors are constructed of either cold rolled steel, stainless steel, aluminum or honeycomb core with aluminum covering. All doors are stiffened by use of vertical zee sections, spot welded approximately 4" oc to each face of the door. Bottom and Top of door are horizontally reinforced by channels tack welded in place. Doors are filled with fiber glass insulation.

Reinforcements: Steel plate reinforcements are welded to the interior of the door, and are accurately fitted for hinges and locks. Similar reinforcements are provided for hold back hooks, door closers, bumpers and other surface installed hardware for which drilling and tapping is to be done on location.

Finish: All welds are ground and rough edges rounded. Doors are thoroughly cleaned of grease and other impurities, filled flush so as to completely conceal all welds and painted with a rust resistant primer.

Frame sections are formed to meet the desired architectural shape to conform to bulkhead conditions. They are adequately reinforced for striker plates and hinges.

All doors and frames meet the requirements of section 72-05-25 (b) of 1958 Coast Guard Rules and Regulations for passenger Vessels CG-256 Jan. 1, 1958.

HARDWARE INFORMATION

We are prepared to furnish doors and frames with hardware installed at the plant and shipped as a complete unit ready for installation. The following are recommended hardware setups for various locations:

FOR STATEROOM DOORS, LOCKER DOORS, AND DOORS TO MISCELLANEOUS SPACE:

1½ pair butts, bronze 4" x 4".

1 set mortise cylinder locks with latch bolt and dead bolt. Latch bolt operated by knobs either side, dead bolt operated by key outside and turn piece inside. (Oval knobs and roses both sides.)

FOR PASSAGE DOORS AND DOORS NOT REQUIRING LOCKING:

1½ pair butts, bronze 4" x 4".

1 mortise latch set without locking feature. Latch bolt operated by knobs from either side. (Oval knobs and roses both sides.)

FOR PRIVATE TOILET AND SHOWER DOORS:

1½ pair butts, bronze 4" x 4".

1 mortise privacy lock with latch bolt and dead bolt. Latch bolt operated by knobs either side. Dead bolt operated by turn piece from inside and emergency key outside. When door is locked turning inside knob retracts both latch bolt and dead bolt rendering a panic proof function. (Oval knobs and roses both sides.)

FOR SCREEN DOORS:

1 pair 4" spring hinges.

1 set mortise screen door locks having small round knob on one side and small lever handle, other side. Locking button on inside.

FINISHES: Material can be furnished in either dull or polished bronze finishes.

REQUEST FOR QUOTATION SHEET JOINER DOOR - SERIES 2000

TYPE - (Drawing. no)

FRAME -

SILL -

SIZE - Clear opening or plate cut

MATERIAL -

QUANTITY -

HANDINGS -

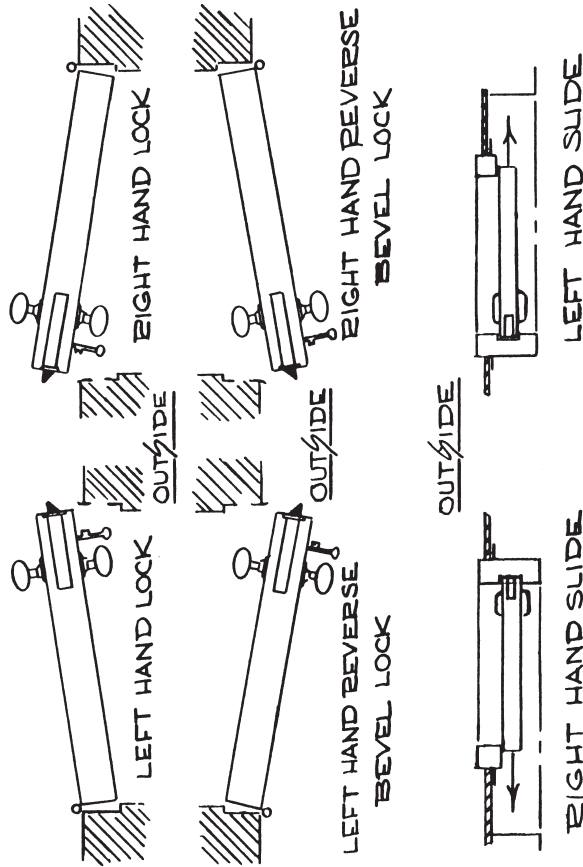
GLASS - Size, thickness, type

HARDWARE -

SPECIAL REQUIREMENTS:

HANDING OF DOORS

MORTISE OR BIM LOCKS



DETERMINING HANDS AND BEVELS OF DOORS

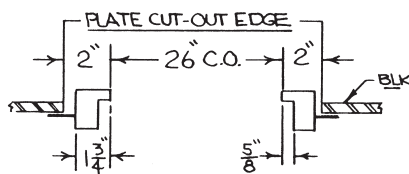
- (A) The hand of a door is determined from the Outside. Standing outside the door if the butts are on the right it is a right hand door. If the butts are on the left it is a left hand door.
- The outside of an Entrance door is the deck side.
The outside of a Room door is the passage side.
The outside of a Closet door is the room side.
The outside of a Communicating door is the side from which, when the door is closed, the butts can not be seen.
The outside of Twin doors is the side between the two doors.
- (B) If, when standing outside, the door opens from you, or inward, it takes a lock with regular bevel latch bolt; if it opens toward you, or outward, it takes a lock with reverse bevel latch bolt.

EXAMPLE

DOOR CLEAR OPENING - 26" X 75"

FRAME TYPE - CC-2001

SILL TYPE - CC-2003 A, B, C



CLEAR OPENING - 26" X 75"

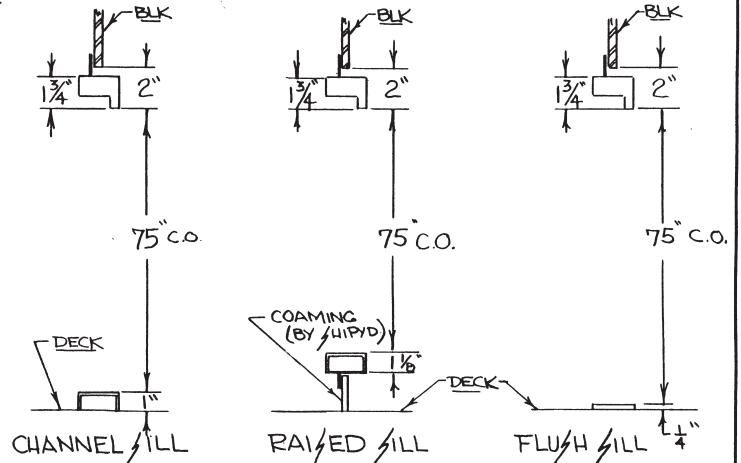
DOOR SIZE - 27" X 75 1/2"

PLATE CUT-OUT WIDTH X HEIGHT

A-CHANNEL SILL - 30" X 78"

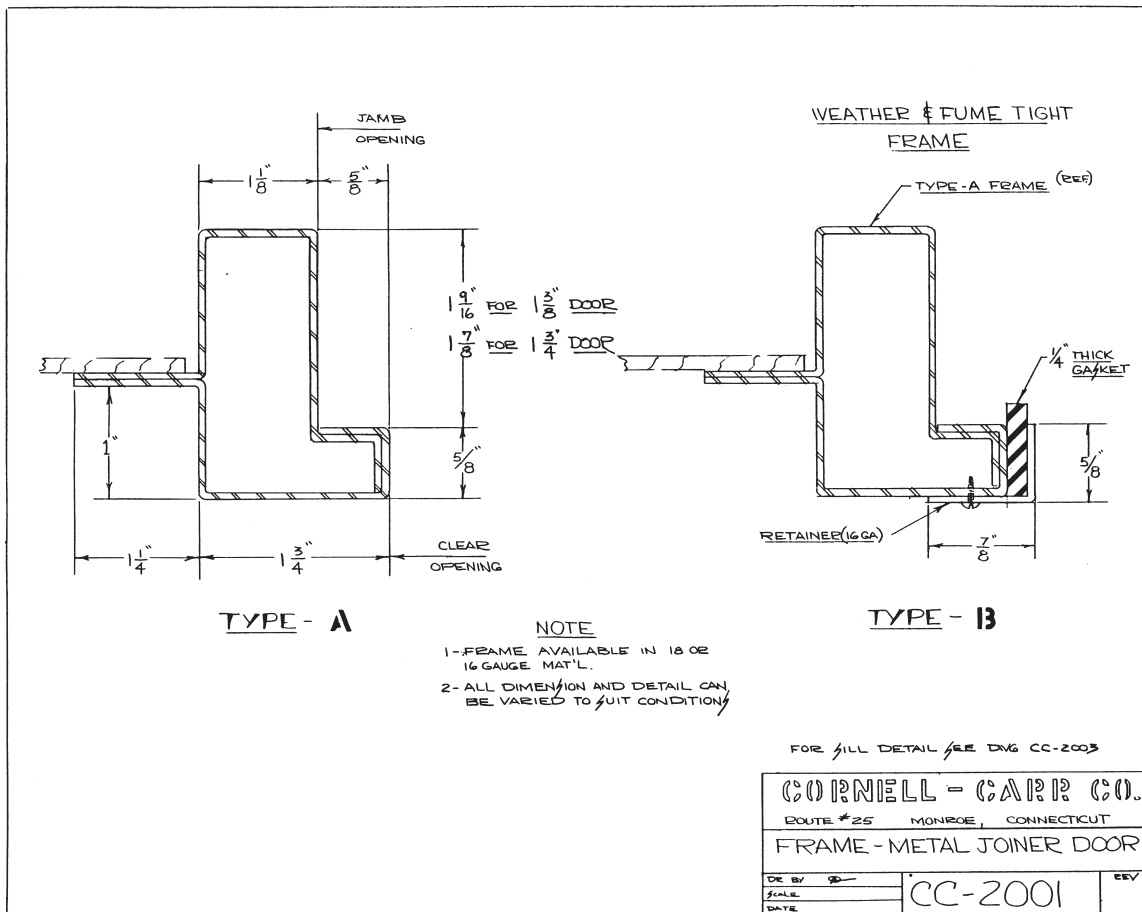
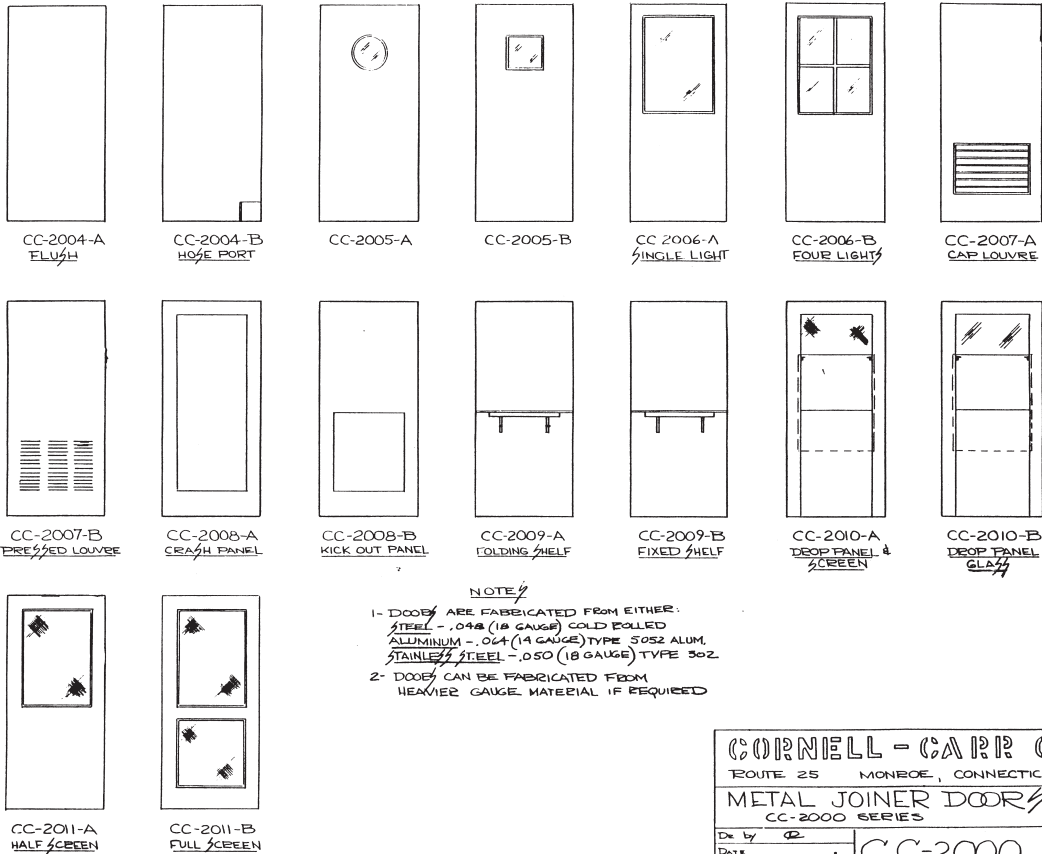
B-RAISED SILL - 30" X 78 1/8"

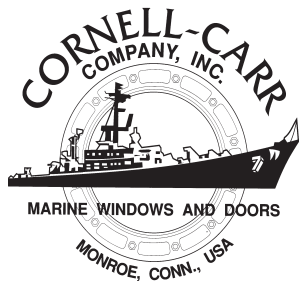
C-FLUSH SILL - 30" X 77 1/4"



TOLERANCES — FRACTIONAL DIMENSION ±			DECIMAL DIMENSION ±		
PLATE CUT-OUT OPENING JOINDER DOOR					
MAT:			CORNELL - CARR CO., INC. MONROE, CONN.		
FINISH:					
REV.	DESCRIPTION	DATE	DWN. BY	CHK. BY	DATE
			SCALE	DWG. CC- 2000 SERIE ✓	

REF. DWG. NO.





WEATHER-TIGHT DOORS AND FRAMES

The Cornell-Carr Company weather-tight door was designed to meet the requests of naval architects and marine engineers. In protected harbors and rivers where weather conditions do not require the heavy water-tight steel doors, a light weight weather-tight door is usually sufficient. These doors have dogging mechanism which secure against rain, light wave pressure and spray.

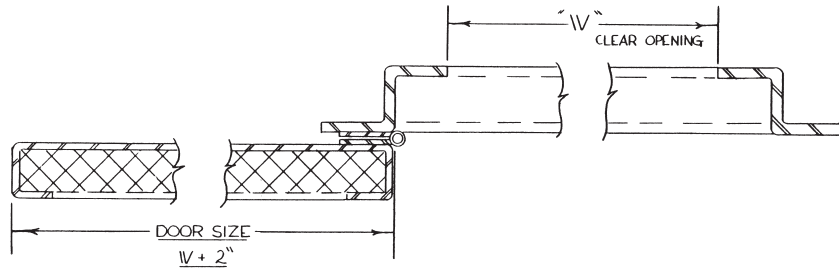
Doors fit in exterior bulkhead locations resulting in a pleasing appearance, along with ease of operation. Doors and frames can be flush mounted. They can be furnished with a narrow frame for insertion into existing bulkheads. The frames can be welded or secured by bolting.

Our special fabricated interlocking door and frame with neoprene gasket insures weather tightness at all times. The rubber gasket is secured in place and is resistant to the effects of oil, paints, salt, etc. The gasket is easily replaceable and may be obtained from our company upon request. The 12-gauge steel front panel and the optional 18-gauge back panel are stiffened with structural angles, and insulated with 1½" thickness of insulation. Dutch doors are available and framed glass can be inserted in all doors upon request. Doors can be furnished in aluminum or stainless steel or a combination of both. Doors are coated inside with a special chemical to prevent rot. They are primed with a rust preventive paint on the outside surfaces.

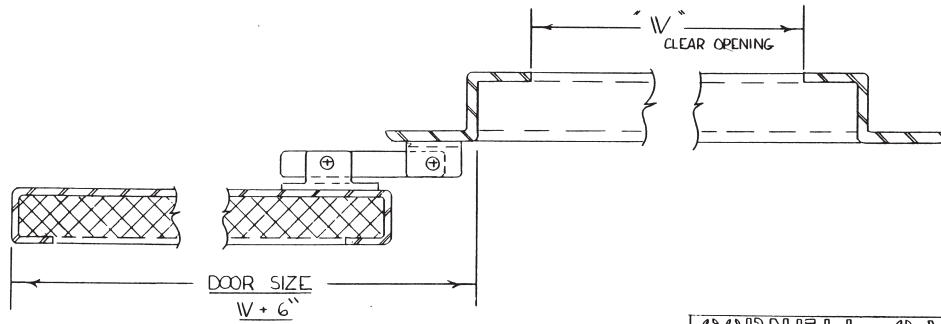
REQUEST FOR QUOTATION WATER TIGHT DOOR - SERIES 4000

TYPE - (Drawing. no.)
DESCRIPTION -
QUANTITY -
SIZE - clear opening or plate cut
MATERIAL -
HANDINGS -
GLASS THICKNESS
HARDWARE -
SPECIAL REQUIREMENTS:

FLUSH HINGE



ADJUSTABLE HINGE



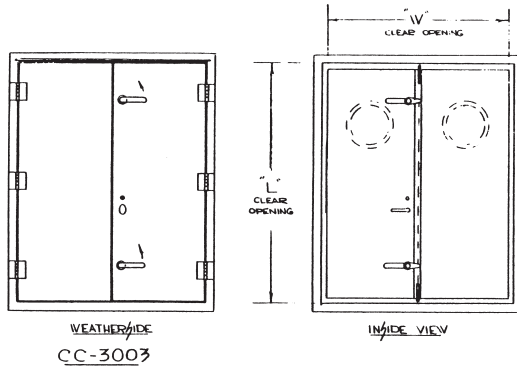
CORNELL-CARR CO.
ROUTE # 25 MONROE, CONNECTICUT

SWING OPENINGS

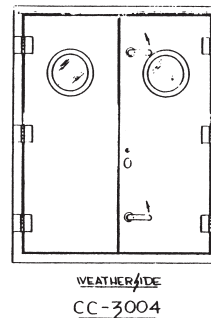
DIVN BY ~ JBP
SCALE ~
DATE ~ 8-8-77

CC-3000B

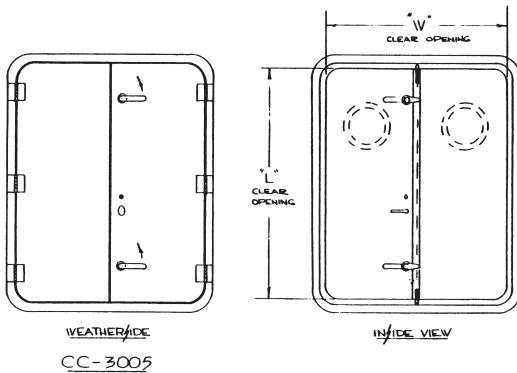
REV.



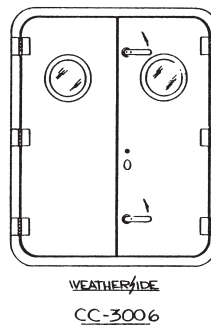
WEATHER SIDE
CC-3003



WEATHER SIDE
CC-3004



WEATHER SIDE
CC-3005



WEATHER SIDE
CC-3006

NOTE

- 1- DOORS ARE RIGHT HAND LOCK (AS SHOWN IN 5/8) UNLESS SPECIFIED OTHERWISE
- 2- DIMENSION "W" & "L" CAN BE AS REQUIRED
- 3- DOOR CAN BE BACKED TO CUSTOMER'S SPEC.
- 4- FIXED LIGHT SIZE 10" DIA LOCATION TO SPEC.

FOR SECTIONAL VIEW SEE DWG.
NO. CC-3019

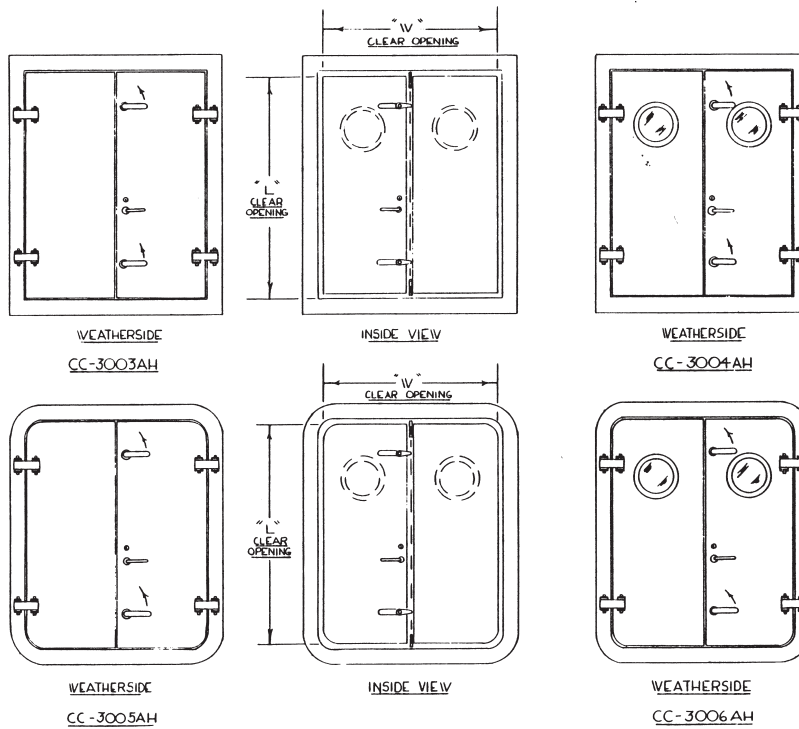
CORNELL-CARR CO.

ROUTE # 26 MONROE, CONNECTICUT

DOUBLE DOOR-WEATHERTIGHT
WITH MORTISE LOCK - SQUARE OF SHOWN CORNER

DES BY ~ EC
DATE ~
FILE ~

CC-3001FH

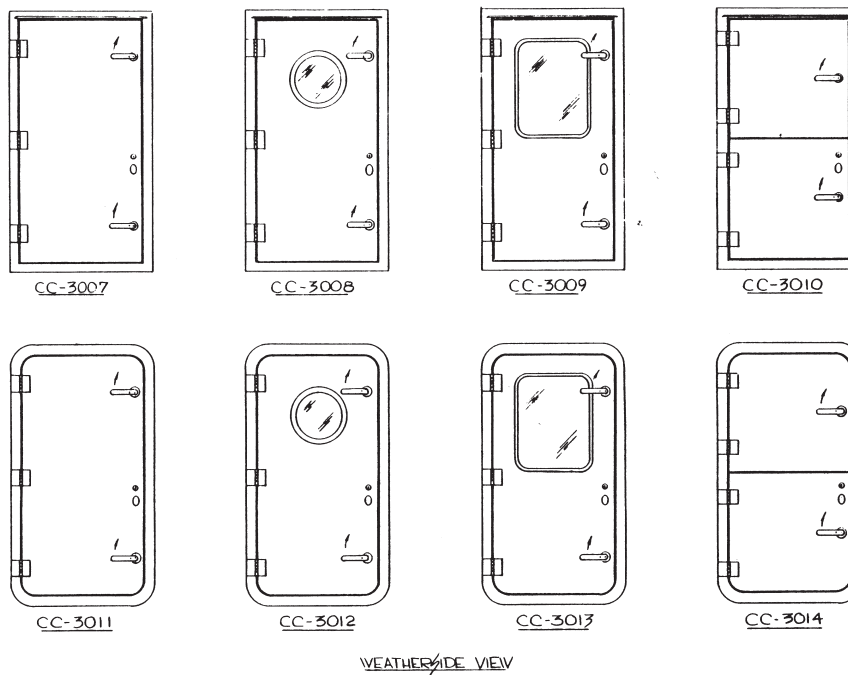


NOTES

- 1- DOORS ARE RIGHT HAND LOCK (AS SHOWN IN $\frac{1}{8}$ UNLESS OTHERWISE SPECIFIED).
- 2- DIMENSION "W" & "L" CAN BE AS REQUIRED
- 3- DOOR CAN BE RACKED TO CUSTOMERS SPEC.
- 4- FIXED LIGHT SIZE 10" DIA. LOCATION TO SPEC.

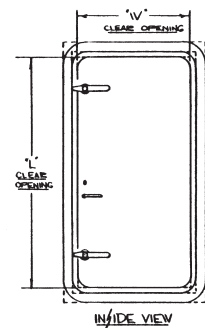
FOR SECTIONAL VIEW SEE DWG.
NO. CC-3019 - STEEL CONSTRUCTION

CORNELL - CARR CO.			
ROUTE # 25	MONROE, CONNECTICUT		
DOUBLE DOOR - WEATHERTIGHT ADJUSTABLE HINGES			
DATE - 1/2/77	REV		
SCALE -		CC-3001AH	A



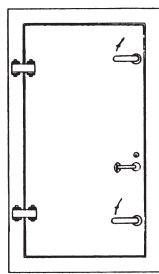
NOTE

- 1- DOORS ARE LEFT HAND (AS SHOWN IN $\frac{1}{8}$) UNLESS SPECIFIED OTHERWISE
- 2- DIMENSION "W" & "L" CAN BE AS REQUIRED.
- 3- DOOR CAN BE RACKED TO CUSTOMERS SPEC.
- 4- FIXED LIGHT SIZE 10" DIA. LOCATION TO SPEC.

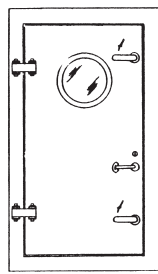


FOR SECTIONAL VIEW SEE DWG.
NO. CC-3015 - STEEL CONSTRUCTION
CC-3016 - STEEL CONSTR. DOOR & SCREEN
CC-3017 - ALUMINUM CONSTRUCTION
CC-3018 - ALUM. CONSTR. DOOR & SCREEN

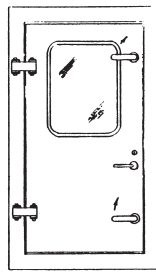
CORNELL - CARR CO.			
ROUTE # 25	MONROE, CONNECTICUT		
SINGLE DOOR - WEATHERTIGHT WITH MOTIVE LOCK - SQUARE OR ROUND CORNERS			
DATE - 1/2/77	REV		
SCALE -		CC-3002FH	B



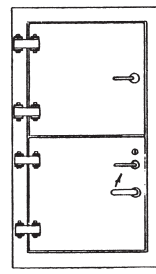
CC-3007AH



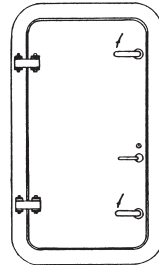
CC-3008AH



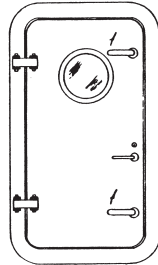
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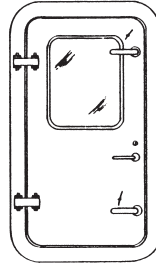
CC-3010AH



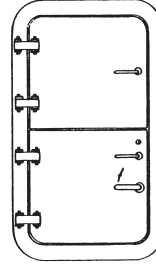
CC-3011AH



CC-3012AH



CC-3013AH

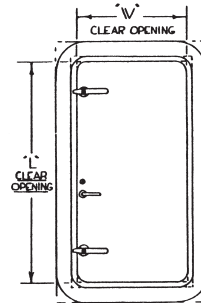


CC-3014AH

WEATHERSIDE VIEW

NOTES

- 1- DOORS ARE LEFT HAND (AS SHOWN IN $\frac{1}{8}$) UNLESS OTHERWISE SPECIFIED.
- 2- DIMENSION "W" CAN BE AS REQUIRED.
- 3- DOOR CAN BE RACKED TO CUSTOMER'S SPEC.
- 4- FIXED LIGHT SIZE 10" DIA. LOCATION TO SPEC.



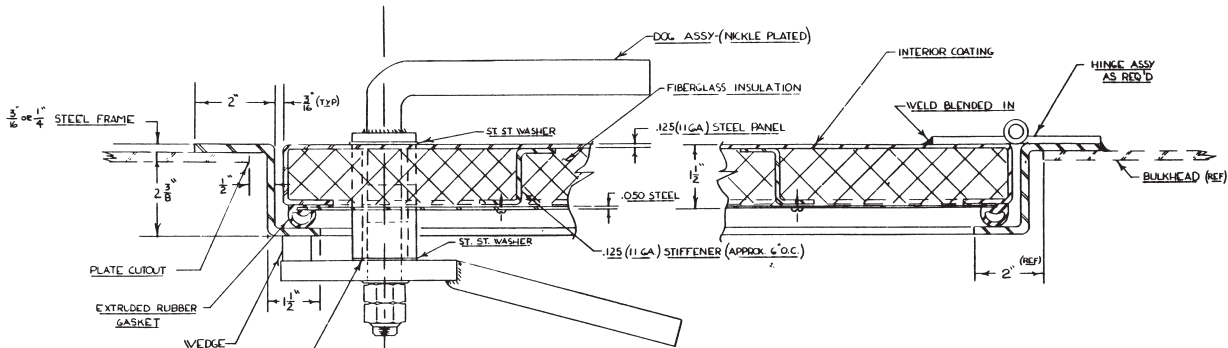
INSIDE VIEW

FOR SECTIONAL VIEW SEE DIVE NO.
 NO. CC-3015 - STEEL CONSTRUCTION
 CC-3016 - STEEL CONST. DOOR & SCREEN
 CC-3017 - ALUMINUM CONSTRUCTION
 CC-3018 - ALUM. CONST. DOOR & SCREEN.

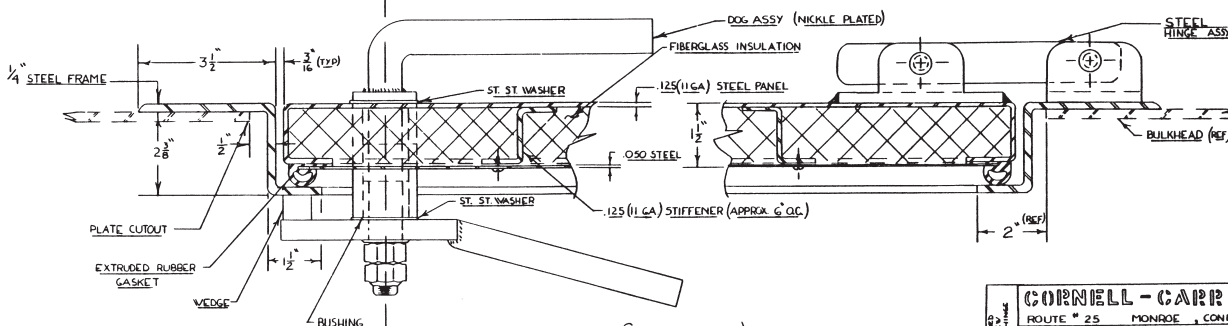
CORNELL - CARR CO.

ROUTE # 25 MONROE, CONNECTICUT
 SINGLE DOOR - WEATHERTIGHT
 ADJUSTABLE HINGES
 FOR BY - JRP
 SCALE - $\frac{1}{8}'' = 1'$
 DATE - 7/27/77

CC-3002AH A



SECTIONAL VIEW
FLUSH HINGES



SECTIONAL VIEW
ADJUSTABLE HINGES

CORNELL - CARR CO.

ROUTE # 25 MONROE, CONNECTICUT
 SECTIONAL VIEW, WEATHERTIGHT DOOR
 STEEL CONSTRUCTION
 FOR BY - JRP
 SCALE - $\frac{1}{8}'' = 1'$
 DATE - 7-28-77

CC-3015 A

WATERTIGHT DOORS AND FRAMES

The CORNELL - CARR COMPANY watertight door assemblies are designed to meet the severest weather conditions of modern shipping and built to meet rugged standards, along with smooth operational qualities. Doors and frames can be flush mounted and secured by bolting or welding. A special stainless steel hinge pin makes adjusting easy and dependable. Dutch Doors are available. A special rust preventative primer paint is applied to all doors.

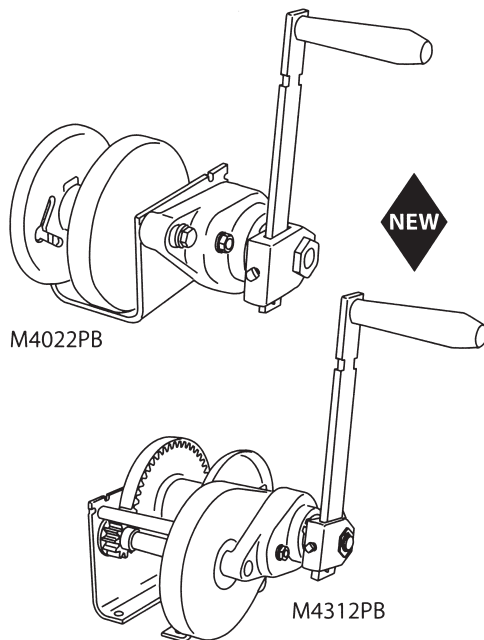
DOOR CAN BE FABRICATED TO BUREAU OF SHIPS DRAWINGS

805-1400050
805-1400056
805-1400057
805-1400059
805-1400062
805-1400064
805-1400065
805-1400066
805-1400069
805-1400070
805-1400071
805-1400073
805-1400074
805-1400075
805-1626433

18", 21" & 25" Raised & Flush Scuttles

REQUEST FOR QUOTATION WATER TIGHT DOOR - SERIES 4000

TYPE - (Drawing. no.)
DESCRIPTION -
QUANTITY -
SIZE - w & I dim. or plate cut out
MATERIAL -
NUMBER DOGS -
HANDINGS -
FIXED LIGHT - (if req'd.)
GLASS THICKNESS
HARDWARE -
PS I -
SPECIAL REQUIREMENTS:



Spur Gear Hand Winches

Up to 2,000 lb capacity

- **Machine Cut Spur Gears** for accurate and long lasting service.
- **Automatic Brake Models** provide positive load control for lifting and lowering operations. Brake models have PB suffix.
- **Corrosion Resistant** zinc and iridescent dichromate plated finish protects against corrosion in harsh environments.
- **Quick Disconnect Anchor** for quickly attaching or removing wire rope equipped with a swagged ball fitting.
- **Bronze and radial ball bearings** provide smooth and efficient operation.
- **Large Diameter Drums** minimize wear to extend wire rope life.
- **Gear Covers** protect gears and help prevent injuries.
- **Stainless Steel Models Available** for harsh environments, see models with SS suffix. Stainless steel models are electro-polished for added corrosion resistance.
- **Wire Rope Assemblies** sold separately.

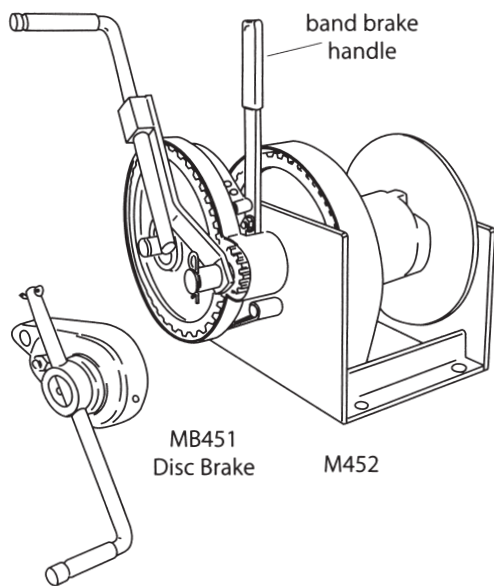
Spur Gear Hand Winches – Configurations and Performance Characteristics

model number	description	load rating (lb)			wire rope dia.	drum capacity (ft) ¹			single gear ratio	double gear ratio	force ² to lift 1000 lb	approx. ship wt. (lb)
		1st layer	mid drum	full drum		1st layer	mid drum	full drum				
M401	500 lb – marine duty (for pulling only)	500	400	300	1/8 3/16	7 4	60 27	130 60	—	—	—	8
M4022	1000 lb – marine duty (for pulling only)	1000	700	500	1/8 3/16	4 3	52 26	130 57	2.85:1	—	40 lb	11
M4022PB	1000 lb – marine duty with brake (for lifting)	1000	700	500	1/8 3/16	4 3	52 26	130 57	2.85:1	—	41 lb	15
M4032	1000 lb – marine duty (for pulling only)	1000	700	500	1/8 3/16	11 7	110 51	250 110	2.85:1	—	40 lb	13
M4032PB	1000 lb – marine duty with brake (for lifting)	1000	700	500	1/8 3/16	11 7	110 51	250 110	2.85:1	—	41 lb	17
M4042PBSS	1000 lb – stainless steel with brake (for lifting)	1000	800	600	1/8 in 3/16 in 1/4 in	12 8 5	110 48 27	240 110 59	3.83:1	—	46 lb (single gear)	24
M4312	2000 lb – marine duty (for pulling only)	2000	1600	1200	3/16 1/4 5/16	8 5 4	48 27 17	110 59 39	3.83:1	14.7:1	20 lb (double gear)	23
M4312PB	2000 lb – marine duty with brake (for lifting)	2000	1600	1200	3/16 1/4 5/16	8 5 4	48 27 17	110 59 39	—	14.7:1	17 lb (double gear)	28
M4312PBSS	2000 lb – stainless steel with brake (for lifting)	2000	1600	1200	3/16 in 1/4 in 5/16 in	8 5 4	48 27 17	110 59 39	—	14.7:1	17 lb (double gear)	28
M4412	2000 lb – marine duty (for pulling only)	2000	1600	1200	3/16 1/4 5/16	18 14 11	97 52 35	210 120 77	3.83:1	14.7:1	20 lb (double gear)	25
M4412PB	2000 lb – marine duty with brake (for lifting)	2000	1600	1200	3/16 1/4 5/16	18 14 11	97 52 35	210 120 77	—	14.7:1	17 lb (double gear)	30

¹ Actual drum capacities may be 25-30% less, due to nonuniform winding. Wire rope tension will also affect drum capacity.

² Approximate handle force required to lift 1000 lb with an empty drum, and maximum handle length.

³ Please contact factory or nearest Thern Distributor for firm fixed price and delivery.



Spur Gear Hand Winches Double Reduction

Up to 10,000 lb capacity

- **Machine Cut Spur Gears** for accurate and long lasting service.
- **Automatic Brake Models** provide positive load control for lifting and lowering operations. Brake models have B suffix.
- **Corrosion Resistant** durable paint finish combined with zinc and iridescent dichromate plating protects against corrosion.
- **Bronze and radial ball bearings** provide smooth and efficient operation.
- **Large Diameter Drums** minimize wear to extend wire rope life.
- **Spring Loaded Ratchets** for positive engagement with gear.
- **Steel Gear Covers** protect gears and help prevent injuries.
- **Handles Adjust** in length to change force required to move load.
- **Wire Rope Assemblies** sold separately.

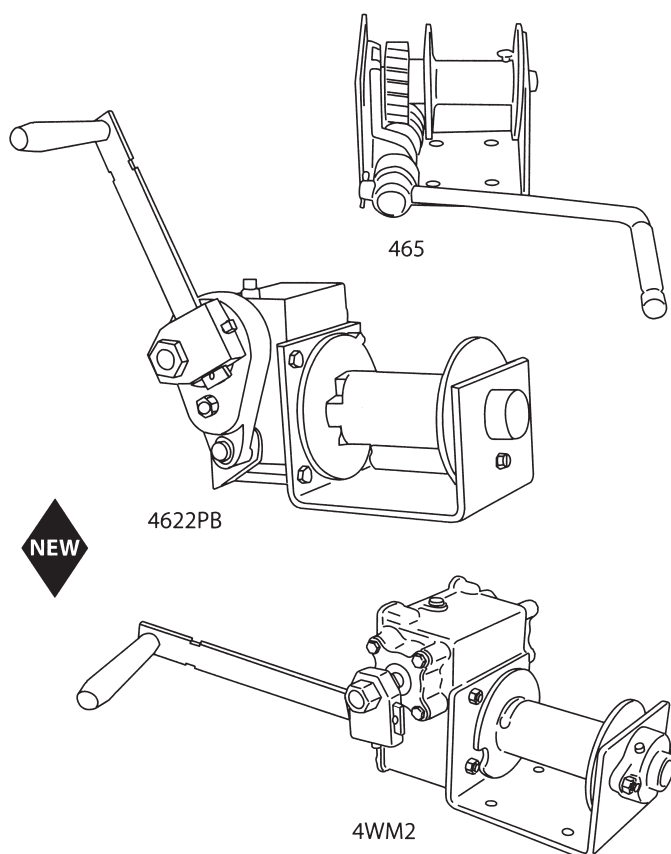
Spur Gear Hand Winches – Configurations and Performance Characteristics

model number	description	load rating (lb)			wire rope dia.	drum capacity (ft) ¹			single gear ratio	double gear ratio	force ² to lift 1000 lb	approx. ship wt. (lb)
		1st layer	mid drum	full drum		1st layer	mid drum	full drum				
M452	4000 lb – marine duty (for pulling only)	4000	3300	2500	1/4 5/16 3/8	23 18 14	130 89 64	300 200 140	4.42:1	19.54:1	10 lb (double gear)	81
M452B	4000 lb – marine duty with brake (for lifting)	4000	3300	2500	1/4 5/16 3/8	23 18 14	130 89 64	300 200 140	—	19.54:1	10 lb (double gear)	89
M452B-A	4000 lb – marine duty with brake (for lifting) 4 inch drum width	4000	3300	2500	1/4 5/16 3/8	13 9 7	83 56 40	190 120 89	—	19.54:1	10 lb (double gear)	75
M492	10,000 lb – marine duty (for pulling only)	10,000	7400	5400	5/16 3/8 1/2	27 21 15	240 170 100	540 390 230	5.00:1	25.00:1	8 lb (double gear)	166
M492B	10,000 lb – marine duty with brake (for lifting)	10,000	7400	5400	5/16 3/8 1/2	27 21 15	240 170 100	540 390 230	—	25.00:1	8 lb (double gear)	173
M492-12	10,000 lb – marine duty (for pulling only) 12 inch drum width	10,000	7400	5400	5/16 3/8 1/2	46 37 27	380 270 160	850 610 360	5.00:1	25.00:1	8 lb (double gear)	183
M492B-12	10,000 lb – marine duty with brake (for lifting) 12 inch drum width	10,000	7400	5400	5/16 3/8 1/2	46 37 27	380 270 160	850 610 360	—	25.00:1	8 lb (double gear)	190
MB451	disc brake only for M452 (for lifting)											13
MB491	disc brake only for M492 and M492-12 (for lifting)											15
HW452	hand wheel only for M452 (for pulling only)											19
HW492	hand wheel only for M492 and M492-12 (for pulling only)											20

¹ Actual drum capacities may be 25-30% less, due to nonuniform winding. Wire rope tension will also affect drum capacity.

² Approximate handle force required to lift 1000 lb with an empty drum, and maximum handle length.

³ Please contact factory or nearest Thern Distributor for firm fixed price and delivery.



Worm Gear Hand Winches

Up to 4000 lb capacity

- **Machine Cut Worm Gears** provide accurate operation and long lasting service.
- **Enclosed Oil Bath** provides continuous lubrication of gears to minimize wear, except on Model 465. On Model 4WM2 oil seals keep oil in and dirt out.
- **Hex Drive** and handle are included. Model 4WM2 can be power driven with a maximum 400 rpm drill-motor.
- **Automatic Brake Models** provide positive load control for lifting. Brake models have a PB or B suffix. Model 4WM2 features an internal mechanical brake.
- **Corrosion Resistant** durable paint finish protects against corrosion in harsh environments.
- **Bronze Bearings** on most models for smooth operation.
- **Large Diameter Drums** minimize wire rope wear.
- **Handles Adjust** in length to change force required to move the load.
- **Mounting Options**³ include floor, wall, or ceiling. Add 10% for factory modification for wall or ceiling mount, adapter plate may be required.
- **Wire Rope Assemblies** sold separately.

Worm Gear Hand Winches – Configurations and Performance Characteristics

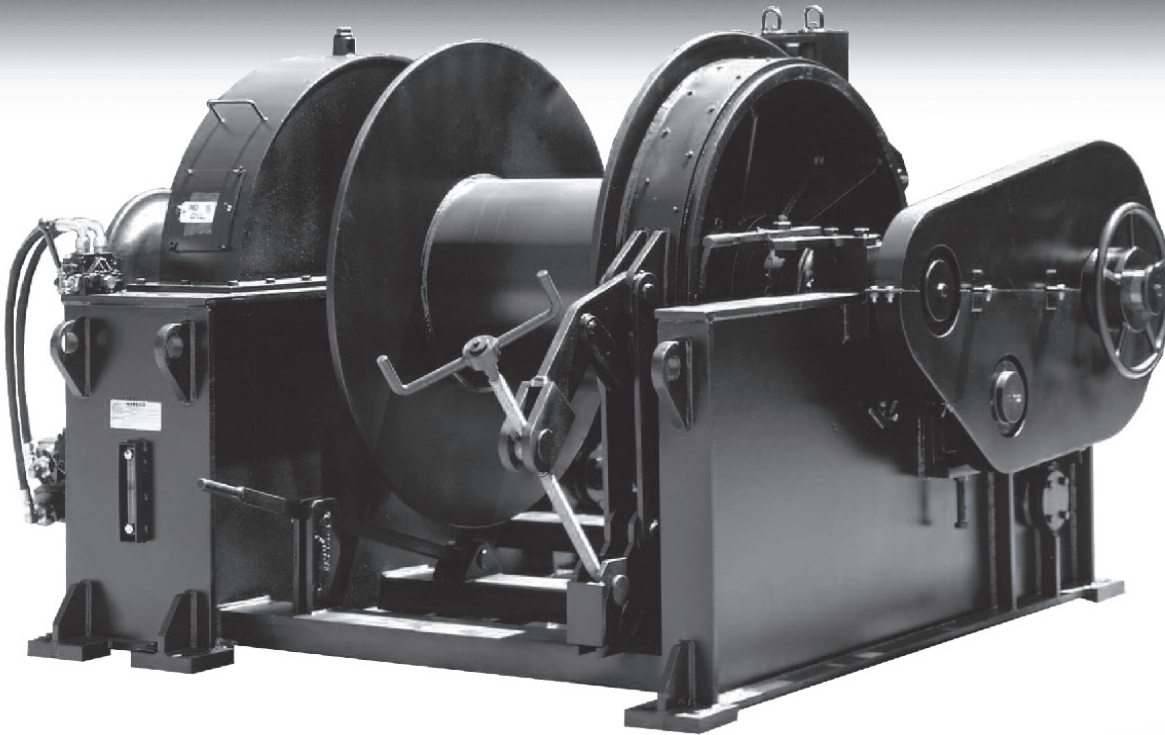
model number	description	load rating (lb)			wire rope dia. (in)	drum capacity (ft) ¹			gear ratio	force ² to lift 1000 lb	approx. ship wt. (lb)
		1st layer	mid drum	full drum		1st layer	mid drum	full drum			
465	750 lb – open gears (recommended for pulling only)	750	600	400	1/8 3/16	7 4	58 27	130 59	20:1	21 lb	12
462	1000 lb – enclosed gearing (recommended for pulling only)	1000	700	500	1/8 3/16	7 4	61 28	140 61	15:1	34 lb	15
4622PB	1000 lb – enclosed gearing with brake (for lifting)	1000	700	500	1/8 3/16	7 4	61 28	140 61	15:1	26 lb	20
472	2000 lb – enclosed gearing (recommended for pulling only)	2000	1700	1300	3/16 1/4 5/16	15 11 8	65 35 23	140 77 52	24:1	24 lb	32
4WM2	2000 lb – enclosed gearing with brake (for lifting)	2000	1500	1200	1/4	11	35	77	32:1	14 lb	43
	ED120BD – electric drill-motor drive kit – for 4WM2 only – 400 rpm – 120 VAC with 1-1/8" hex socket										12
482	4000 lb – enclosed gearing (recommended for pulling only)	4000	3300	2500	1/4 5/16 3/8	23 18 14	140 91 65	300 200 140	26:1	31 lb	97
482B	4000 lb – enclosed gearing with brake (for lifting)	4000	3300	2500	1/4 5/16 3/8	23 18 14	140 91 65	300 200 140	26:1	31 lb	110

¹ Actual drum capacities may be 25-30% less, due to nonuniform winding. Wire rope tension will also affect drum capacity.

² Approximate handle force required to lift 1000 lb with an empty drum, and maximum handle length.

³ Please contact factory or nearest Thern Distributor for firm fixed price and delivery.

NABRICO

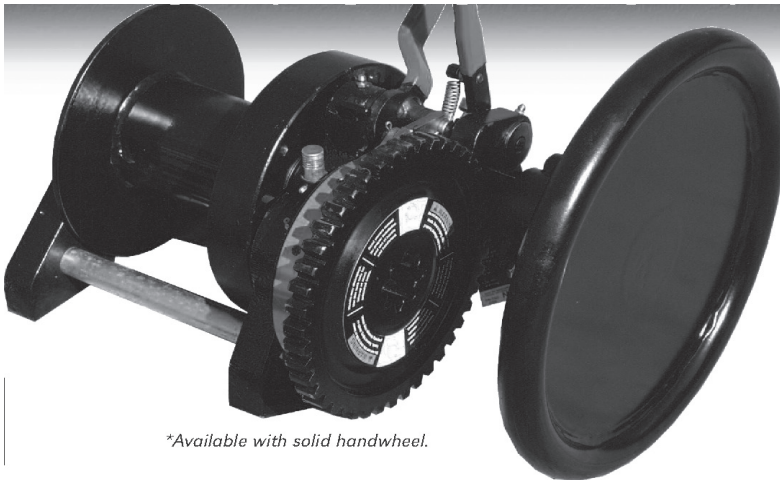


NABRICO ANCHOR WINCH

General Features

- Fabricated steel construction.
- Three coat zinc and epoxy paint system for complete marine environment protection.
- Electric or hydraulic power.
- Jaw clutched drum.
- Single or double warping heads.
- Spur gear reduction operating in oil bath.
- Level wind available.
- Drum band brake and holding dog.
- Drum capacity and line pull to meet customer requirements.

5 TON CAPACITY WINCH



*Available with solid handwheel.

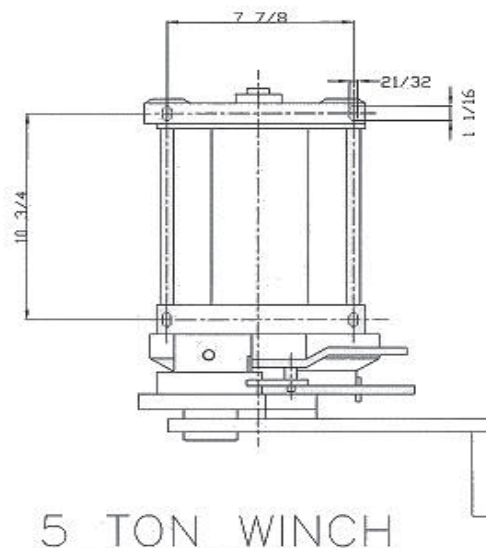


MODEL	LINE PULL SPEED		SHOCK LOAD	HAND BRAKE HOLDING OR DOG
	SLOW	FAST		
5 Ton	10,000	8500	8500 (3 ft. drop)	14,000

ALL ABOVE NUMBERS ARE POUNDS

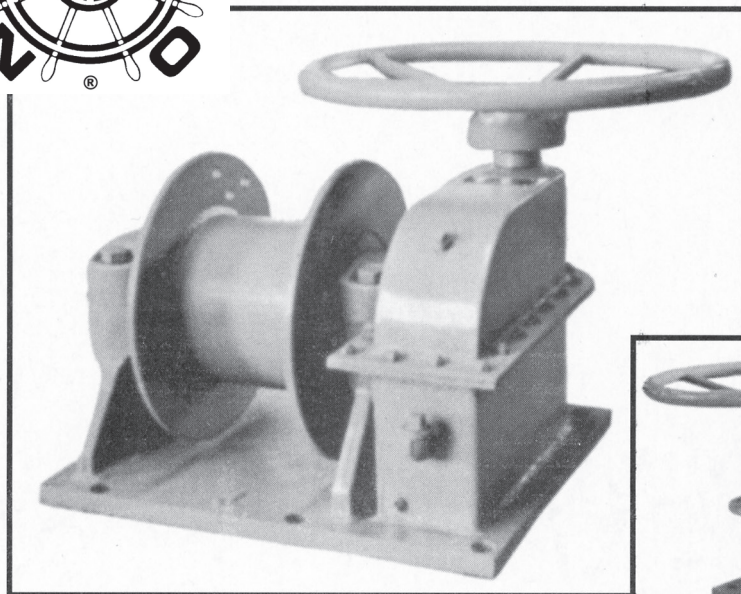
CABLE CAPACITY (FULL DRUM)							
	DRUM WIDTH	1/4	5/16	3/8	7/16	1/2	WEIGHT
5 Ton	6"				200	170	116

- All steel construction.
- Machine cut gears and stainless steel ratchets.
- Bronze brushed bearings.
- Alemite fittings for proper lubrication.
- Positive no-slip tension.
- Fast cranking with handwheel.
- Quick release cam action.
- Full load rated hand brake with stainless steel braking surface.
- Corrosion-resistant hardware.
- Available coatings: blasted and painted or galvanized.

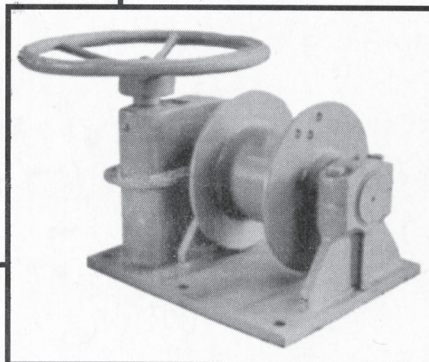




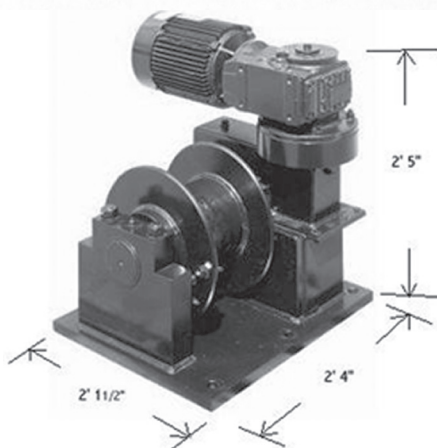
PARKER TOWING WINCHES



Parker Towing Winches have been in the marine market place for more than forty-five years. Still to be marketed under the Parker name but owned by NABRICO, they will benefit from the added support of NABRICO's commitment to quality, inventory maintenance, continuing product improvement and customer service.



- Available in **25-TON SIZES** and in **RIGHT- AND LEFT-HANDED STYLES**.
- **EASY TO INSTALL.** Just bolt to base attachment bars welded to steel deck.
- **CONTINUOUS GOOD CONNECTIONS** without damage or slippage.
- **LITTLE MAINTENANCE** or replacement costs because there is nothing to wear out.
- **SIMPLE ROPE ATTACHMENT** to winch drum.



MODEL	BASE DIMENSION	WEIGHT	CAPACITY OF DRUM	RATING	GEAR RATIO
LR 250	20"X24"	850 lbs.	65' of 1" rope	25 tons	30 to 1
LL 250	20"X24"	850 lbs.	65' of 1" rope	25 tons	30 to 1

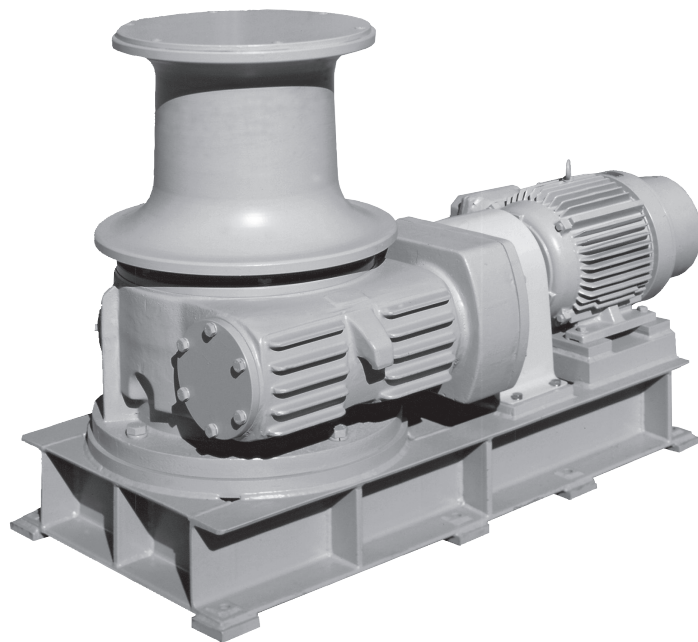
MODEL	MOUNT	HOLDING BRAKE & OR DOG (1)	LINE PULL @ FIRST LAYER OF CABLE				LINESPEED @ FIRST LAYER OF 1 IN. CABLE NO LOAD	DRUM FLANGE DIAM.	DRUM		DRUM CAPACITIES (FT.)					MOTOR	WEIGHT	MOUNTING DIMENSIONS		
			40 TON-429: 1 RATIO, 30 TON-343:1 RATIO						DIAM	WIDTH (2)	CABLE SIZE							WIDTH	LENGTH	HEIGHT
			@ RATED AMPS	@ MOTOR STALL	HAND CRANK @ MOTOR SHAFT	HAND CRANK @ TOP SHAFT														
DF-500			LBS.	LBS.	LBS.	LBS.	FPM	IN.	IN.	IN.	1/2	5/8	3/4	7/8	1	HP	LBS.			
25-10	Right or Left	25	5,800	7,500	NA	5,000	25.0	14.75	8.00	10.25	230	195	125	90	65	5.4	1,400	2' 4"	2' 11/2"	2' 5"



CAPSTANS

ELECTRIC

- Vertical thru-deck or above deck models.
- Fabricated steel construction.
- Polished steel capstan head.
- Head size to 36" diameter.
- Single or variable speeds available.
- Line pull up to 30,000 lbs.
- Static or bollard pull up 300,000 lbs.
- Zinc and epoxy coatings for full marine environment protection.
- Planetary or worm and spur gearing.



HYDRAULIC

- Vertical thru-deck or above deck models.
- Fabricated steel construction.
- Polished steel capstan head.
- Head size to 36" diameter.
- Single or variable speeds available.
- Line pull up to 30,000 lbs.
- Static or bollard pull up 300,000 lbs.
- Zinc and epoxy coatings for full marine environment protection.
- Planetary or worm and spur gearing.
- Model shown:
 - 16" diameter polished steel head.
 - Rated line pull 12,500 lbs. at 30 fpm.
 - Designed for above deck mounting.
 - Other sizes and features available.



DF-529 Low Profile Winch



Features

- Revolutionary new high load release dog system with anti-backlash drag brake that is activated automatically with the release of the dog.
- All steel construction.
- Proven 40 ton holding capacity.
- Precision machined side plates, gears, ratchet, and shafts to maintain proper gear tooth engagement and minimize wear.
- Easy cable attachment and solid drum gear.
- Right and left hand models for use in pairs.
- Quick release hand brake.
- Lever ratchet for extra high tension.
- Low profile design.
- Available in D-Ring, Button, and Doubler plate mounts.
- Bolted connections for easy maintenance.
- Hot dipped galvanized or blasted and painted.
- 22-3/4"H X 12-1/2"W X 12-3/4"L.

Perspective...

FOR ALL OF YOU WHO STILL THINK YOU ARE HAVING A BAD DAY...

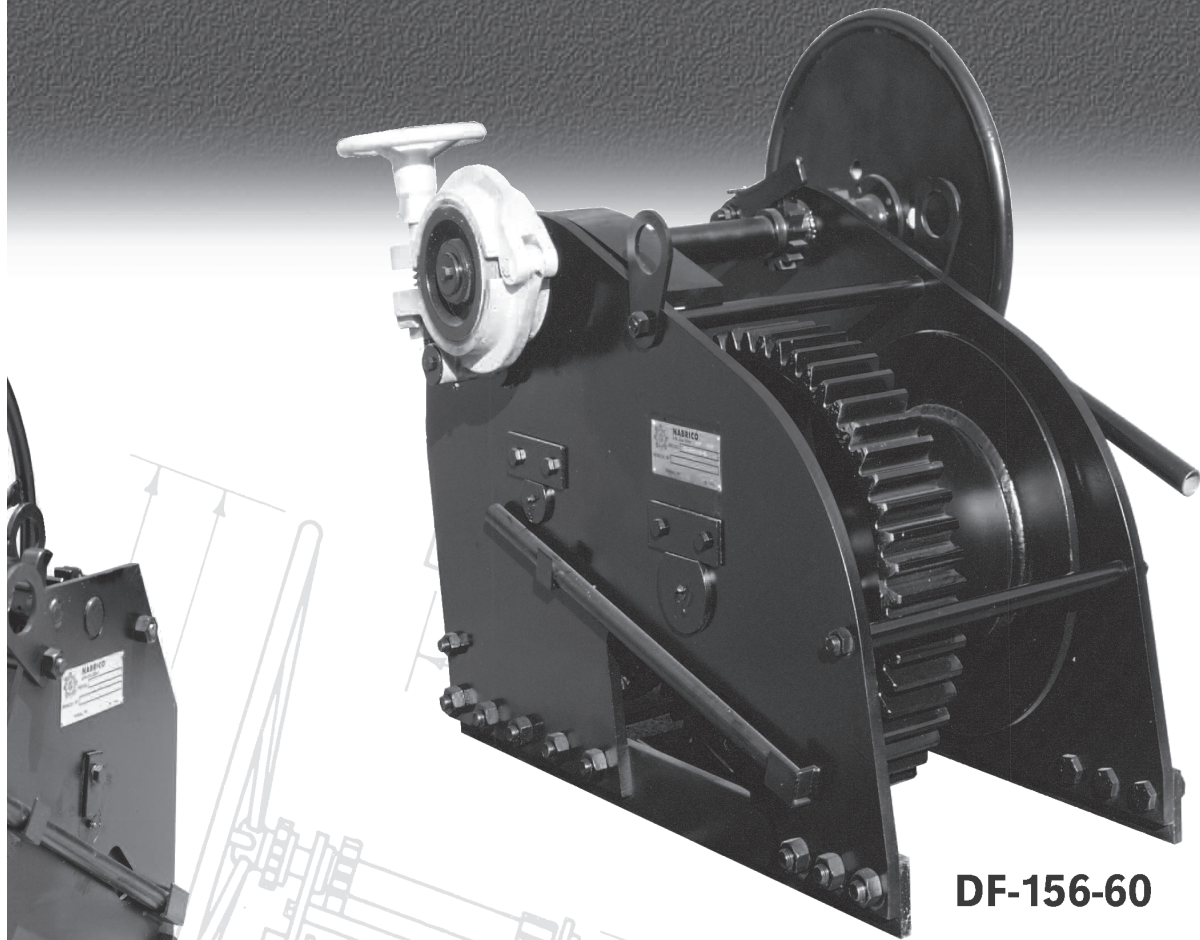
In a hospital's Intensive Care Unit, patients always died in the same bed, on Sunday morning, at about 11:00 a.m., regardless of their medical condition.

This puzzled the doctors and some even thought it had something to do with the supernatural. No one could solve the mystery as to why the deaths occurred around 11:00 a.m. on; Sunday, so a worldwide team of experts was assembled to investigate the cause of the incidents.

The next Sunday morning, a few minutes before 11:00 a.m., all of the doctors and nurses nervously waited outside the ward to see for themselves what the terrible phenomenon was all about. Some were holding wooden crosses, prayer books, and other holy objects to ward off the evil spirits.

Just when the clock struck 11:00, Pookie Johnson, the part-time Sunday sweeper, entered the ward and unplugged the life support system so he could use the vacuum cleaner.

MANUAL WINCHES



DF-156-60

Features

- All steel construction.
- Machine cut gears and stainless steel ratchets.
- Bronze bushed bearings.
- Alemite fittings for proper lubrication.
- True right and left hand models for use in pairs.
- Positive no-slip tension.
- Fast cranking with handle.
- Quick release cam action.
- Full load rated hand brake with Stainless Steel braking surface.
- Corrosion-resistant hardware.
- Lever ratchet for extra high tension.
- Blasted and painted, galvanized and other coatings available.

MODEL	MOUNT	DOG HOLDING (1)	LINE PULL (1)		GEAR RATIO	DRUM FLANGE DIAM.	DRUM		DRUM CAPACITIES (FT.)										WEIGHT (LBS.)	OVERALL DIMENSIONS		
			HANDWHEEL ONE MAN	RACHET W/ STANDARD EXTENSION ONE MAN			DIAM	WIDTH (2)	CABLE SIZE											WIDTH	HEIGHT	LENGTH
DF-156		S.I.	LB.	LB.		IN.	IN.	IN.	7/16	1/2	5/8	3/4	7/8	1	1-1/8	1-1/4	1-1/2					
10-6-M	Right/Left	10	5,200	7,000	5.57:1	18	8.625	6.0	353	317	174	129						500	1'7 7/16"	3'4 3/4"	4'4"	
20-7-M	Right/Left	20	14,000	14,400	18.57:1	16	10.75	7.25	270	186	109	57	39	21				850	2'0 1/4"	3'3 5/16"	5'7"	
40-11-M	Right/Left	40	14,000	17,800	18.57:1	19	12.75	11.25			287	176	130	84	36	26		1250	2'5 1/40"	3'6"	6'9"	
40-18-M	Right/Left	40	14,000	17,800	18.57:1	19	12.75	18.125			463	279	151	139	58	51		1350	3'0 1/4"	3'6"	6'9"	
60-11-M	Right/Left	60	24,000	28,800	27.0:1	24	14.00	10.625			572	325	262	200	119	111	62	2100	2'8 7/8"	4'2"	6'8"	

For additional information, drawings and specifications contact NABRICO.

CERTIFIED HAND WINCH SPECIFICATIONS

MODEL	MOUNT	DOG HOLDING (1)	LINE PULL (1)		GEAR RATIO	DRUM FLANGE DIAM.	DRUM	
			HANDWHEEL ONE MAN	RATCHET W/ STANDARD EXTENSION ONE MAN			DIAM.	WIDTH (2)
DF-156		S.T.	LB.	LB.		IN.	IN.	IN.
10-6-M	Right or Left	10	5,200	7,000	5.57:1	18	8.625	6.00
60-11-M	Right or Left	60	24,000	28,800	27.0:1	24	14.00	10.625

(1) Holding & line pull ratings are for first layer of cable.
(2) Wider drum widths are available on request.

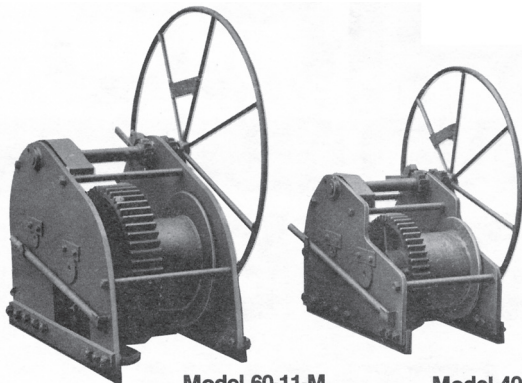


MOUNTING DIMENSIONS

MODEL	DRUM CAPACITIES (FT.)										WEIGHT (LB.)	A	B	C	D	E	F	G
	CABLE SIZE																	
DF-156	7/16	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2								
10-6-M	353	317	174	129							500	1'7 7/8"	9'1/8"	2'1"	3'0"	3'4 1/4"	1'9"	2'7 1/4"
60-11-M			572	325	262	200	119	111	62		2100	2'8 1/8"	1'10 1/2"	2'10 1/4"	4'6 7/8"	4'10 1/2"	3'10 1/4"	2'9 1/8"

(Figures shown in parenthesis are in centimeters.)

The specifications and details described by drawings or text in this literature are subject to change without notice. Winches portrayed in drawings, photographs and copy are not designed for lifting or lowering persons or equipment.



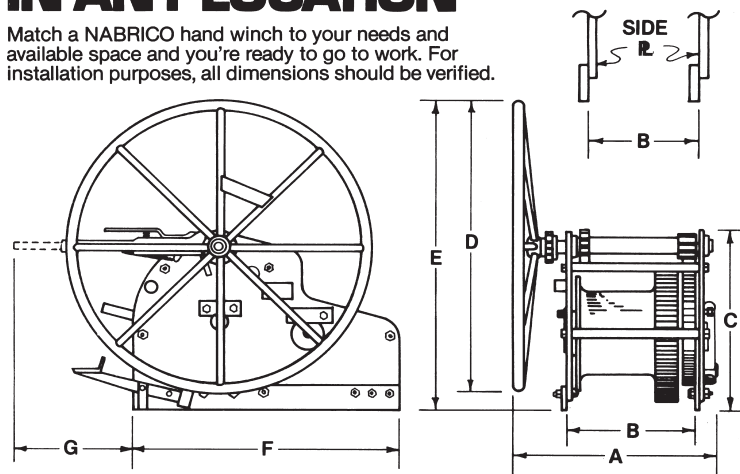
Model 60-11-M

Model 40-11-M

Model 10-6-M

TO HANDLE EVERY JOB, IN ANY LOCATION

Match a NABRICO hand winch to your needs and available space and you're ready to go to work. For installation purposes, all dimensions should be verified.



FEATURES

- All steel construction.
- Machine cut gears and ratchets.
- Bronze bushed bearings.
- Alemite fittings for proper lubrication.
- True right and left hand models for use in pairs.
- Positive no-slip tension.
- Fast cranking with handle.
- Quick release action.
- Foot brake for run-out control.
- Lever ratchet for extra high tension.



NABRICO



DF-3 Hand Winch

Features & Specifications

- Revolutionary new high load release dog system.
- High load release brake with secondary anti-backlash drag brake that is activated automatically with the release of the dog.
- High load release brake is a multi-disc system that incorporates all stainless steel moving parts.
- Fastest acting and most powerful brake available.
- 4 bolt hub removable handwheel.
- New simpler heavy duty ratchet assembly with no springs or levers.
- Totally enclosed drive train with the smallest deck foot print in the industry.
- Minimal maintenance.
- Easy to repair.
- All stainless steel and silicon bronze fasteners including separator rods.
- 3-ply conveyor belt covers (damage and corrosion-resistant).
- Saltwater package standard with 3-step paint system.
- Galvanized coating available.
- Heaviest winch in its class.
- True right and left hand models for use in pairs.

MODEL	MOUNT	HOLDING DOG & OR BRAKE	LINE PULL @ FIRST LAYER		DRUM CAPACITIES (FT.)				WEIGHT	DIMENSIONAL DATA		
			HANDWHEEL ONE MAN	RACHET W/ STANDARD EXTENSION ONE MAN	5/8	3/4	7/8	1		W	L	H
DF-3-20/30	RIGHT OR LEFT	30 TONS	14000	22000	233	141	123	67	1109	18 5/8	22	35 1/2
DF-3-40	RIGHT OR LEFT	40 TONS	14000	18000	285	173	150	83	1567	19 1/2	23 1/4	43 1/2



A.2 Parts Breakdown (cont'd)

DF-3 (20 / 30 Ton) Manual Upright Winch Parts List		
(refer to winch drawing for location)		
Part Description	Quantity	DF-3 (20/30 Ton) Part Numbers
Heavy Hex Nut 3/4" (SS)	12	536
Hex Head Bolt 1/2" x 2" (SS)	1	537
Hex Head Bolt 3/4" x 2-1/2" (SS)	12	538
Hex Nut 7/8" (SS)	12	539
Lock Washer 7/8" (SS)	12	540
Washer 9/16" ID x 2-1/2" OD (SS)	1	543
Hex Head Bolt 3/8" x 1" (SS)	6	545
Lock Washer 3/8" (SS)	6	546
Hex Head Bolt 5/8" x 1"	2	11746
Flat Washer 5/8" (Brass)	2	33892
Key (Handwheel Hub) 3/8" SQ x 1-3/4"	1	69833
Locking Dog Gear	1	70262
Hand Wheel Assembly with Speed Handle	1	70322
Hex Head Bolt 1/2" x 1" (SS)	4	70521
Lock Washer 1/2" (SS)	4	70584
Key (Drive Pinion) 3/8" SQ x 2-1/2"	1	71277
Key (Locking Dog Gear) 3/8" SQ x 2-1/2"	1	
Drive Pinion	1	71285
Intermediate Shaft Collar	1	71331
Intermediate Gear Assembly	1	71358
Drum Washer	1	82465
Drum Pipe Spacer	1	82481
Pipe Separator Rod (SS)	6	84338
Slotted Hex Nut 5/8" (Brass)	2	93629
Base Bar	2	101500
Drum Assembly	1	101575
Drum Shaft	1	101578
Intermediate Shaft	1	101579
Keeper Plate (BIG)	1	101650
Keeper Plate (small)	1	101651
Locking Dog (with bronze bushing)	1	101662
Brake Band Assembly	1	101663
Top Plate	1	101676
Drive Shaft	1	101679
Pipe Spacer (drive shaft)	1	101680
Brake Drum	1	101681
Pipe Spacer (hand ratchet area)	1	101682
Key (Ratchet Gear) 1/2" SQ x 1-5/8"	1	101686
Washer 1-9/16" ID x 2-11/16" OD (SS)	1	101688
Ratchet Gear	1	101689
Hand Wheel Hub Insert (SS)	1	101691
Pipe Separator	6	105000
Cable Guard Plate	1	105005

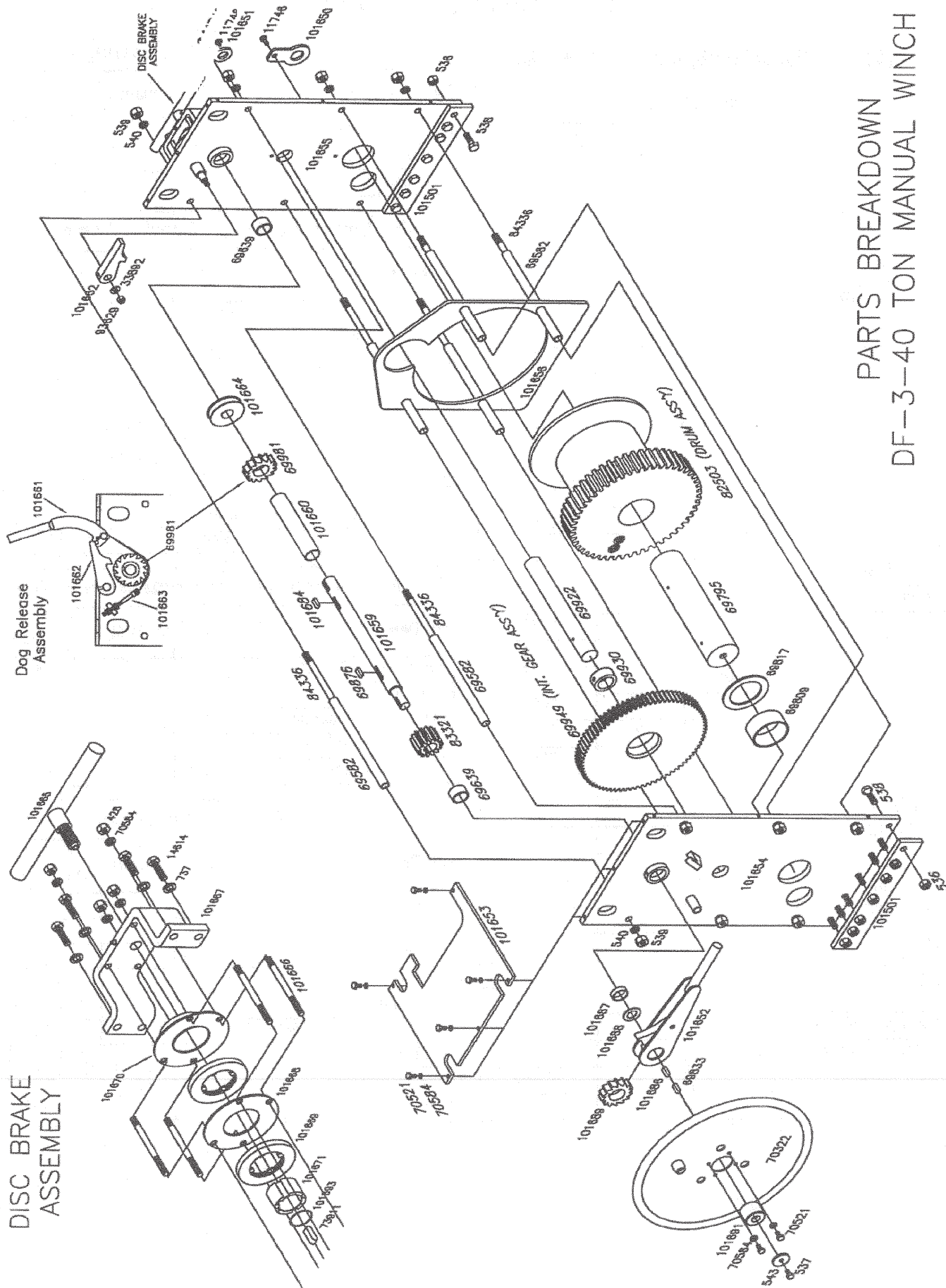
DF-3 Bushings and Bearings		
Part Description	Quantity	DF-3 (20/30 Ton) Part Numbers
Drive Shaft Bushing	2	71188
Drum Gear Bushing	2	71226
Intermediate Gear Bushing	1	71382

DF-3 Left Hand or Right Hand Specific Components		
Part Description	Quantity	DF-3 (20/30 Ton) Part Numbers
Left Hand Winch		
Hand Ratchet Assembly	1	101652
Locking Dog Handle Assembly	1	101661
Side Plate Assembly (Hand Wheel Side)	1	101677
Side Plate Assembly (Disc Brake Side)	1	101678
Right Hand Winch		
Side Plate Assembly (Hand Wheel Side)	1	101694
Side Plate Assembly (Disc Brake Side)	1	101695
Locking Dog Handle Assembly	1	101696
Hand Ratchet Assembly	1	101698

DF-3 Miscellaneous Components (not shown in drawings)		
Part Description	Quantity	DF-3 (20/30 Ton) Part Numbers
Cover Mounting Stud 3/8" x 1-1/2"	10	549
Brass Wing Nut 3/8"	10	550
Ratchet Handle Extension	1	70323
Protective Rubber Cover	2	80223
U-Bolt with Fasteners (7/8" Wire Rope)	1	82562

DF-3 Disc Brake Assembly		
Part Description	Quantity	DF-3 (20/30 Ton) Part Numbers
Hex Nut 1/2" (SS)	4	428
Lock Washer 5/8" (SS)	4	737
Hex Head Bolt 5/8" x 2" (SS)	4	14614
Sleeve (Disc Brake)	1	22101
Key (Brake Sleeve) 3/8" SQ x 1-3/4"	1	69833
Lock Washer 1/2" (SS)	4	70584
Handle Assembly	1	101665
Threaded Rod (SS)	4	101666
Brake Housing	1	101667
Engaging Plate	1	101668
Brake Disc	2	101669
Engaging Cap	1	101670
Rubber O-Ring	1	101693

DISC BRAKE ASSEMBLY



PARTS BREAKDOWN DF-3-40 TON MANUAL WINCH

A.2 Parts Breakdown (cont'd)

DF-3 (40 Ton) Manual Upright Winch Parts List		
(refer to winch drawing for location)		
Part Description	Quantity	DF-3 (40 Ton) Part Numbers
Heavy Hex Nut 3/4" (SS)	14	536
Hex Head Bolt 1/2" x 2" (SS)	1	537
Hex Head Bolt 3/4" x 2-1/2" (SS)	14	538
Hex Nut 7/8" (SS)	12	539
Lock Washer 7/8" (SS)	12	540
Washer 9/16" ID x 2-1/2" OD (SS)	1	543
Hex Head Bolt 5/8" x 1"	2	11746
Flat Washer 5/8" (Brass)	2	33892
Pipe Separator	6	69582
Drum Shaft	1	69795
Drum Pipe Spacer	1	69809
Drum Washer	1	69817
Key (Handwheel Hub) 3/8" SQ x 1-3/4"	1	69833
Key (Drive Pinion) 1/2" SQ x 2-3/4"	1	69876
Intermediate Shaft	1	69922
Intermediate Shaft Collar	1	69930
Intermediate Gear Assembly	1	69949
Locking Dog Gear	1	69981
Hand Wheel Assembly with Speed Handle	1	70322
Hex Head Bolt 1/2" x 1" (SS)	9	70521
Lock Washer 1/2" (SS)	9	70584
Drum Assembly	1	82503
Drive Pinion	1	83321
Pipe Separator Rod (SS)	6	84336
Slotted Hex Nut 5/8" (Brass)	2	93629
Base Bar	2	101501
Keeper Plate (BIG)	1	101650
Keeper Plate (small)	1	101651
Top Plate	1	101653
Cable Guard Plate	1	101656
Drive Shaft	1	101659
Pipe Spacer (drive shaft)	1	101660
Locking Dog (with bronze bushing)	1	101662
Brake Band Assembly	1	101663
Brake Drum	1	101664
Key (Locking Dog Gear) 1/2" SQ x 2-1/2"	1	101684
Key (Ratchet Gear) 1/2" SQ x 1-5/8"	1	101686
Pipe Spacer (hand ratchet area)	1	101687
Washer 1-9/16" ID x 2-11/16" OD (SS)	1	101688
Ratchet Gear	1	101689
Hand Wheel Hub Insert (SS)	1	101691

DF-3 Bushings and Bearings		
Part Description	Quantity	DF-3 (40 Ton) Part Numbers
Drive Shaft Bushing	2	69639
Intermediate Gear Bushing	1	69973
Drum Gear Bushing	2	82511

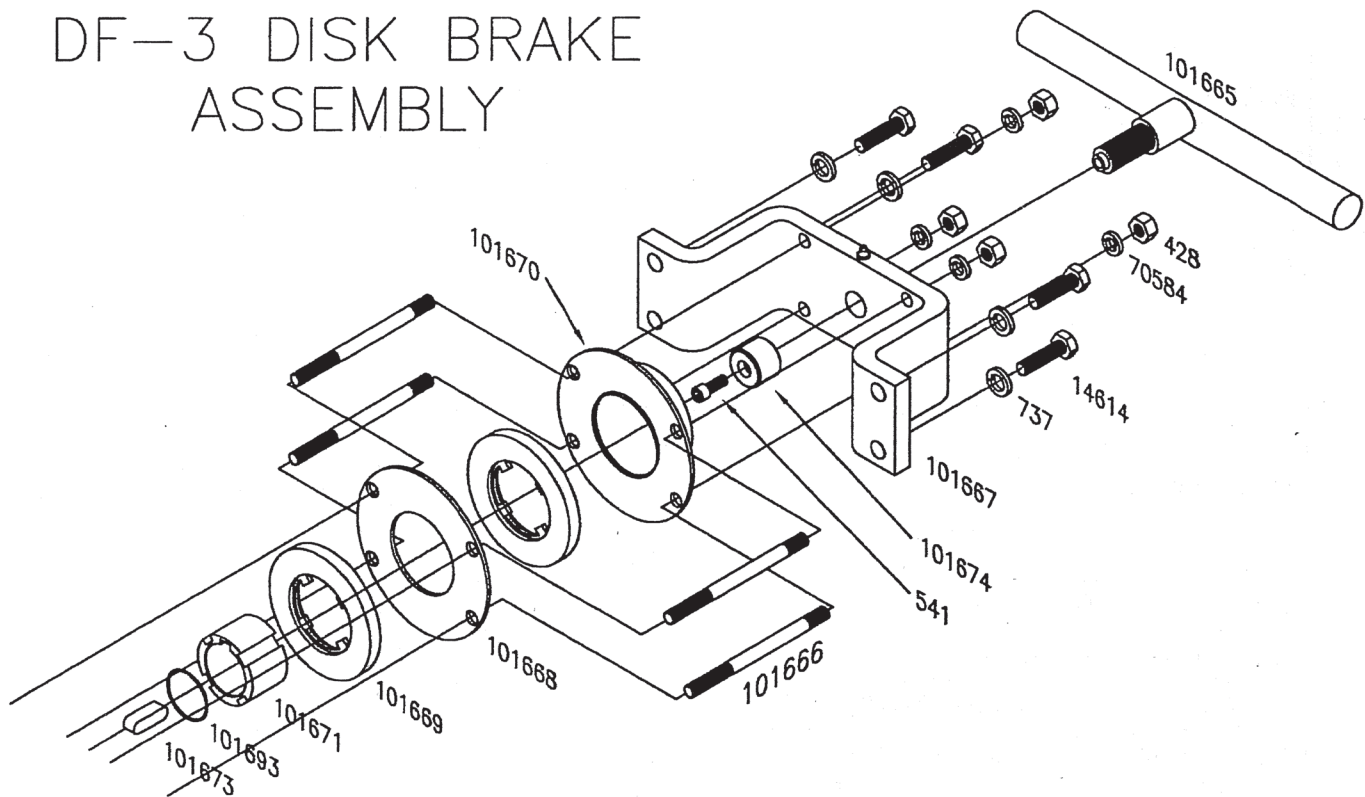
DF-3 Left or Right Hand Specific Components		
Part Description	Quantity	DF-3 (40 Ton) Part Numbers
Left Hand Winch		
Hand Ratchet Assembly	1	101652
Side Plate Assembly (Hand Wheel Side)	1	101654
Side Plate Assembly (Disc Brake Side)	1	101655
Locking Dog Handle Assembly	1	101661
Right Hand Winch		
Locking Dog Handle Assembly	1	101696
Hand Ratchet Assembly	1	101698
Side Plate Assembly (Hand Wheel Side)	1	101699
Side Plate Assembly (Disc Brake Side)	1	101707

DF-3 Miscellaneous Components (not shown in drawings)		
Part Description	Quantity	DF-3 (40 Ton) Part Numbers
Cover Mounting Stud 3/8" x 1-1/2"	10	549
Brass Wing Nut 3/8"	10	550
Ratchet Handle Extension	1	70323
Protective Rubber Cover	2	80243
U-Bolt with Fasteners (1" Dia. Wire Rope)	1	82570

DF-3 Disc Brake Assembly		
Part Description	Quantity	DF-3 (40 Ton) Part Numbers
Hex Nut 1/2" (SS)	4	428
Lock Washer 5/8" (SS)	4	737
Hex Head Bolt 5/8" x 2" (SS)	4	14614
Lock Washer 1/2" (SS)	4	70584
Key (Brake Sleeve) 1/2" SQ x 1-3/4"	1	73911
Handle Assembly	1	101665
Threaded Rod (SS)	4	101666
Brake Housing	1	101667
Engaging Plate	1	101668
Brake Disc	2	101669
Engaging Cap	1	101670
Sleeve (Disc Brake)	1	101671
Rubber O-Ring	1	101692

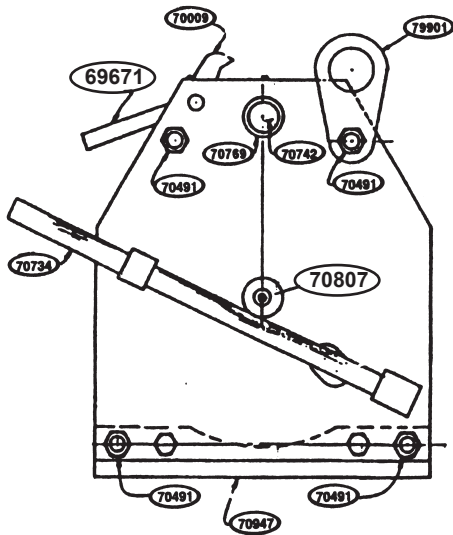
A.2 Parts Breakdown (cont'd)

DF-3 DISK BRAKE ASSEMBLY

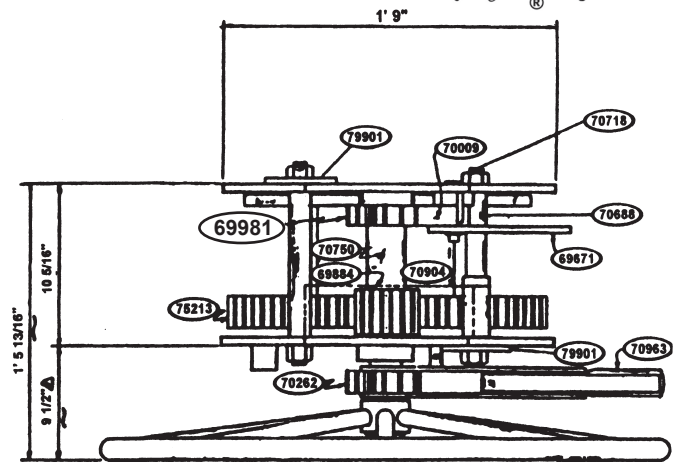


DF-3 Disk Brake Assembly			
Part Description	Quantity	DF-3 (20/30 Ton) Part Numbers	DF-3 (40 Ton) Part Numbers
Hex Nut 1/2" (SS)	4	428	428
SHCS 3/8" x 1" (SS)	1	541	541
Lock Washer 5/8" (SS)	4	737	737
HH Bolt 5/8" x 2" (SS)	4	14614	14614
Lock Washer 1/2" (SS)	4	70584	70584
Handle Assembly	1	101665	101665
Threaded Rod (SS)	4	101666	101666
Brake Housing	1	101667	101667
Engaging Plate	1	101668	101668
Brake Disk	2	101669	101669
Engaging Cap	1	101670	101670
Sleeve (Disk Brake)	1	22101	101671
Key (1/2" SQ)	1	22103	101673
Handle Stop	1	101674	101674
Rubber O-Ring	1	101693	101692

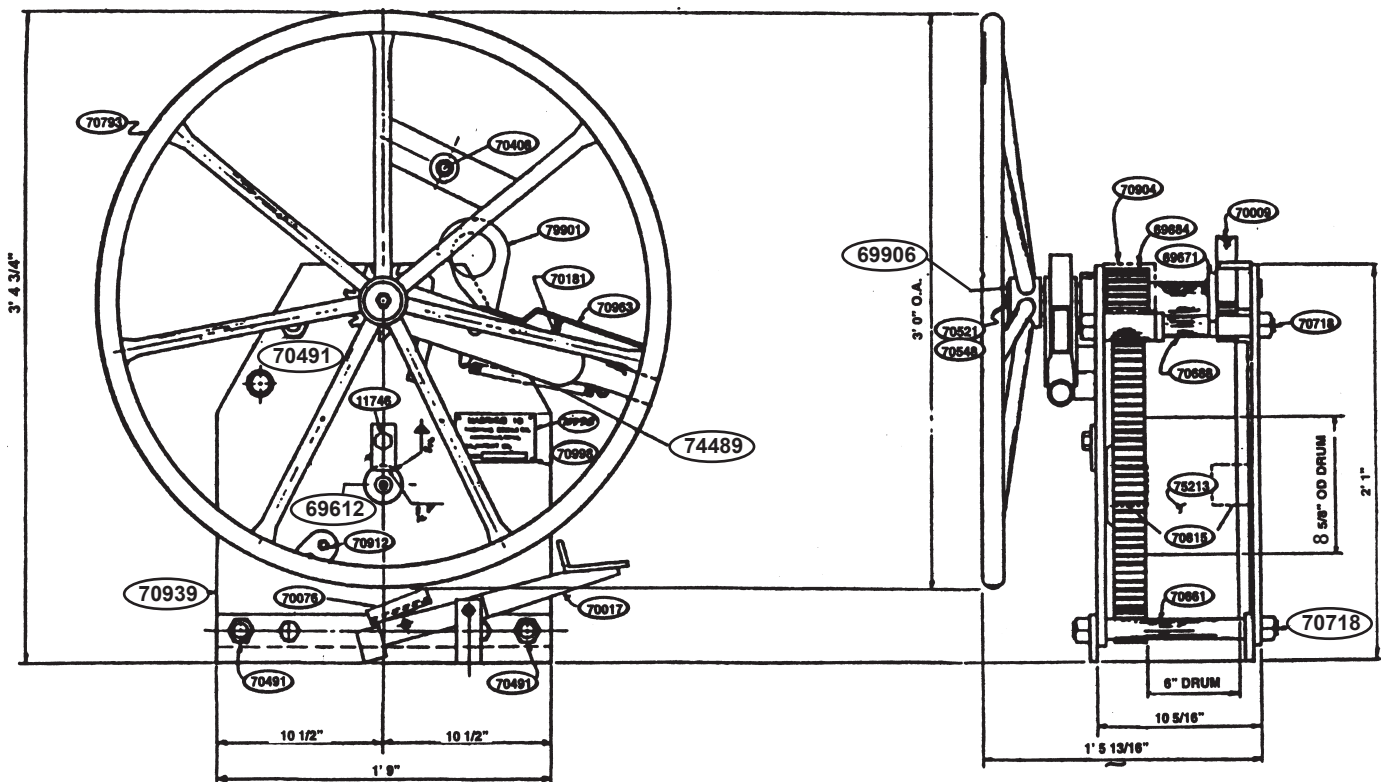
10TON MANUAL WINCH



LEFT SIDE ELEVATION



PLAN



RIGHT SIDE ELEVATION

FRONT ELEVATION

Guidry saved de olives.

Guidry went to de bar and ordered martini after martini. Each time he took de olives and put dem in a jar. When de jar was full and all de drinks finished, Guidry started to leave.

"S'cuse me," said a customer at de udder end of de bar. He was puzzled over what Guidry had done. "What was dat all bout'?"

"Nutin." said de Guidry . "my wife jus sent me out for a jar of olives."

10 TON MANUAL WINCH

PART NO.	QUAN.	DESCRIPTION
11746	1	5/8" x 1" Lg. H/H Machine Bolt
69612	1	Keeper Plate
69671	1	Locking Pawl Dog Assembly
69884	1	Drive Pinion
69906	1	Washer
69981	1	Locking Gear
70009	1	Locking Pawl
70017	1	Brake Assembly
70076	1	Brake Shoe Assembly
70181	1	Latch Spring (Compression)
70262	1	Ratchet Gear
70408	1	Handle
70491	8	7/8"-9NC Hex Nut
70521	1	1/2"-13NC x 1" Lg. H/H Machine Bolt
70548	1	1/2" Lockwasher
70572	4	#6 x 5/16 Lg. Drive Screw
70661	2	Pipe Separator
70688	2	Pipe Separator
70718	4	Pipe Separator Rod
70734	1	Ratchet Handle Extension
70742	1	Drive Shaft
70750	1	Pipe Spacer
70769	2	Drive Shaft Bearing
70793	1	Handwheel Assembly
70807	1	Drum Shaft
70815	2	Drum Shaft Bearing
70904	1	Drive Pinion Guard
70912	1	Cable Clamp
70939	1	Right Side Plate Assembly
70947	1	Left Side Plate Assembly
70963	1	Ratchet Handle Assembly
70998	1	Name Plate
74489	1	Ratchet Pawl Spring
75213	1	Drum Assembly
79901	2	Lifting Lug

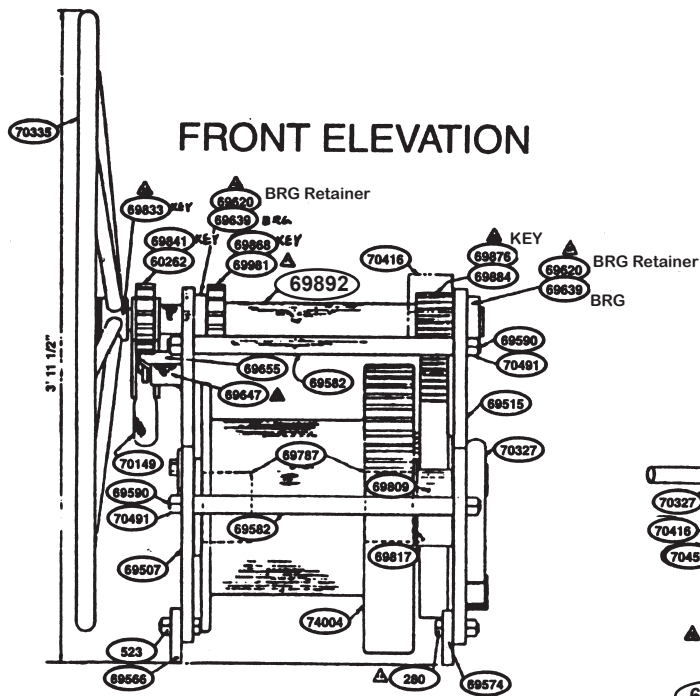
Boudreaux is sick

Boudreaux wasn't feeling too good de udder night. At about 2:00AM he called Doc Thibodeaux and axed him, "Hey Doc, how much you charge for a house call?" Ole Doc Thibodeaux sleepily answered "Twenty-five dollars." Boudreaux den axed, "Mais, how much you charge for an office viseet" Thibodeaux tells him "Fifteen dollars." Boudreaux says, "Mais. OK, I'll meet you at your office in fifteen minutes!"

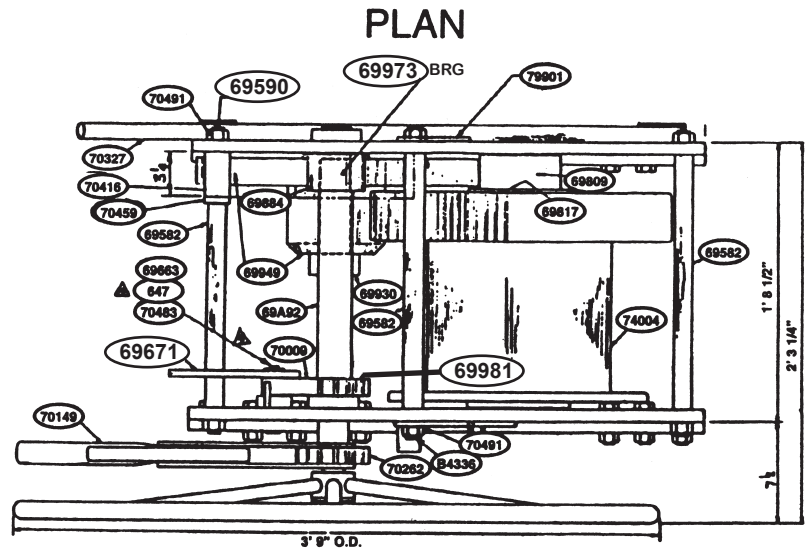
PARTS LIST FOR LEFT HAND WINCH

71005	1	Left Side Plate Assembly
71013	1	Right Side Plate Assembly
70955	1	Right Hand Ratchet Assembly
71048	1	Left Hand Pinion Guard

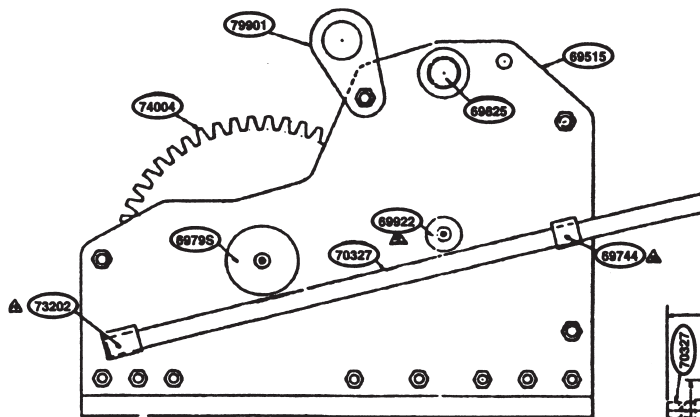
40 TON MANUAL WINCH



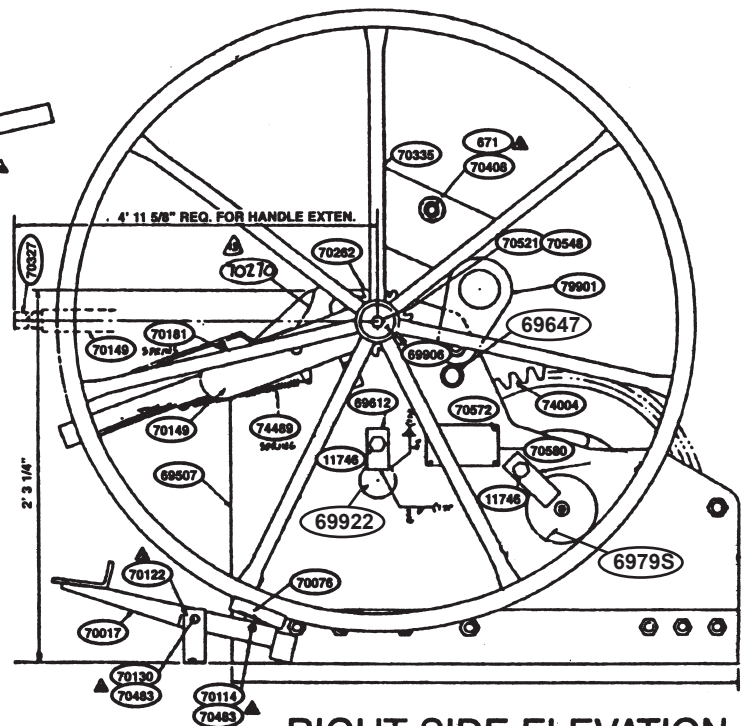
FRONT ELEVATION



PLAN



LEFT SIDE ELEVATION



RIGHT SIDE ELEVATION

probably from Louisiana if...

If you ever had to wait for the bridge to "come down"
so you can get home

40 TON MANUAL WINCH PARTS LIST

PART	QTY	DESCRIPTION
280	16	3/4" - IONC x 20" Lg. Hex Hd. Mach. Bolt
523	16	3/4" - 1 ONC Hvy. Hex Nut
647	1	S/8" - SAE Flat Washer
671	1	5/16" Flat Steel Washer
11746	2	5/8" - 11 NC x 1 " Lg. Hex Hd. Mach.Bolt
69566	1	Side Plate Base Bar
69574	1	Side Plate Base Bar
69582	4	Pipe Separator
69604	1	Keeper Plate
69612	1	Keeper Plate
69620	2	Bearing Retainer
69639	2	Drive Shaft Bearing
69647	1	Ratchet Handle Stop
69655	1	Ratchet Release Bar
69663	1	Locking Dog Pin
69671	1	Locking Pawl Dog Assembly
69744	1	Top Bracket for Extension Handle
69787	2	Drum Bearing
6979S	1	Gear shaft
69809	1	Pipe Spacer
69817	1	Washer (7 1/8" O.D.x4 31/32" I.D. x 1/4" Thk.)
69825	1	Drive Shaft
69833	1	Key (3/8" Sq. x 13/4" Lg.)
69841	1	Key (3/8" Sq. x 1 3/16" Lg.)
69868	1	Key (1 1/2" Sq. x 1 1/4" Lg.)
69876	1	Key (1/2" Sq. x 2 3/4" Lg.)
69884	1	Drive Pinion
69A92	1	Pipe Spacer
69906	1	Washer (2 1/2" O.D. x 9/16" I.D. x 5/16" Thk.)
69922	1	Intermediate Shaft
69930	1	Intermediate Shaft Collar
69949	1	Drive Gear and Pinion Assembly
69973	1	Drive Gear Pinion Searing
69981	1	Locking Gear
70009	1	Locking Pawl
70017	1	Brake Assembly
70076	1	Brake Shoe Assembly
70114	1	Brake Shoe Pin
70122	1	Brake Mounting Bracket
70130	1	Brake Mounting Bracket Pin
70181	1	Latch Spring
70262	1	Ratchet Gear
70327	1	Ratchet Handle Assembly
70335	1	Handwheel Assembly 70408 1 Handle
70483	5	1/8" Dia. x 1" Lg. Cotter Key

PART QTY DESCRIPTION

70491	8	7/8" - 9NC Hex Nut
70521	2	1/2" - 13 NC x 1 " Lg. Hex Hd. Bolt

70548	20	1/2" Std. Lockwasher
70572	4	#6 x 5/16" Lg. Drive Screw
70580	1	Nameplate
74004	1	Drum Assembly
74489	1	Ratchet Pawl Spring
79901	2	Lifting Lug
B4336	4	Pipe Separator Rod

PARTS LIST FOR RIGHT HAND WINCH

69507	1	Right Side Plate Assembly
69515	1	Left Side Plate Assembly
70149	1	Ratchet Handle Assembly
70416	1	Drive Pinion Guard
73202	1	Ext. Handle Lower Bkt.

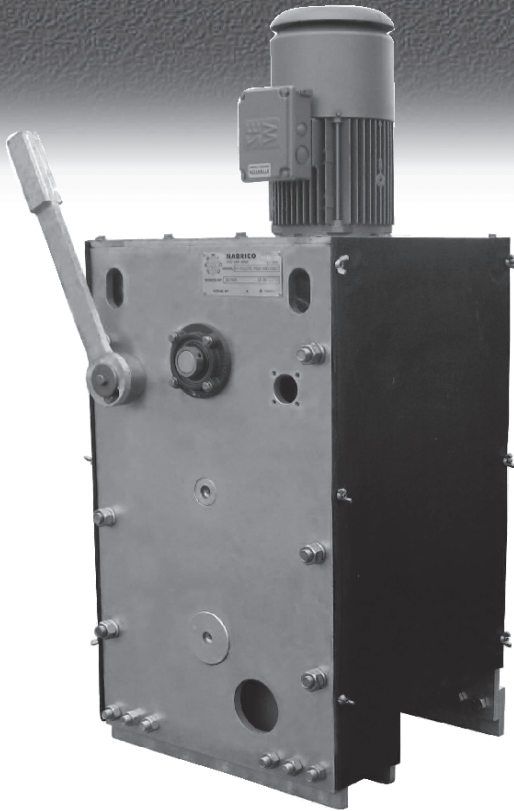
PARTS LIST FOR LEFT HAND WINCH

69523	1	Left Side Plate Assembly
69531	1	Right Side Plate Assembly
70629	1	Ratchet Handle Assembly
70637	1	Drive Pinion Guard
73210	1	Ext. Handle Lower Bkt.

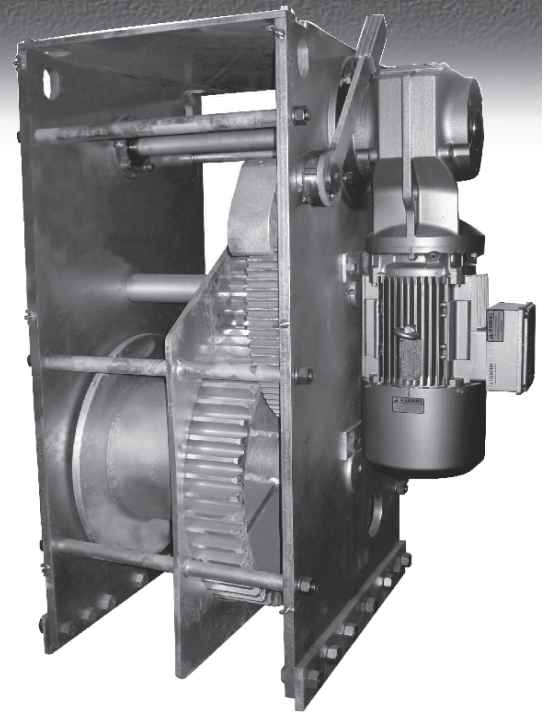
Boudreaux gets de las' rites

Boudreaux waz lying on his dead bed, and waz receiving las' rites from his parish pries'. De good Fader tells Boudreaux, "Eet is time for you to denounce de devil and all his evil." Boudreaux says noting. Fader once again tells Boudreaux, "Eet is time for you to denounce de devil and all his evil." Still Boudreaux says noting. De pries' axed Boudreaux, "Why are you refusing to denounce de devil?" Den Boudreaux tells him. "Fader, until I know where I'm going, I don't want to take no chances to aggravate anybody!"

POWER WINCHES



30 TON



40, 50, 65 TON

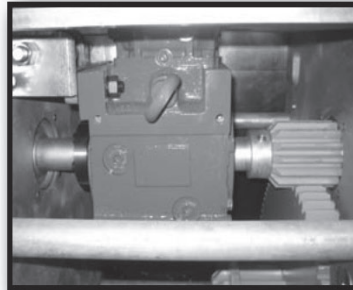
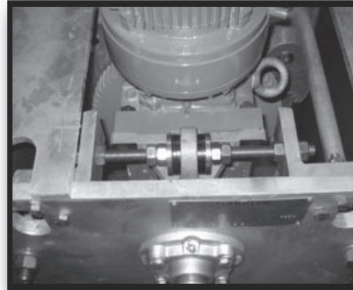
Features

- Salt water package standard.
- Hot-dipped galvanized.
- Stainless steel or silicon bronze fasteners.
- 3-ply conveyor belt covers (damage and corrosion-resistant).
- New thick, 3-tooth locking dog with large lever release and failsafe disc brake.
- Crane and hoist-duty motor, NEMA design, with high-efficiency worm gear box.
- Control box option: NEMA 4X stainless steel.
- Provisions for emergency manual operation.
- Minimal maintenance and easy to repair.
- Over 100 fewer parts than other electric winches (no chain, sprockets, ball bearings, or top shaft - 40 & 50 ton).
- Variable frequency drive option available. Amp draw limits, variable speeds and motor protection.
- Heaviest winch in its class.
- 30 Ton - 5.4 HP motor standard.
- 40 Ton - 7.5 HP motor standard.
- 50 Ton - 10 HP motor standard.
- 65 Ton - 10 HP motor standard.
- Other motors and ratios available.

MODEL	MOUNT	LINE PULL				LINESPEED @ FIRST LAYER OF 1 IN. CABLE NO LOAD	DRUM FLANGE DIAM.	DRUM		DRUM CAPACITIES (FT.)						MOTOR	WEIGHT	MOUNTING DIMENSIONS		
		@ RATED AMPS	@ MOTOR STALL	HAND CRANK @ MOTOR SHAFT	MOTOR			DIAM	WIDTH	CABLE SIZE								WIDTH	LENGTH	HEIGHT
DF-1		LBS.	LBS.	LBS.	HP	FPM	IN.	IN.	IN.	1/2	5/8	3/4	7/8	1	HP	LBS.				
30-11	Universal	13,000	19,500	19,000	5.4	18	17.25	10.75	11	361	228	138	120	66	5.4	1,700	18 5/8"	22"	56 3/8"	
40-11	Left or Right	18,000	27,000	22,000	7.5	18	19	12.75	11.25		287	180	130	100	7.5	1,850	20 1/8"	23 1/4"	52 1/2"	
50-11	Left or Right	29,400	44,100	30,000	10	12.5	19	12.75	11.25		287	180	130	100	10	1,850	20 1/8"	23 1/4"	52 1/2"	
65-11	Left or Right	32,000	48,000	30,000	10	10	24	14	10.625		572	325	262	200	10	3,200	23 1/4"	30"	62 5/8"	



NABRICO



DF-1 Electric Winch Features & Specifications

- Salt water package standard on all power winches.
- Hot-dipped galvanized.
- Stainless or silicon bronze fasteners.
- 3-ply conveyor belt covers (damage and corrosion-resistant).
- 3-tooth locking dog with large release and fail-safe disc brake.
- Provisions for emergency manual operation with cordless drill.
- NEMA motor design with cycloidal gearbox.
- Control box option: NEMA 4X stainless steel.
- Minimal maintenance and easy to repair.
- Variable frequency drive option available. Amp draw limits, variable speeds, and motor protection.
- Made as one model adjustable to true right or left hand models for use in pairs.
- Over 100 fewer parts than other electric winches (no chain or sprockets).
- Heaviest winch in its class.
- 30 Ton - 5 HP motor standard.
- 40 Ton - 7.5 HP motor standard.
- 50 Ton - 10 HP motor standard.
- 65 Ton - 10 HP motor standard.
- Other line pulls and speeds available.

MODEL	HOLDING DOG & OR BRAKE	LINE PULL		LINE SPEED 1ST LAYER FPM	DRUM CAPACITIES (FT.)					WEIGHT LBS.	DIMENSIONAL DATA		
		@ RATED AMPS-LBS	@ MOTOR STALL		1/2	5/8	3/4	7/8	1		W	L	H
DF-1-30	30 TONS	12500	18750	14	361	228	138	120	66	1700	20"	22"	55"
DF-1-40	40 TONS	15600	23400	16	-	287	180	130	100	1850	21"	24"	67"
DF-1-50	50 TONS	20800	31200	16	-	287	180	130	100	1850	21"	24"	69"
DF-1-65	65 TONS	37800	56700	9	-	572	325	262	200	3200	24"	30"	79"

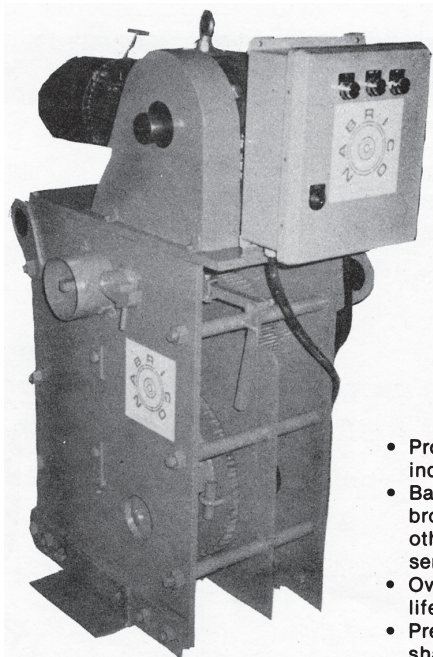
CERTIFIED ELECTRIC WINCH SPECIFICATIONS

MODEL	MOUNT	HOLDING BRAKE &/ OR DOG	LINE PULL @ FIRST LAYER OF CABLE				LINESPEED @ FIRST LAYER OF 1 IN. CABLE NO LOAD
			40 TON-429: 1 RATIO, 30 TON-343:1 RATIO		18.6:1 RATIO		
			@ RATED AMPS	@ MOTOR STALL	HAND CRANK @ MOTOR SHAFT	HAND CRANK @ TOP SHAFT	
DF-500		S. Tons	LBS.	LBS.	LBS.	LBS.	FPM
40-11-14	Universal	40	14,000	24,000	15,000	2,500	15.3
30-7-15	Universal	30	13,000	24,000	22,000	4,000	16.0

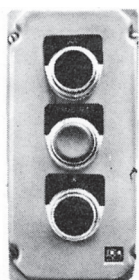
The specifications and details described by drawings or text in this literature are subject to change without notice. Winches portrayed in drawings, photographs and copy are not designed for lifting or lowering personnel.

MODEL	DRUM FLANGE DIAM.	DRUM		DRUM CAPACITIES (FT.) ¹					MOTOR	WEIGHT	MOUNTING DIMENSIONS		
		DIAM.	WIDTH ²	CABLE SIZE							A	B	C
DF-500	IN.	IN.	IN.	½	⅝	¾	⅞	1	HP	LBS.	A	B	C
40-11-14	19	12.75	11.25		260	180	130	100	5	1,900	1' 9"	3' 8"	3' 5¼"
30-7-15	16	10.75	7.25	186	109	57	39		5	1,600	1' 3⅜"	2' 1½"	4' 4¼"

(1) These capacities are based on uniform cable winding.
The amount of tension applied when spooling the cable will also affect the length.



The NABRICO 30 ton all electric winch is designed to cover minimum deck space.

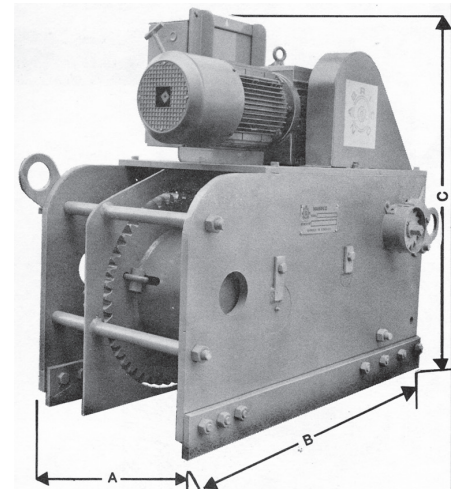


Remote controls are available as an option.

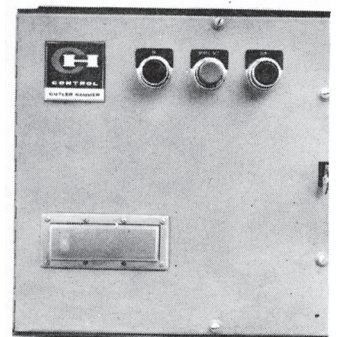


FEATURES

- Proven holding capacity certified by independent testing laboratory.
- Ball bearings on high speed shaft and large bronze bushings with grease fittings on all other shafts for long life and dependable service.
- Oversized sprockets and chain for extended life.
- Precision machined side plates, gears and shafts to maintain proper gear tooth engagements and minimize wear.
- Improved cable attachment and solid drum gear.
- Totally enclosed 5 horsepower crane and hoist electric motor with high efficiency gear box attached.
- Free-wheeling feature to allow faster cable pull out.
- Provisions for emergency manual operation from three locations. One location utilizes the entire winch gear reduction.
- Mechanical locking dog for emergency use in case of motor brake failure.
- Electric brake can be manually operated in case of motor or power failure.
- Cable guard prevents cable damage from gears.
- Quiet operation.
- Minimal maintenance.



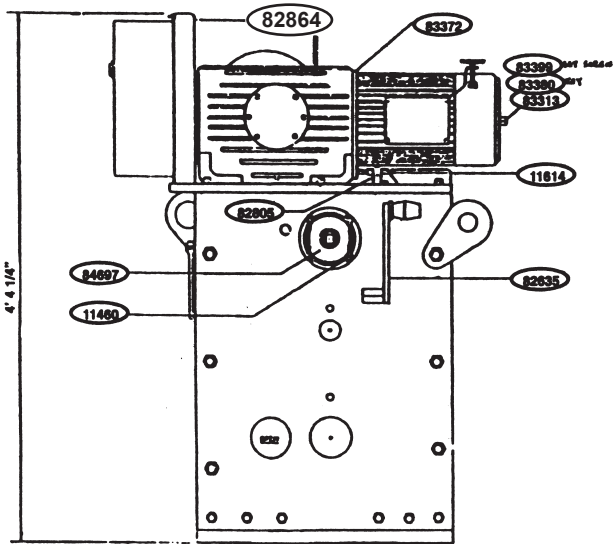
The NABRICO electric winch, with a proven 40 ton holding capacity, is powered by a 5 horsepower NEMA design "D", crane and hoist motor. It is attached to a heavy duty "fail safe" electric brake.



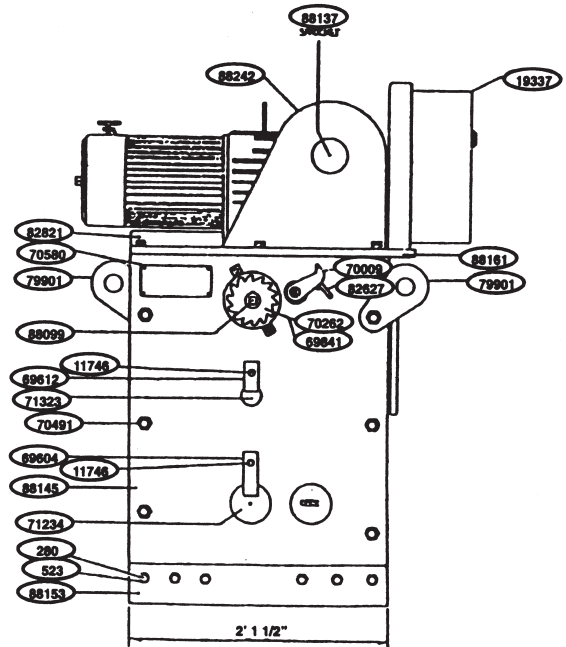
Winch comes complete with all electrical controls. Connect to a power source and the winch is ready to operate.



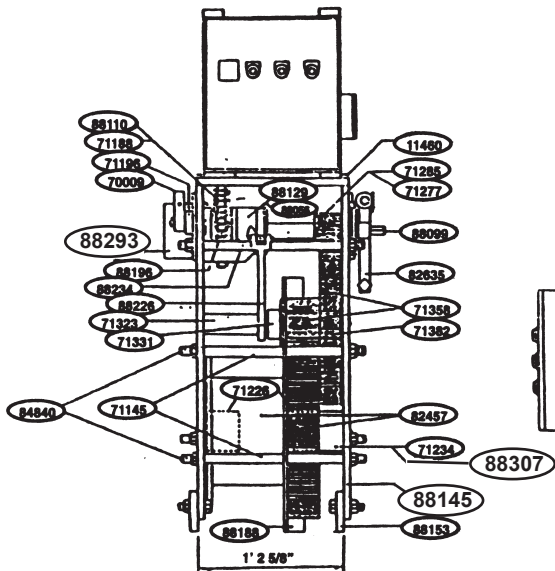
30 TON ELECTRIC WINCH



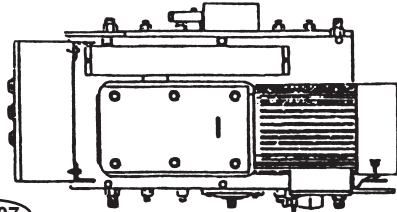
RIGHT ELEVATION



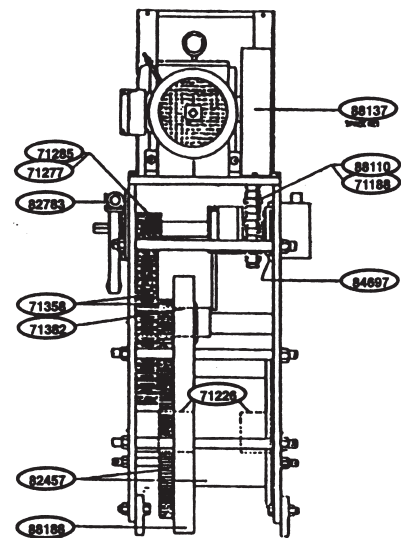
LEFT ELEVATION



FRONT ELEVATION



PLAN



REAR ELEVATION

probably from Louisiana if...

If you've ever been to a wedding and someone either danced in a #3 washtub or with a broom and this was considered normal

30 TON ELECTRIC WINCH PARTS LIST

PART NO. QTY DESCRIPTION

280	12	3/4" X 2 1/2" Lg. Hex Hd. Bolt
523	12	3/4" Hex Nut
11460	14	3/8" x 1 3/4" Lg. Hex Hd. Machine Bolt
11614	2	1 1/2" x 2 1/4" Lg. Hex Hd. Bolt
11746	2	5/8" x 1" Lg. Hex Hd. Machine Bolt
19887	1	Control Cabinet
21644	1	Control Box Support (Right Hand)
69604	1	Keeper Plate
69612	1	Keeper Plate
69841	1	Keystock 3/8" x 13/16
70009	1	Locking Pawl
70262	1	Locking Gear
70491	12	7/8" Hex Nut
70580	1	Name Plate
71145	6	Pipe Separator
71188	1	Top Shaft Sprocket Bushing
71196	1	Locking Pawl Spacer
71226	2	Drum Bearing
71234	1	Drum Gear Shaft
71277	1	Keystock 3/8" x 2 1/2"
71285	1	Drive Pinion
71323	1	Intermediate Shaft
71331	1	Intermediate Shaft Collar
71358	1	Drive Gear and Pinion Assembly
71882	1	Drum Gear Pinion Bearing
79901	2	Lifting Lug

PART NO. QTY DESCRIPTION

82457	1	Drum Assembly
82481	1	Drum Shaft Spacer
82627	1	Locking Pawl Pull Pan
82635	1	Handcrank Assembly
83046	1	Eurodrive Brake, Electric Motor
82783	1	Handcrank Rack
92805	1	Alignment Lugs
22821	1	Motor Guard
82864	1	Control Box Supports (Left Hand)
e2880	1	Drive Shaft Guard Assembly
84697	2	Sealmaster Bearing SFC-25
84840	6	Pipe Separator Rod
8905h	1	Keystock 3/8" x 3 1/2"
88099	1	Drive Shaft Assembly
88110	1	Browning 1008 17 Tooth Sprocket
88129	1	Jaw Clutch Hub
88137	1	Browning 100B20 Tooth Sprocket
88145	2	Side Plate
88153	2	Side Plate Base Bar
88161	1	Brake Gear Motor Base Plate
83189	1	Cable Guard Plate
88196	42	Pitches 100 Roller Chain
88226	1	Jaw Clutch Handle
88284	1	Jaw Clutch Yoke
88242	1	Chain Guard

Boudreaux's wife has'a crab boil

Boudreaux waz **waiting** by his house cause his wife waz missing.

He head a knock at de door, so he answered eet. His buddy Tibodeaux waz at de door.

Tibodeaux says, "Boudreaux I got some good news and I got some bad news. De bad news is dat we foun' your wife drowned in de lake. De good news is when we picked her up out de lake she had 3 dozen crabs holt'ing on, so bring some beer cause we're gonna have a crab boil".

40 TON ELECTRIC WINCH PARTS LIST

PART	QTY	DESCRIPTION
280	14	3/4" x 2-1/2- Lg H/H Machine Bolt (Base Bars)
329	6	1/2" x 1-3/4' Lg H/H Machine Bolt (Top Platel
523	18	3/4" Hex Nut (Base Bars & Brake Motor)
558	2	1/2" Hex Nut (Jacking Bolt Locknut)
582	6	1/4" Hex Nut (Chain Guard 8 Control Box)
620	4	3/4 Flat washer (Brake - Gear Motor)
728	4	3/4" Lock washer (Brake - Gear Motor)
760	2	5/16- Lock washer (Drive Shaft Guard)
779	6	1/4" Lock Washer (Chain Guard 8 Control Box)
922	2	5/16"X3/4 Lg H/H Cap Screw (Dr Sh Guard)
1023	2	1/4" x 1-1 /4- Lg H/H Cap Screw (Chain Guard)
9865	3	1/8" Grease Fitting (Drum Shaft 8 Int Shaft)
11592	2	1/2 x 2- Lg. H/H Machine Bolt (Ball Bearings)
11740	2	5/8" x 1- Lg H/H Machine Bolt (Keeper Plate)
11878	4	3/4" x S3/4- Lg H/H Machine Bolt (Brake-GM)
20184	2	1/2" x 2-1/4 Lg H/H Cap Screw (Jacking Bolt)
21644	1	Control Box Support (Right Hand)
69582	4	Pipe Separator
69604	1	Keeper Plate (Drum Shaft)
69612	1	Keeper Plate (Intermediate Shaft)
69728	1	Locking Pawl Spacer
69795	1	Drum Gear Shaft
69809	1	Pipe Spacer (Drum)
69817	1	Washer (Drum)
69868	1	Key (Locking Gear)
69876	1	Key (Drive Pinion)
69884	1	Drive Pinion
69922	1	Intermediate Shaft
09930	1	Intermediate Shaft Collar
69949	1	Drive Gear 8 Pinion Assembly
69973	1	Drive Gear Pinion Bearing (included in P/N 69949)
69981	1	Locking Gear
70009	1	Locking Pawl
70475	1	S/Bw FI-ct'wOsher (Locking Pawl)
70483	1	1/8" x 1<< Lg Cotter Pin (Locking Pawl)
70491	8	7/8" Hex Nut (Pipe Separator Rods)
70505	2	1/4 Grease Fitting (Jaw Clutch Hub L Spkt)
70548	14	1/2" Lock Washer (Brake- GI BP L Ball Brg)
70572	4	6 x 5/16- Lg Drive Screw (Name Plate)
70580	1	NABRICO Name Plate
70599	1	5/BZ x 5/8 Lg Set Screw (Int Shaft Collar)
73593	1	Control Box w/o Holes
79774	1	Locking Pawl Pin
79901	2	Lifting Lugs
82503	1	Drum Assembly
H2SI	1	Drum Bearing (included in P/N 82503)
82600	1	Side Plate Base Bar

De little t'ings

Boudreaux and Marie waz having some trouble, so dey did de right thing and went to a marriage counselor. After a few visits, and a lot of questioning and listening. de coun-selor said that he had discovered de main problem.

He stood up, went over to Marie, axed her to stand, and gave her a hug. He looked at Boudreaux and said, "This is w'at your wife needs, at least once a day!" - Boudreaux frowned, thought for a moment. den said. "OK, w'at time do you want me to bring her back tomorrow?"

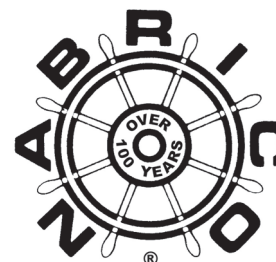
CERTIFIED HYDRA-ELECTRIC WINCH SPECIFICATIONS

MODEL	MOUNT	HOLDING BRAKE &/ OR DOG (1)	LINE PULL		HANDWHEEL ONE MAN	LINESPEED AT DRUM SURFACE NO LOAD	H.E. GEAR RATIO	MANUAL GEAR RATIO
			RATED (2)	MAX				
DF-156		S.T.	LB.	LB.	LB.	FPM		
10-6HE	Right or Left	10	2272 at 830 psi	3150 at 1119 psi	7,000	23.5	29.25:1	5.57:1
20-7HE	Right or Left	20	9382 at 1138 psi	11700 at 1381 psi	14,000	17.2	92.86:1	18.57:1
40-11HE	Right or Left	40	17213 at 1695 psi	18000 at 1797 psi	15,000	12.8	92.86:1	18.57:1
60-11HE	Right or Left	60	31771 at 1998 psi	33480 at 2105 psi	24,000	9.9	135.20:1	27.0:1

(1) Holding & line pull ratings are for first layer of cable.

(2) Hydra-Electric line pull pressures are pre-set for RATED conditions.

(3) Also available in wider drum widths upon request.



MODEL	DRUM FLANGE DIAM.	DRUM		DRUM CAPACITIES (FT.)								MOTOR	WEIGHT		MOUNTING DIMENSIONS			
		DIAM.	WIDTH ³	CABLE SIZE									H.E.	BASIC	A	B	C	
				1/16	1/8	3/16	1/4	3/8	1/2	5/8	3/4							1
DF-156	IN.	IN.	IN.										HP	LB.	LB.			
10-6HE	18	8.625	6.00	353	317	174	129						3	897	690	10 ⁵ / ₁₆ "	1' 10 1/2"	3' 6 ³ / ₈ "
20-7HE	16	10.75	7.25	270	186	109	57	39	21				7.5	1284	1010	1' 3 1/2"	2' 6"	3' 5"
40-11HE	19	12.75	11.25			287	176	130	84	36	26		10	1930	1518	1' 8 1/8"	3' 0"	3' 4"
60-11HE	24	14.00	10.625			572	325	262	200	119	111	62	15	3225	2523	1' 11 1/8"	3' 10 7/8"	4' 3"

(Figures shown in parenthesis are in centimeters.)

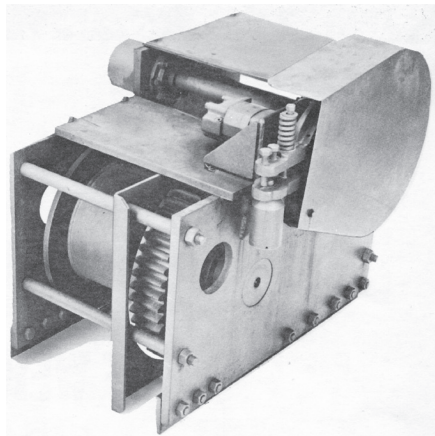
The specifications and details described by drawings or text in this literature are subject to change without notice. Winches portrayed in drawings, photographs and copy are not designed for lifting or lowering persons or equipment.

NABRICO's DF-156, a basic hydraulic winch, has the same performance characteristics as our hydra-electric winches. Available in 10, 20, 40 and 60 ton models.

For more information on the complete line of winches and deck fittings produced by Nabrico, write or call.

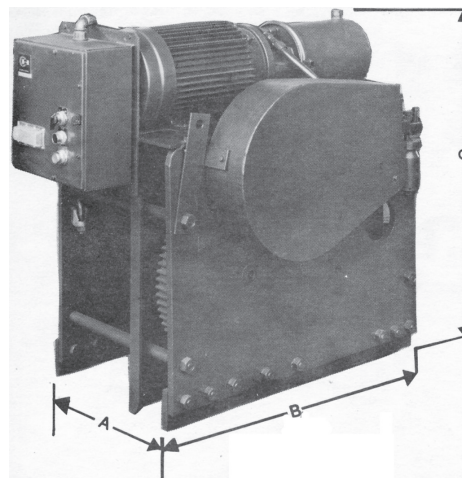
Proven holding capacity certified by independent testing laboratory.

Free wheeling drum feature is standard on all 20, 40, and 60 ton winches to allow faster cable pullout.



FEATURES

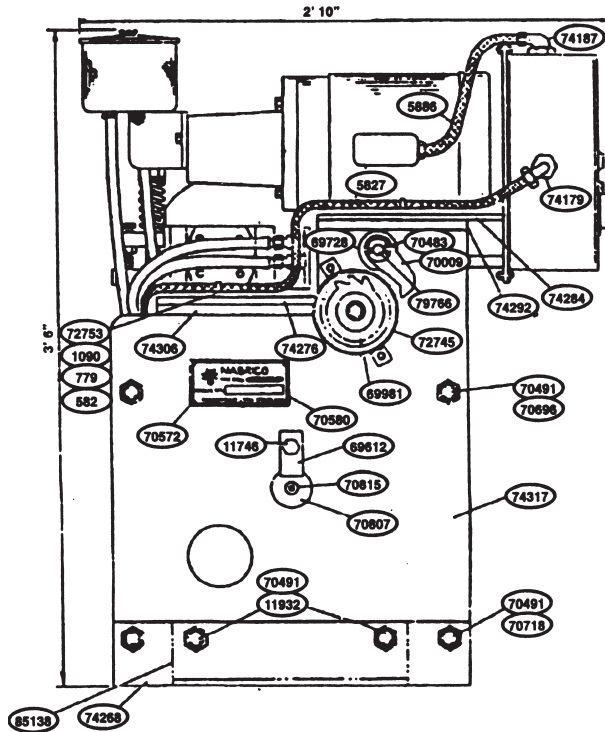
- Manufactured in 10, 20, 40 and 60 ton holding capacities.
- Pilot house and/or deck push button control.
- Self-contained electric-hydraulic package. Quick installation.
- Run electric wire to source. No piping required.
- Automatic brake. Spring loaded, noiseless. Can be released for hand operation.
- Simple instant reversing by hydraulics.
- Standard C Face, 1750 RPM enclosed (T.E.F.C.) electric motor.
- Mechanical holding dog for emergency use. Positive.
- Machine cut gears, more efficient.
- Ball bearings on high speed shaft and large bronze bushings with grease fittings on all other shafts for long life and dependable service.
- Cable guard prevents cable damage from gears.
- Conserves deck space.
- Wider drums on request.
- Quiet operation.
- Provisions for emergency operation, by hand.



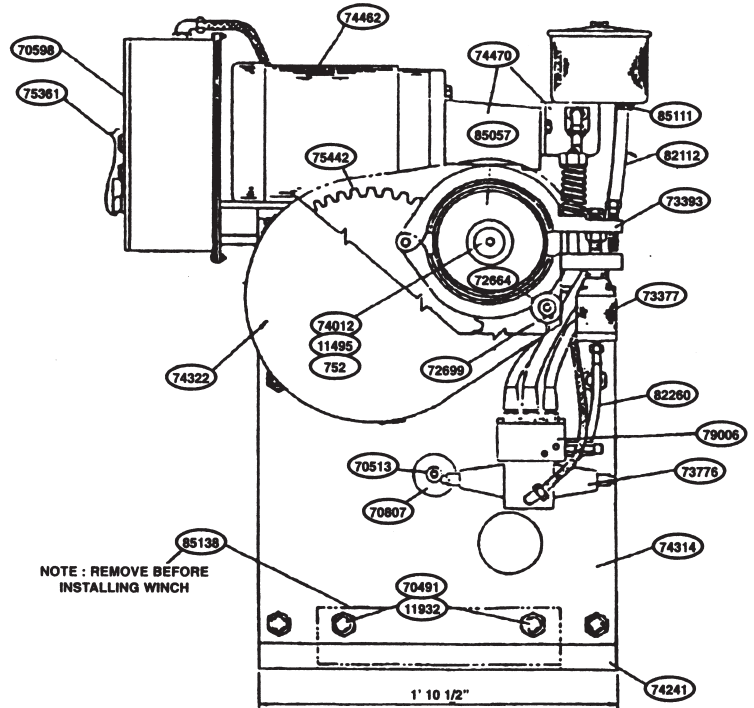
The NABRICO hydra-electric winch, regardless of its capacity, gives you a choice of power, speed and control. Plus, every NABRICO hydra-electric winch uses a standard TEFC 1750 electric motor.

probably from Louisiana if...
You like your rice and politics dirty.

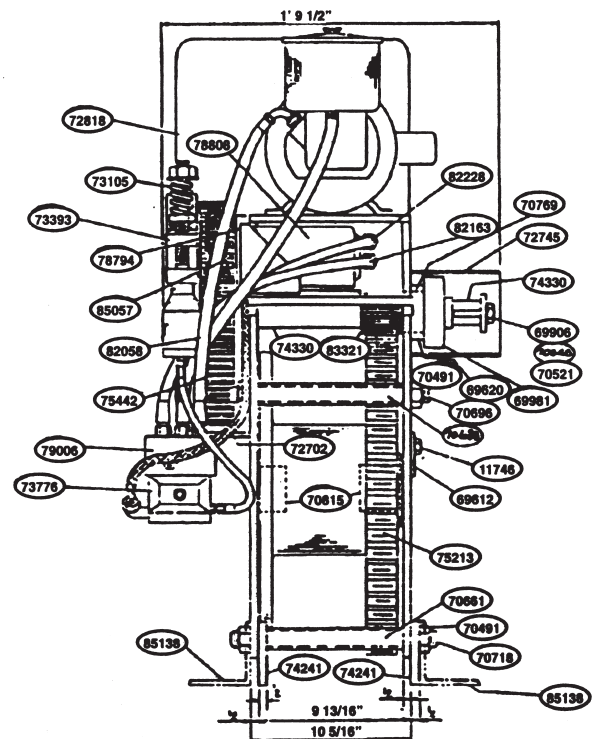
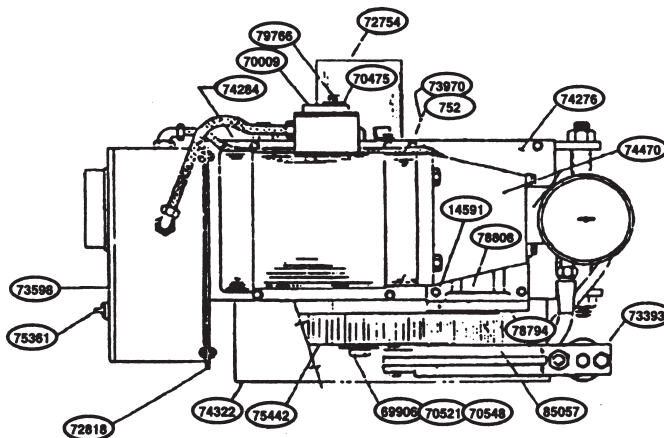
10 TON HYDRA - ELECTRIC WINCH



LEFT SIDE ELEVATION



RIGHT SIDE ELEVATION



FRONT ELEVATION

probably from Louisiana if...

You know when it's appropriate to use "Tony Chachere's" (anytime!!!!)

10 TON HYDRA - ELECTRIC WINCH PARTS LIST**PART QTY. DESCRIPTION**

582	7	1/4" Hex Nut
752	16	3/8" Lockwasher
779	3	1/4" Lockwasher
1090	3	1/4" x 3/4" Lg. R/H Capscrew
5827	9	Lin. Ft. TSGA-3 Marine Cable
5886	41/2	Lin. Ft. TTIB-10-N Marine Cable
9865	2	1/8" PTF Alemite Fitting #1610BL
11495	1	3/8" x 2i" Lg. H/H Machine Bolt
11746	1	5/8" x 1" Lg. H/H Machine Bolt
11932	4	7/8" x 2" Lg. H/H Machine Bolt
14591	8	1/2" x 1 1/2" Lg. H/H Machine Bolt
69612	1	Keeper Plate
69620	2	Bearing Retainer
69728	1	Locking Pawl Spacer
69884	1	Drive Pinion
69906	2	Washer
69981	1	Locking Gear
70009	1	Locking Pawl
70475	1	5/8" Flatwasher
70483	1	1/8" x 1" Lg. Cotter Pin
70491	12	7/8" Hex Nut
70505	2	1/4" Alemite Fitting #1652B
70513	2	1/8" PTF Alemite Fitting
70521	2	1/2" x 1" Lg. H/H Machine Bolt
70548	10	1/2" Lockwasher
70572	4	# 6 x 5/16" Lg. Drive Screw
70580	1	Name Plate
70661	2	Pipe Separator
70688	2	Pipe Separator
70696	2	Pipe Separator Rod
70769	2	Drive Shaft Bearings
70807	1	Drum Shaft
70815	2	Drum Shaft Bearings
72664	1	Brake Post Assembly
72699	1	Retainer Ring
72702	1	4-Way Valve Mounting Plate
72745	1	Drive Shaft Guard Ass'y.
72753	3	Stand Off Bracket
72818	1	Controller Mounting Plate
74322	1	Gear Guard Assembly
73105	1	Winch Brake Spring
73377	1	Hyd. Winch Brake Cylinder
73393	1	Hyd. Winch Brake Assembly
73598	1	C-H Transformer Box
73776	1	4-Way Valve
73970	6	3/8" x 1 1/4" H/H Capscrew
74012	1	Washer
74179	2	1/2" Liquid Tight Fitting

PART QUAN. DESCRIPTION

74187	2	3/4" Liquid Tight Fitting
74241	1	Base Bar
74268	1	Base Bar

PART QTY. DESCRIPTION

74276	1	Hyd. Motor Base Plate
74284	1	Electric Motor Base Plate
74292	2	Upper Cap Bar
74306	2	Lower Cap Bar
74314	2	Side Plate
74330	1	Drive Shaft
74462	1	Lincoln Electric Motor 3 HP
74470	1	Power Pack Assembly
75213	1	Drum Assembly
75361	1	Complete Push Button Ass'y.
75442	1	Drive Gear
78794	1	Hyd. Motor Bracket
78808	1	Hydraulic Motor
79006	1	Modular Aluminum Subplate
79776	1	Locking Pawl Pin
82058	1	Hose Assembly 1 OLP
82112	1	Hose Assembly 1ORLT
82163	1	Hose Assembly 1 OLA
82228	1	Hose Assembly 1 OLB
82260	1	Hose Assembly 1 ORLBL
82309	1	Fitting Kit
85057	1	Motor Pinion & Brake Drum Ass'y.
85111	1	1 " Hose Clamp
85138	2	Base Bar Support Bracket

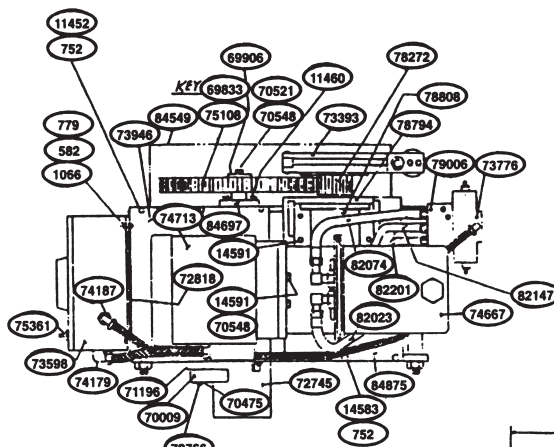
PARTS FOR RIGHT HANDWINCH

72826	1	Gear Guard Assembly
89066	1	Hose Assembly 1 OPP
8211Z	1	Hose Assembly 1ORLT
82171	1	Hose Assembly 1 OR.A
82236	1	Hose Assembly 1 ORB
82260	1	Hose Assembly 1 ORLBL
82309	1	Fitting Kit

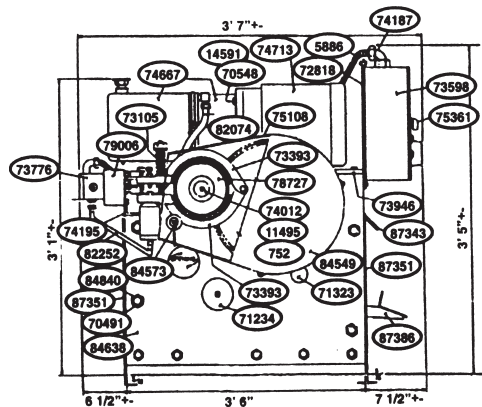
PARTS NOT SHOWN

22022	1	Starter (In Control Box)
69349	1	Key w/#75442
69833	1	Key w/#70793
69868	1	Key w/#69981
69876	1	Key w/#69884
70564	1	Retainer Ring w/#73393
70793	1	Handwheel Assembly
70912	1	Cable Clamp
73008	1	Upper Band w/#73393
73016	1	Lower Bank w/#73393
73040	1	Brake Lining w/#73393
73059	12	Brass Rivet w/#73393
74349	1	Key w/#75442
75353	3	C-H Heater (In Control Box)

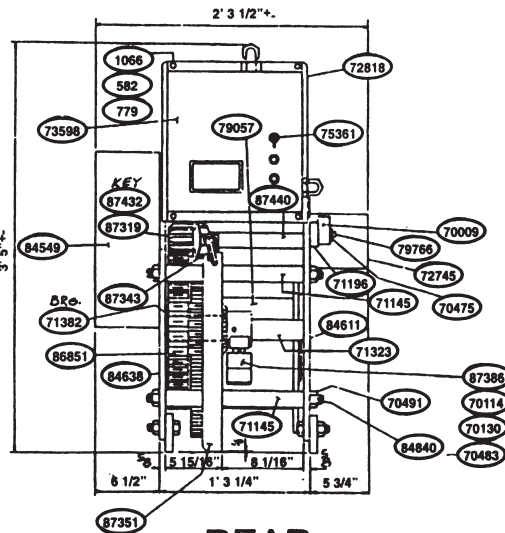
20 TON HYDRA - ELECTRIC WINCH



LEFT SIDE
ELEVATION

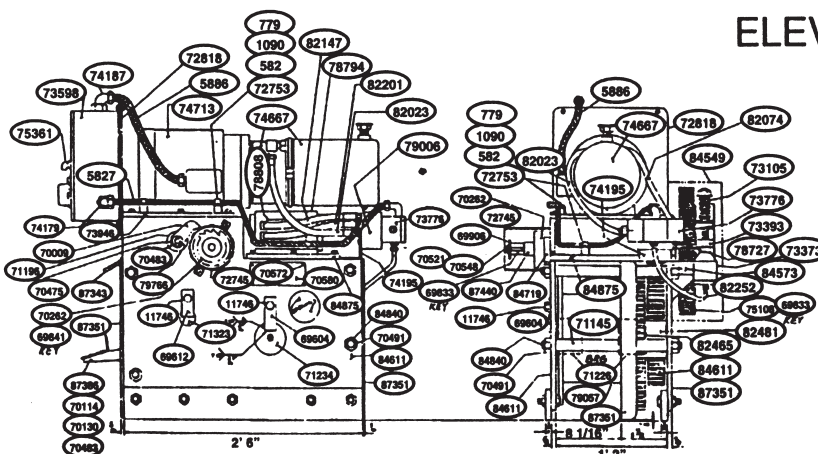


PLAN



REAR
ELEVATION

RIGHT SIDE
ELEVATION



FRONT
ELEVATION

Boudreaux meets a man on his Hawaiian vacation.

Boudreaux goes to Hawaii on vacation.

Down at de pool, a man sits down next to Boudreaux. Boudreaux says, "Hey, how you doing? My name is Boudreaux and I'm here on vacation. My house caught eetself on fire. I got a leettle extra from de insurance company. Dat's how I came here on dis vacation." "Well that's interesting," responded the man "I'm here from California. My house flooded. I used the extra insurance money for this vacation."

"Mais dats good," said Boudreaux "but let me axe you one ting. How de heck did you start de flood?"

20 TON HYDRA - ELECTRIC WINCH PARTS LIST

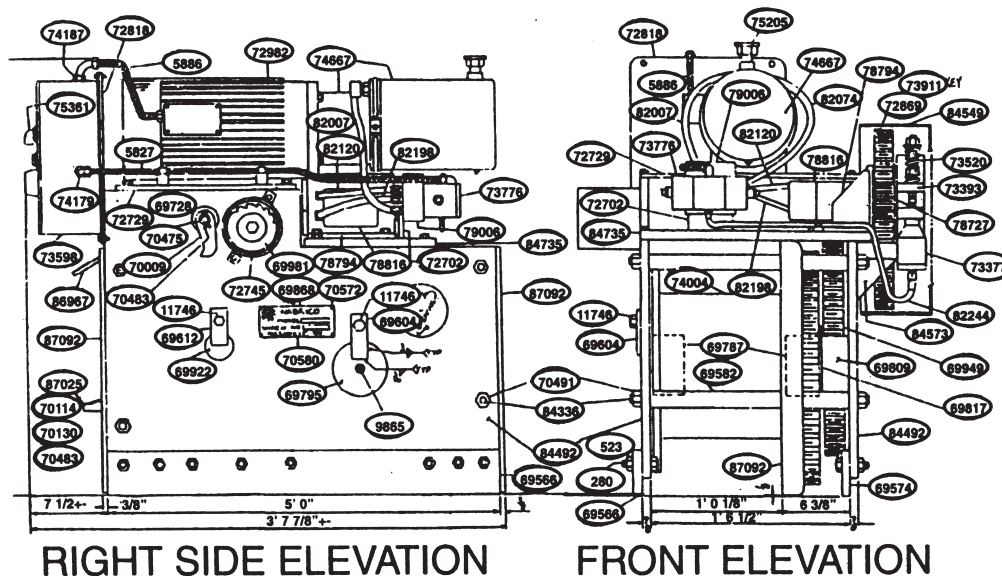
<u>PART</u>	<u>QTY</u>	<u>DESCRIPTION</u>	<u>PART</u>	<u>QTY</u>	<u>DESCRIPTION</u>
582	7	1/4" Hex Nut	74713	1	Lincoln 7 1/2" H. F Motor
752	17	3/8" Std. Lockwasher	75108	1	Drive Gear
779	14	1/4" Std. Lockwasher	75361	1	C. H. Pushbutton Station
1066	4	1/4" 0 x 3/4" Lg. Hex Head Cap Screw	78727	1	Brake Assembly - 16 Teeth
1090	3	1/4" 0 x 3/4" Lg. Round Head Machine Screw	78794	1	Hydraulic Motor Bracket
5827	1	9 Lin. Ft. TSGA-3 Marine Cable	78808	1	Hydraulic Motor
5886	1	6 Lin. Ft. TTIB-10-N Marine Cable	79006	1	Aluminum Sub-Plate w/Relief Valve
11452	6	3/8" 0 x 1 1/4" Lg. Hex Head Machine Bolt	79766	1	Locking Pawl Pin
11460	8	3/8" a x 13/4" Lg. Hex Head Machine Bolt	82023	1	Hose Assembly - 20 RP (R.H.)
11495	1	3/8" 0 x 2 1/4" Lg. Hex Head Machine Bolt	82074	1	Hose Assembly - 20 FIT (R.H.)
11746	2	5/8" 0 x 1" Lg. Hex Head Machine Bolt	82147	1	Hose Assembly - 20 RA (R.H.)
14583	3	3/8" 0 x 1 1/2" Lg. Hex Head Machine Bolt	82201	1	Hose Assembly - 20 RB (R. H.)
14591	8	1 1/2" 0 x 1 1/2" Lg. Hex Head Machine Bolt	82252	2	Hose Assembly - 20 RLBL (R.H.& L.H.)
69604	1	Keeper Plate	79057	1	Drum Assembly
69612	1	Keeper Plate	82465	1	Washer
69833	2	Key	82481	1	Pipe Spacer
69841	1	Key	84549	1	Gear Guard Assembly (Right Hand)
69906	2	Washer	84573	1	Hydraulic Brake Stub Post Assembly
70009	1	Locking Pawl	84611	1	Right Side Plate Assembly
70114	1	Brake Shoe Pin	84638	1	Left Side Plate Assembly
70130	1	Brake Mounting Bracket Pin	84697	2	Sealmaster Ball Bearing
70262	1	Locking Gear	84719	1	Drive Shaft Spacer
70475	1	5/8" SAE Flat Washer	84840	4	Pipe Separator Rod
70483	2	1/8" 0 x 1" Lg. Cotter Pin	84875	1	Hydraulic Motor Base Plate
70491	8	7/8" Hex Nut	86851	1	Drive Gear & Pinion Assembly w/Brake Drum
70521	2	1/2" 0 x 1" Lg. Hex Head Machine Bolt	87319	1	Drive Pinion Hub Assembly
70548	12	1/2" Std. Lockwasher	87343	1	Yoke Assembly
70572	4	#6 x 5/16" Lg. Drive Screw	87351	1	Cable Guard Plate - Right Hand
70580	1	Name Plate	87386	1	Foot Brake Assembly
71145	4	Pipe Separator	87416	1	Intermediate Shaft Brake Drum
71196	1	Locking Pawl Spacer	87432	1	Key
71226	2	Bearing	87440	1	Drive Shaft
71234	1	Drum Gear Shaft		3	Jiffy 125 Cable Clamps
71323	1	Intermediate Shaft			Provided by Electric Shop
71382	1	Bearing			
72745	1	Drive Shaft Guard Assembly			
72753	3	Stand Off Bracket			
72818	1	Controller Mounting Plate			
73105	1	Brake Assembly Spring			
73393	1	Hydraulic Winch Brake Assembly			
73598	1	C. H. Transformer Box			
73776	1	Parker Hannifin 4-Way Valve			
73946	1	Electric Motor Pump Base Plate			

FOR LEFT HANDWINCH

82031	1	Hose Assembly - 20 LP (L.H.)
82104	1	Hose Assembly - 20LT (L.H.)
82155	2	Hose Assembly - 20 LAB (L.H.)
84530	1	Gear Guard Assembly (L.H.)
87483	1	Cable Guard Plate (L.H.)

probably from Louisiana if...

The four seasons in your year are: crawfish, shrimp, crab and King Cake.



40 TON HYDRA - ELECTRIC WINCH PARTS LIST

PART QTY.. DESCRIPTION

280	16	3/4" x 2 1/2" Lg. H/H Machine Bolt
523	16	3/4" Hex Nut
582	7	1/4" Hex Nut
752	1	3/8" Lockwasher
779	7	1/4" Lockwasher
1066	4	1/4"x 3/4" Lg. H/H Capscrew
1090	3	1/4"x 3/4" Lg. R/H Capscrew
5827	9	Lin. Ft. TSGA-3 Marine Cable
5886	6	Lin. Ft. TTIB-I O-N Marine Cable
9865	3	1/8" PTF Alemite Fitting
11495	1	3/8" x 2 1/4" Lg. H/H Machine Bolt
11592	8	1/2" x 2" Lg. H/H Machine Bolt
11746	2	5/8" x 1" Lg. H/H Machine Bolt
14591	16	1/2 x 1 1/2" Lg. H/H Machine Bolt
69566	1	Base Bar
69574	1	Base Bar
69582	4	Pipe Separator
69604	1	Keeper Plate
69612	1	Keeper Plate
69728	1	Locking Pawl Spacer
69787	2	Drum Gear Bearing
69795	1	Drum Shaft
69809	1	Pipe Spacer
69833	1	Key w/87009 & 70335
69868	1	Key w/87009 & 69981
69906	2	Washer
69922	1	Intermediate Shaft
69930	1	Intermediate Shaft Collar
69973	1	Drive Gear Pinion Bearing
69981	1	Locking Gear
70009	1	Locking Pawl
70114	1	Brake Shoe Pin
70130	1	Brake Mounting Bracket Pin
70475	1	Flatwasher
70483	3	1/8" x 1" Lg. Cotter Pin
70491	8	7/8" Hex Nut
70521	2	1/2" x 1" Lg. H/H Machine Bolt
70548	20	1/2" Lockwasher
70572	4	#6 x 5/16" Lg. Drive Screw
70580	1	Name Plate
72699	1	Retainer Ring
72702	1	Four Way Valve Mounting Plate
72729	1	Electric Motor Base Plate
72745	1	Drive Shaft Guard
72753	3	Stand Off Bracket
72818	1	Pushbutton & Controller Plate
72869	1	Drive Gear
72982	1	TEFC Electric Motor 10 HP
73377	1	Brake Cylinder
73393	1	Hyd. Winch Brake Assembly
73520	1	Brake Spring
73598	1	Transformer Box
73776	1	Four Way Valve

PART QTY DESCRIPTION

73911	1	Key w/87009 & 72869
74004	1	Drum Assembly
74012	1	Washer
74179	1	1/2" Cable Fitting
74187	1	3/4" Cable Fitting
74667	1	Power Pack Assembly
75205	1	Vent Cap
75361	1	Pushbutton Station
78727	1	Motor Pinion with Brake Drum
78794	1	Hydraulic Motor Bracket
78816	1	Hydraulic Motor
79006	1	Modular Aluminum Subplate
79774	1	Locking Pawl Pin
82007	1	Hose Assembly 40RP
82074	1	Hose Assembly 40RT
82120	1	Hose Assembly 40RA
82198	1	Hose Assembly 40RB
82244	1	Hose Assembly 40RLBL
84336	4	Pipe Separator Rod
84492	2	Side Plate
84549	1	Gear Guard Assembly
84573	1	' Brake Stub Post Assembly
84622	2	Sealmaster SFC-32 Ball Bearing
84700	1	Drive Shaft Spacer
84735	1	Hyd. Motor Base Plate
86878	1	Drive Gear & Pinion Assembly w/Brake Drum
86967	1	Yoke Assembly
87009	1	Drive Shaft
87025	1	Foot Brake Assembly
87092	1	Cable Guard Plate
87130	1	Key w/87149
87149	1	Drive Pinion

PARTS NOT SHOWN

20222	1	Starter (In Transformer Box)
70335	1	Handwheel Assembly
73725	3	Heater (In Transformer Box)
78913	2	Lifting Lug
82295	1	Fitting Kit
85073	1	Drive Shaft Pinion Spacer

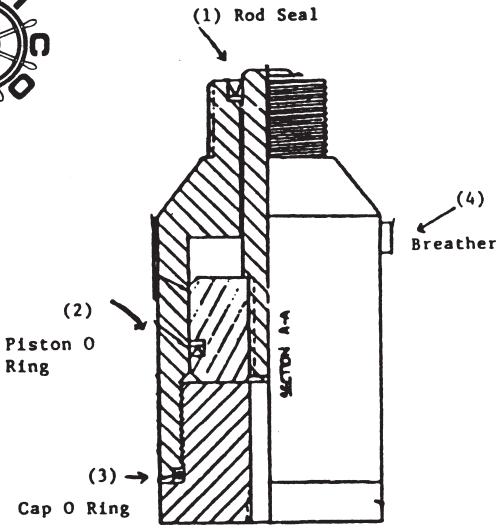
For Left Hand Winch

82015	1	Hose Assembly 40LP
82082	1	Hose Assembly 40LT
82139	2	Hose Assembly 40LAB
84530	1	Gear Guard Assembly
86908	1	Yoke Assembly
87181	1	Cable Guard Plate

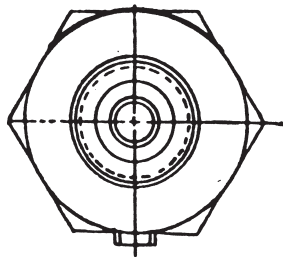
HYDRAULIC BRAKE CYLINDER PART NO. 73377



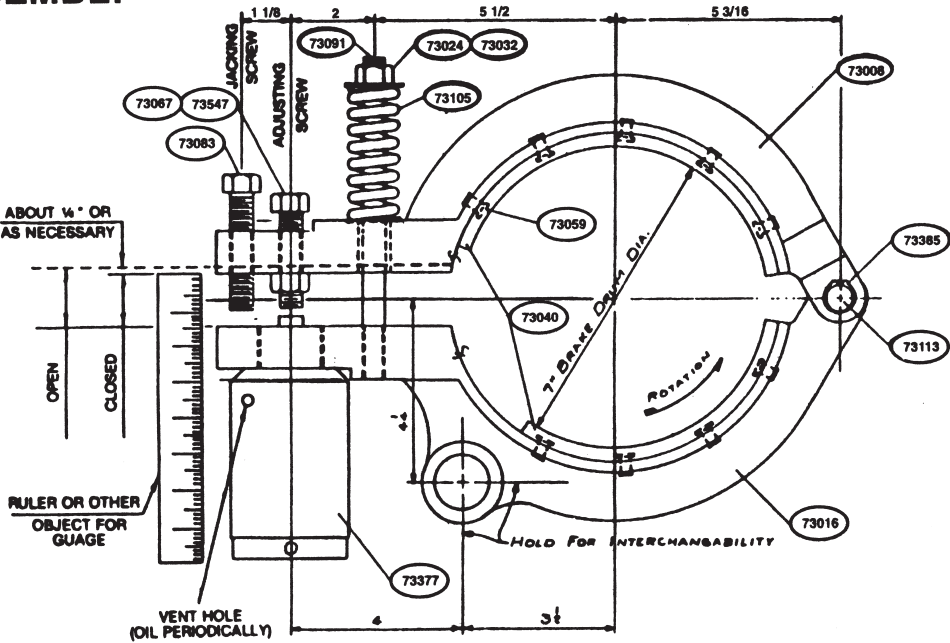
LIST OF MATERIALS		
Part No.	Quan.	Description
73008	1	Upper Band (Mn. Brz.)
73016	1	Lower Band (Mn. Brz.)
73024	1	1/2" O Hex Nut
73032	1	1" o Flat Washer
73040	1 Set	Brake Lining
73059	18	1/4" O x 5/8" Lg. Brass Rivet
73067	1	5/8" O x 2 1/2" Lg. Capscrew
73083	1	5/8" O x 2 3/4" Lg Capscrew
73091	1	1/2" O x 7 1/2" Lg. Stud
73105*	1	3lb. Spring 89111 Max. Working
73113	1	Brake Hinge Pin
73377	1	Hyd. Cylinder Ass'y.
73385	2	Industrial Retaining Ring 3100-67
73547	1	5/8" O Hex Nut



	CYLINDER WITH ROUND BOTTOM	QTY. REQ.	CYLINDER/W HEXAGONAL BOTTOM	QTY. REQ.
	part no.		part no.	
1	20915	1	20915	1
2	2-326	2	20923	1
3	01229	1	20931	1
4	21059	1	21059	1



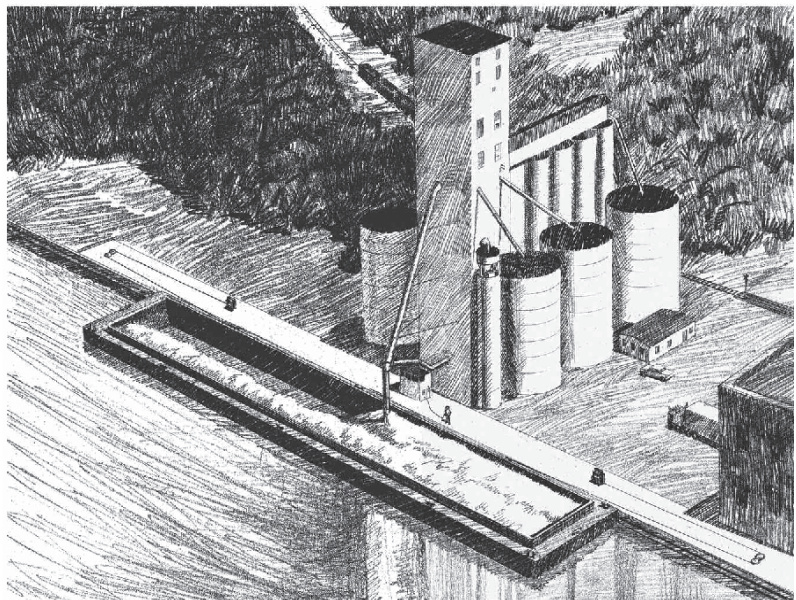
BRAKE ASSEMBLY



POSITIONING WINCH

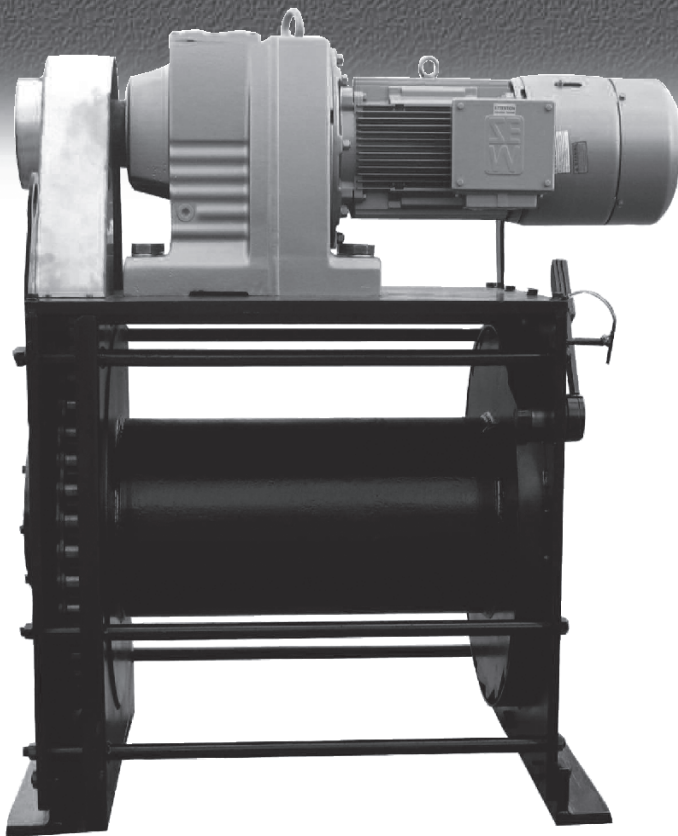
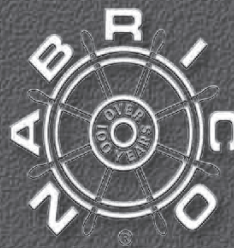
NABRICO's constant tension, all electric positioning winch system consists of two winches, two variable speed drives, variable speed motors, helical bevel gearboxes, failsafe brakes, PLC (programmable logic controls) and a solid state regen unit. These components have been engineered to allow one winch to be in a drive mode, pulling, while the other winch is in a torque mode, holding. When the object being positioned is at rest, both drives are in the torque mode, and the load holds its position on the dock, letting out cable during loading, and taking in cable during unloading. This also allows cable in and out as required during tide movement. The amount of torque/pull and speed on the cable is controlled by two potentiometers mounted on the control panel. The positioning winch system is capable of maintaining the full horsepower load at zero speed indefinitely. If there should be a loss of power or the emergency stop is pressed, the failsafe brakes hold the load.

NABRICO has utilized proven winch designs with the latest drive and touch screen technology. Adjustable ramps have been programmed into the system to minimize the shock on the cable and associated hardware that is a result of starting and stopping.

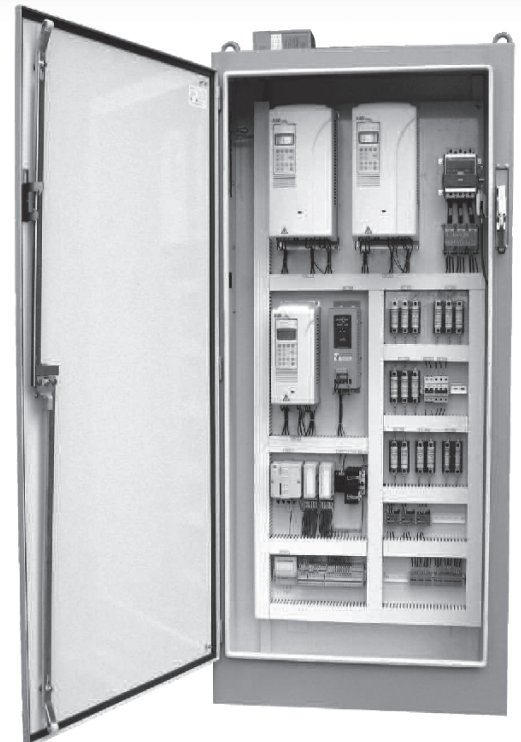


NABRICO pioneered the positioning winch system employing the most recent available technology. In addition to the standard model, the system is available in a larger, 50 horsepower model, and in a smaller 10 horsepower model. Using various motor and gearbox combinations, the line pull and speed can be changed, since the basic engineering in the panel and winch remain the same. The positioning winch has industrial, marine and rail applications.

NABRICO



36" Chain Drive Positioning Winch



NABRICO's most technologically advanced, backed by a tradition of recognizing and meeting the needs of the towing and transportation industries, provides an infinite number of line pulls and line speeds. Our standard model has a starting line pull of 24,000 lbs. with 16,000 lbs. continuous at 30 fpm. Drum capacity is generous, varying from 572 to 1328 feet, depending on the size of the cable. Accessible, clearly marked controls allow for remote or local operation. Wireless operators as an option.

Control Cabinet for Winches

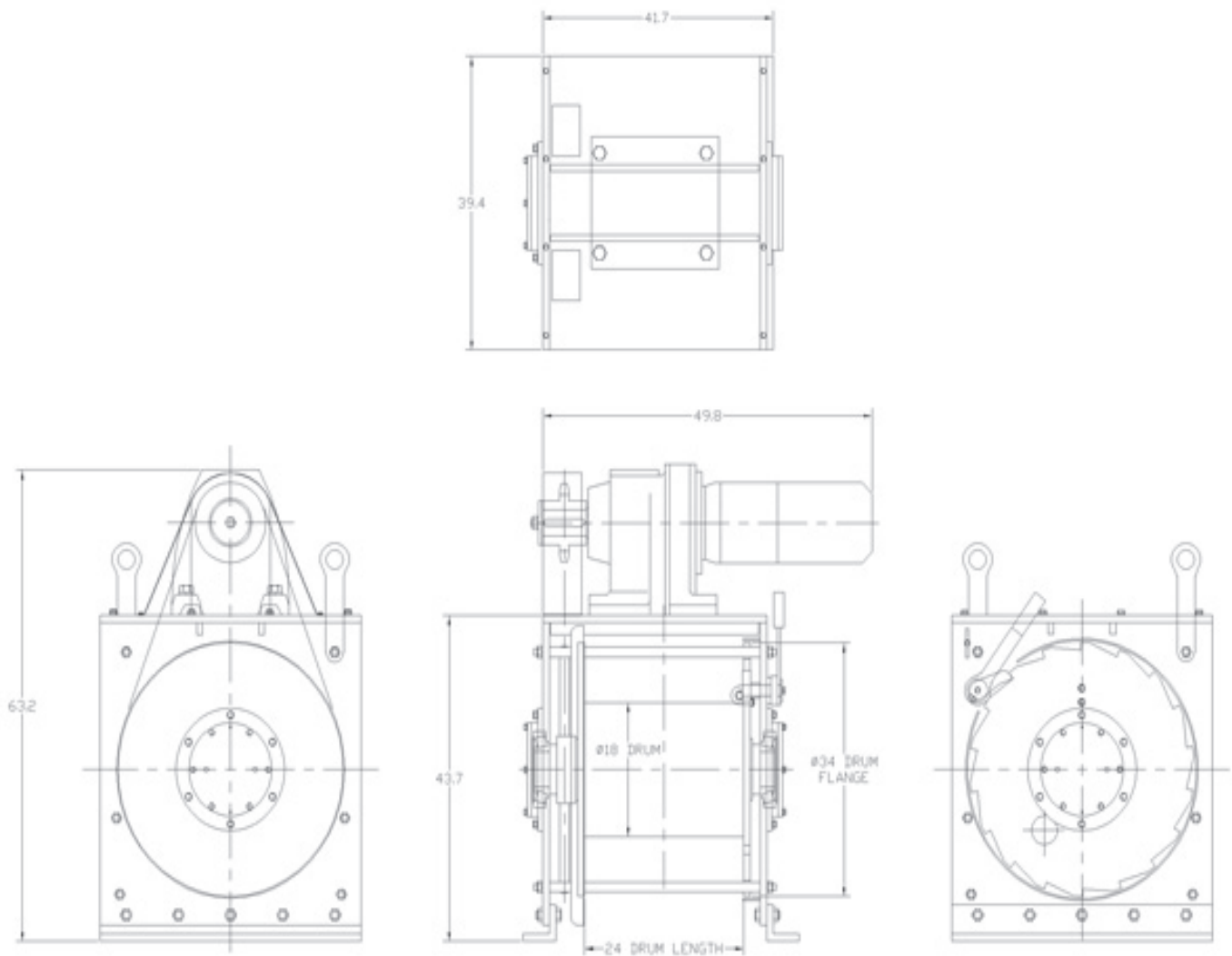


CABLE CAPACITY			LINE SPEED	LINE PULL
CABLE SIZE*	24" DRUM WIDTH	36" DRUM WIDTH		
3/4"	877	1328	Standard: Infinitely variable from 0-30 fpm. Custom application up to 100 fpm.	Standard: Infinitely variable line pull to 48,000 lbs. at motor stall; 24,000 lbs. starting and 16,000 lbs. continuous. Custom applications are available.
7/8"	768	1165		
1"	686	1043		
1 1/8"	623	948		
1 1/4"	572	872		

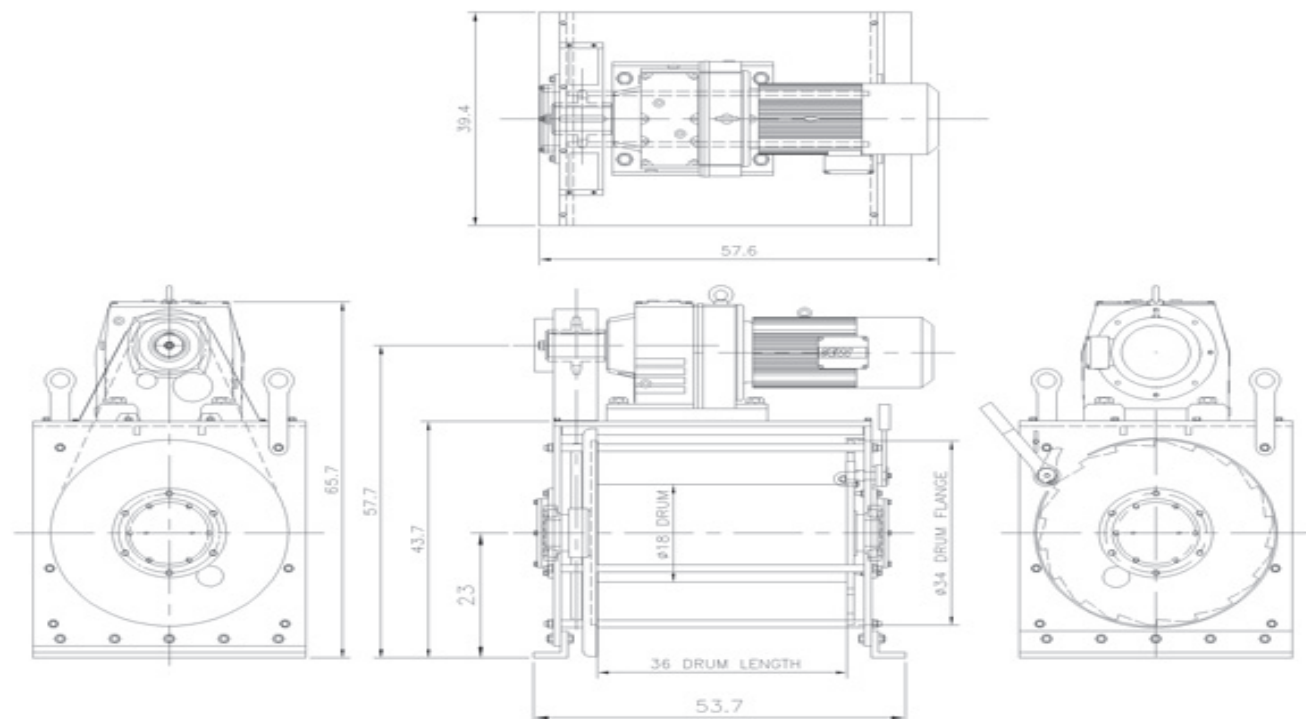
Note: These figures are based on uniform rope winding. The amount of tension applied when spooling the rope will also affect the length.

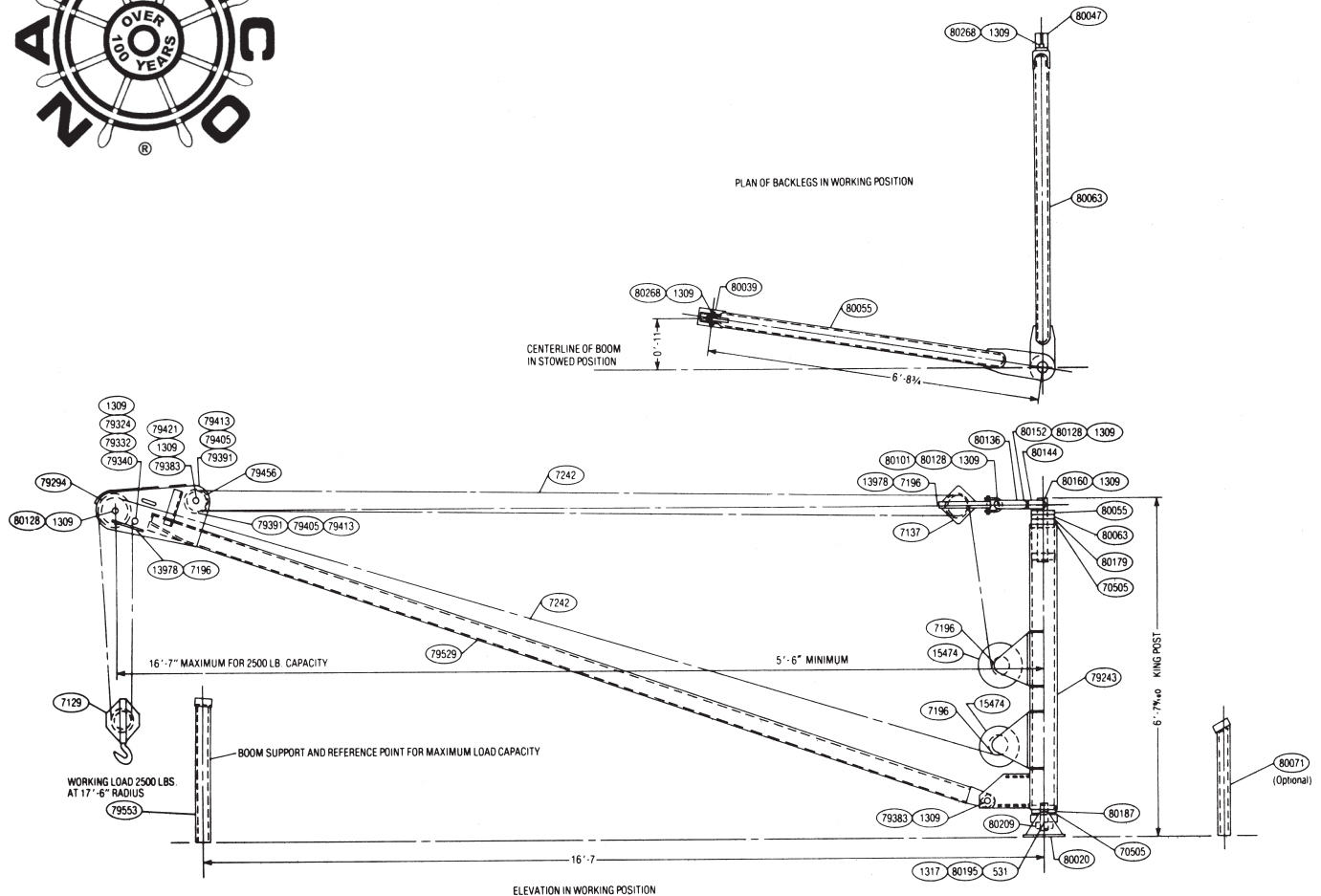
* Cable capacities are @ 5 layers.

NABRICO 24" BARGE MOVING WINCH



NABRICO 36" BARGE MOVING WINCH





NABRICO DF-126 BARGE CRANE

FEATURES

2500 pound non-shock lifting capacity at maximum radius of 16'-7". The barge crane operates equally as well at 5'-6" minimum radius.

270° swing capacity resulting in maximum flexibility for lifting and positioning equipment.

One man boom operation leaving other personnel free to position and secure load. Reduces time required for such tasks as hose connecting, removing pumping equipment for repairs and loading oil drums or miscellaneous equipment.

Low silhouette. By removing backleg pins, the crane king post folds down to height of 3'-10" to minimize low bridge problems.

Quality tested to 150% of non-shock working load.

SPECIFICATIONS

Boom and king post assembly

Plate ASTM A 36

Square Tubing ASTM A 36

Sheaves Cast iron, graphite
impregnated bronze bushing

Pins Cold rolled steel

Pipe ASTM A 53

WINCHES

Hand operated with adjustable handle

4:1 gear ratio for fast take up

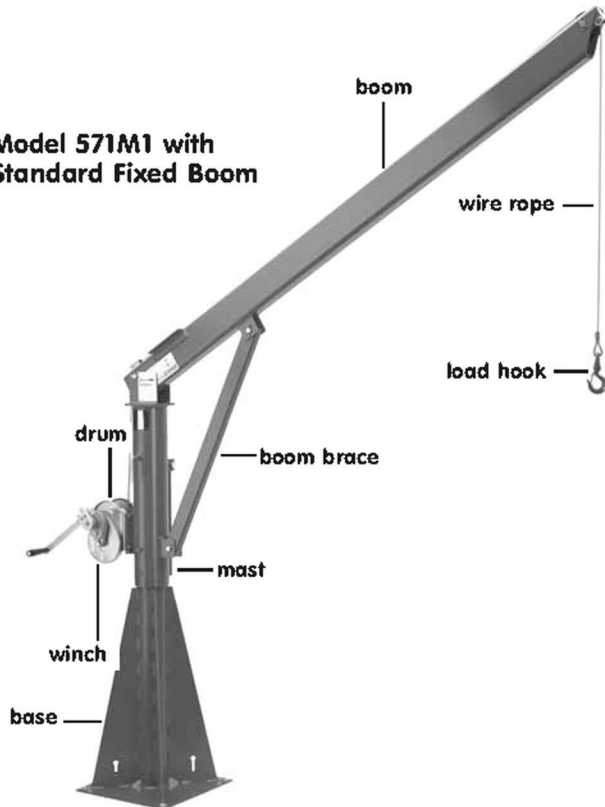
22:1 gear ratio for winching

Cam actuated brake with dual adjustment

Spring loaded holding dog

Oil impregnated bronze bearings

**Model 571M1 with
Standard Fixed Boom**



**Model 571M2 with
Adjustable Boom Option
(screw-jack sold separately)**

Series 571 and 572 Fre Rol Davit Cranes

Hand or Power Winch Operation
Up to 2200 lb capacity

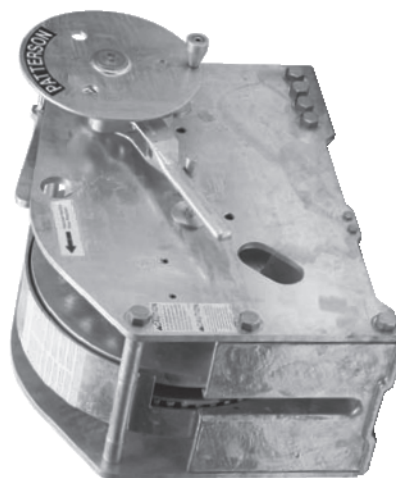
- **Hand Winch Operated Models** include spur gear or worm gear hand winch with brake for load control. Model 571M2 can be drill driven, 400 rpm max.
- **Power Winch Operated Models** include 115 volt 1 phase AC electric winch with pendant control and brake. Other power options available, please contact factory.
- **Fixed Boom – Boom Position C**
- **Adjustable Boom Option** – adjusts between Boom Position A and D – with hand operated ratchet style screw-jack, used to adjust height and reach.
Optional screw-jack sold separately.
- **Mast and Boom Rotate** on tapered roller bearings for smooth 360° load movement. Mast locks in one of four positions with hand tightened lock bolt. Handle on the mast makes rotation easy.
- **Gusset Style Base** for permanent installation and stability under load.
- **Epoxy Finish** available for improved protection against corrosion.
- **Wire Rope Assemblies** sold separately. See tables on following pages.
- **Two-year Limited Warranty**

Series 571 and 572 – Crane Configurations, Bases, and Options – Section 4

model	description	approx. ship wt.
571M1	up to 1500 lb – with M4312PB-K spur gear hand winch	425 lb
571M2	up to 1500 lb – with 4WM2V-K worm gear hand winch	450 lb
571E2	up to 1500 lb – with 4WP2-K electric winch – 115 VAC, 1 phase, 6 ft pendant control	475 lb
571E4	up to 1500 lb – with 4777-K electric winch – 115 VAC, 1 phase, 6 ft pendant control	489 lb
572M1	up to 2200 lb – with M452B-K spur gear hand winch	720 lb
572E3	up to 2000 lb – with 4771-K electric winch – 115 VAC, 1 phase, 6 ft pendant control	750 lb
572E5	up to 2200 lb – with 4WS3M6-K electric winch – 115 VAC, 1 phase, 6 ft pendant control (other configurations available, please contact factory)	1050 lb
SJ1	ratchet style screw-jack for Series 571 (replaces standard boom brace)	37 lb
SJ2	ratchet style screw-jack for Series 572 (replaces standard boom brace)	97 lb

In the 1950s, Patterson began the design and manufacture of towboat and barge winches, used to hold barges in a tow to the towboat and the barges to each other. Having started with just a handful of winch sizes, we now offer 20-ton to 90-ton capacity in manual, electric and hydraulic models. By listening to the needs of industry, design changes over the years have concentrated on making our customers' jobs safer, easier, faster. This is the brand promise we delivered then, and are still delivering today – nearly 60 years later.

BARGE CONNECTORS: The YoYo Winch



At Patterson, we have a single vision – to utilize our experience and expertise to innovatively create products that meet our customers' needs and requirements. The result is our latest patented YoYo winch – designed and proven to alleviate the problems you've been wrestling with for years.

What does that mean for you? It means no more spring coil. No more fouling. And no more problems created by uncontrolled spooling of wire rope on the drum.

Here are 10 reasons why you should be using the YoYo winch right now:

They're Safer:

1. Contained spring coil virtually eliminates injuries due to rope memory
2. Eliminates 'bird nesting' or 'fouling' of wire rope on the winch drum
3. Full gear shroud protects wire rope, gearing and operators

They're Easier:

4. Operation is simple for your crew and requires minimal, if any, guidance
5. Requires little or no re-tightening while the barge is underway
6. Easiest wire rope payout/pull-off in the industry
7. Easier to obtain higher line tension without exerting any additional effort

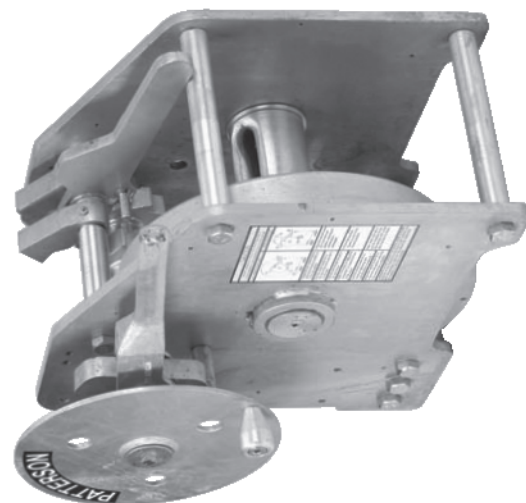
They're Faster:

8. Intuitive one-man operation
9. Patented double-dog design makes for easy maximum line tensioning
10. Fully open design makes the winch safe, easy and a pleasure to operate

Model Number	WWPYOYO
Ultimate Capacity	80,000 lbs.
Overall Width	22 3/4"
Overall Height	25 7/8"
Overall Length	35 13/16"
Typical Line Tension*	26,000 lbs.
Drum Capacities for:	
1"	25'
Weight – Net (lbs.)	1200
Weight – Shipping (lbs.)	1250

PATTERSON
SAFER. EASIER. FASTER.

BARGE CONNECTORS: The Strap Winch

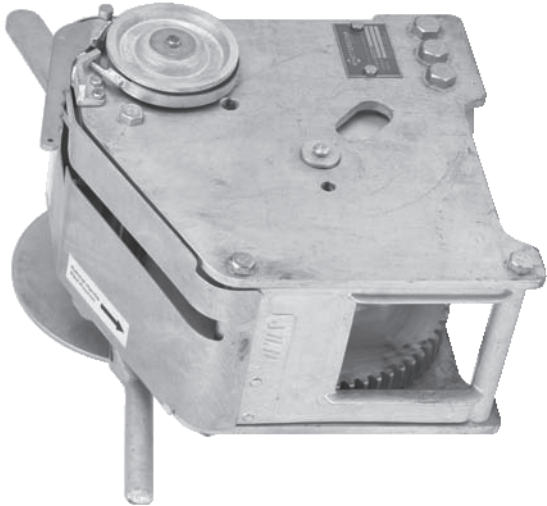


The patented Patterson Strap Winch boasts a fully open design with 360-degree swivel for ease of use and simplicity. Forget the 6- or 8-link chain – with the Patterson Strap Winch, all you need to do is to connect the web to a standard barge wire thimble, put the web into the slot of the drum, use the hand wheel to take up the slack, use the ratchet handle for final tensions, and you're ready to get underway.

Its fully-shrouded gearing is designed to protect the webbing, which is extremely lightweight, doesn't require tools to install, stays flexible in cold or icy weather, and is designed to float. With the Patterson Strap Winch, you won't have to worry about spring coil effect or "fish hooks," wild strands or burns. Our patented design makes your job safer, easier and faster than ever before!

Model Number	WWP40WEB
Ultimate Capacity	80,000 lbs.
Typical Line Tension*	14,000 lbs.
Drum Capacities for:	
6" web	14'
Overall Width	20 3/4"
Overall Height	23 3/4"
Overall Length	23 3/8"
Weight – Net (lbs.)	442
Weight – Shipping (lbs.)	490

BARGE CONNECTORS: The BC-40 Winch

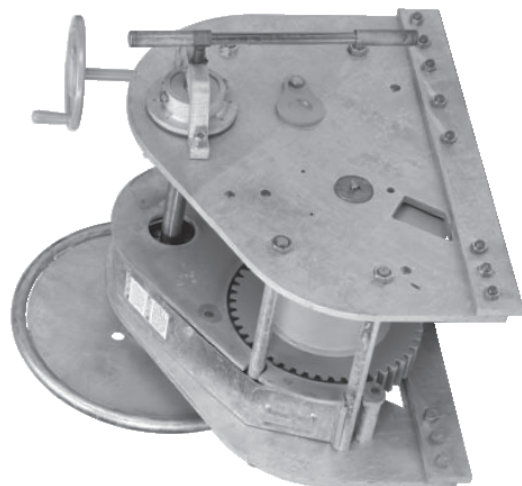


The BC-40 winch is designed for speed, durability and safety. This winch, which enables you to make-up or break-up a tow in half the time of conventional rigging using ratchets, chains, and wires, is designed and manufactured with our top-of-the-line, hot-dipped galvanizing corrosion package.

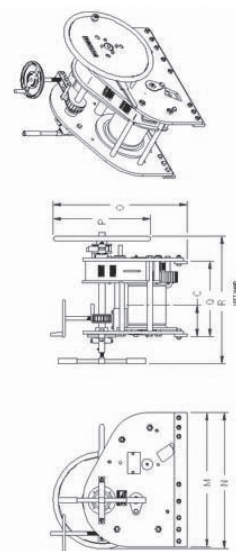
- Patented double dog design for higher line tension
- Patented open bottom design for easy clean-out
- Stud mount allows for 360 degree operation
- Heavy-duty throw-out handle for easy, fast and safe load release
- Hand brake for controlled load release
- Spinner knob on compact hand wheel for fast take-up
- Ratchet handle for final tension
- Fully shrouded
- Also available as a weld down unit

Model Number	WWP40BC
Ultimate Capacity	80,000 lbs.
Typical Line Tension*	10,000 lbs.
Drum Capacities for:	
3/4"	95'
7/8"	85'
1"	70'
Overall Width	19 3/8"
Overall Height	23 3/4"
Overall Length	23 5/16"
Weight – Net (lbs.)	442
Weight – Shipping (lbs.)	490

BARGE CONNECTORS: The Manual Winch Series



Patterson's hand winches are designed to offer top-quality and efficiency. Our winches are available from 20- to 75-ton capacities. Galvanized winches are available for optimal corrosion protection. A saltwater option is also available.

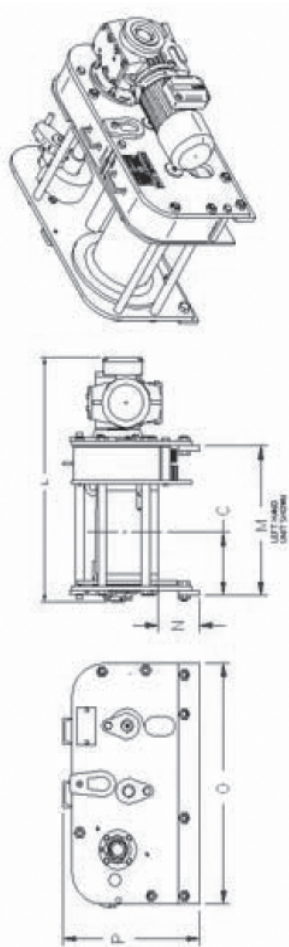


TONNAGE DRUM WIDTH HAND WWP 20 M - 10 - P - R POWER FINISH								
Performance Data* approximate (lbs.)			Drum Capacities* approximate					
Ultimate Capacity	Break Holding Cap	Max. Line Tension	1/2"	5/8"	3/4"	7/8"	1"	1 1/8"
WWP 20M-6	40,000	5200	220'	140'	100'	xx	xx	xx
WWP 30M-10	60,000	6600	xx	120'	85'	65'	xx	xx
WWP 40M-12	80,000	8,000	xx	xx	180'	130'	100'	xx
WWP 65M-14	130,000	11,000	xx	xx	xx	230'	180'	150'
WWP 75M-10	150,000	12,000	xx	xx	xx	xx	190'	150'

	Dimensions* approximate (in.)						(lbs.)	
	Drum Diameter	C	M	N	O	P	Weight Net	Approximate Shipping
WWP 20M-6	8.62	5.81	15	5.5	35	32.75	600	640
WWP 30M-10	10	8.81	19	4.87	35	34.25	750	800
WWP 40M-1	10	9.19	24.5	4	37	3.5	1,105	1,155
WWP 65M-14	14	10.75	25.75	5.5	40	148	1,705	1,755
WWP 75M-10	16	8	22.25	8.25	45	52	2,000	2,080

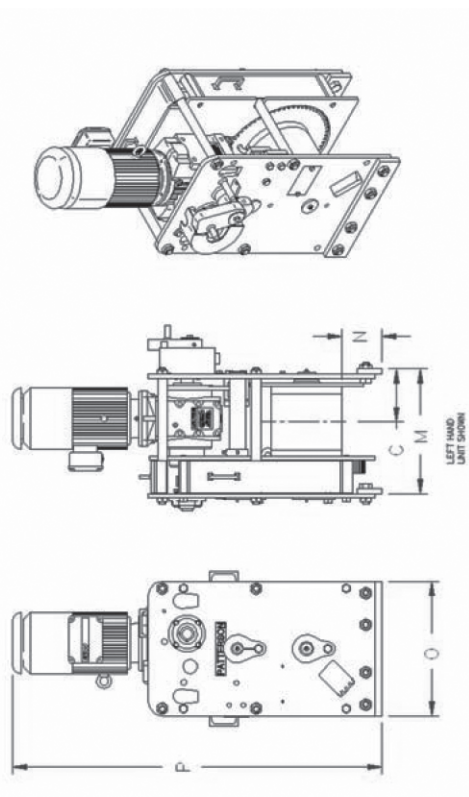
TONNAGE HP VOLTAGE HAND WWP 40 E - 5.0 - 14 - 230 - G - R POWER DRUM WIDTH FINISH												
Performance Data* approximate (lbs.)							Drum Capacities* approximate					
	Dog Holding Capacity	Broke Holding Capacity	Line Pull 1st Wrap	Line Speed 1st Wrap	Stall Pull 1st Wrap	Ult Shock Load	1/2"	5/8"	3/4"	7/8"	1"	1 1/8"
WWP 20E-3.0	40,000	43,000	6987	14.7	20,900	40,000	220'	140'	100'	xx	xx	xx
WWP 30E-3.0	60,000	47,000	7600	13.4	23,000	60,000	xx	120'	85'	75'	xx	xx
WWP 30E-5.0	60,000	33,000	9000	18	33,000	60,000	xx	120'	85'	75'	xx	xx
WWP 40E-5.0	80,000	40,000	9,000	14.5	24,000	80,000	xx	xx	180'	130'	100'	xx
WWP 40E-7.5	80,000	75,000	9,900	18	40,500	80,000	xx	xx	180'	130'	100'	xx
WWP 65E-7.5	130,000	99,000	13,000	14	36,000	130,000	xx	xx	xx	230'	180'	150'
WWP 65E-12.5	130,000	80,000	16,000	24	47,000	130,000	xx	xx	xx	230'	180'	150'
WWP 75E-12.5	150,000	90,000	19,00	21	54,000	150,000	xx	xx	xx	xx	190'	150'
Dimensions* approximate (in.)												
Drum Diameter							(lbs.)					
Drum Diameter							Weight Net		Approximate Shipping			
WWP 20E-3.0	8.62	5.81	14.75	6.5	35	32.5	830		880			
WWP 30E-3.0	10	8.81	19	5 67/77	35	32 32/33	1,015		1,065			
WWP 30E-5.0	10	8.81	19	5 67/77	35	32 32/33	1,020		1,070			
WWP 40E-5.0	10	9.19	24.5	5.16	37	40.15	1,415		1,465			
WWP 40E-7.5	10	9.19	24.5	5.16	37	40.15	1,430		1,480			
WWP 65E-7.5	14	10.75	25.75	6.5	38	48	2,140		2,190			
WWP 65E-12.5	14	10.75	25.75	6.5	38	48	2,150		2,200			
WWP 75E-12.5	16	8	22.25	8.25	45	52	2,400		2,450			

- Manual locking dog for emergency use
- The Low-Profile electric winches provide high-line speed and high-line pull
- This series of winches range from 20-ton through 90-ton capacities
- The Low-Profile winch design has fewer parts creating lower maintenance
- Full rope guard to protect the wire rope from being fouled by the gearing
- Full gear shroud to protect gearing and help provide personal protection
- Units available in right- or left-handed models
- Motor sizes range from 3 HP to 12.5 HP, 208 Volt, 230/460 Volt, 3 phase with thermostat relays
- Galvanized winches for optimal corrosion protection available



TONNAGE										HP		TYPE		FINISH	
WWP 40E - 5.0 - 14 - LP - 230 - G - R															
POWER										DRUM WIDTH		VOLTAGE		HAND	
Performance Data* approximate (lbs.)										Drum Capacities* approximate					
Dog Holding Capacity	Brake Holding Capacity	Line Pull 1st Wrap	Line Speed 1st Wrap	Stall Pull 1st Wrap	Ult Shock Load	1/2"	5/8"	3/4"	7/8"	1"	1 1/8"				
WWP 20E-3.0	40,000	24,500	3,400	27	10,000	40,000	220'	140'	100'	xx	xx	xx	xx		
WWP 30E-5.0	60,000	26,000	7,200	19	18,700	60,000	xx	120'	85'	65'	xx	xx	xx		
WWP 40E-5.0	80,000	22,000	6,000	23	15,800	80,000	xx	xx	180'	130'	100'	xx	xx		
WWP 40E-7.5	80,000	37,800	9,600	26.5	26,600	80,000	xx	xx	180'	130'	100'	xx	xx		
WWP 65E-7.5	130,000	39,000	10,000	25.5	27,600	130,000	xx	xx	xx	230'	180'	150'	150'		
WWP 75E-12.5	150,000	77,000	16,000	24.5	41,000	150,000	xx	xx	xx	xx	190'	150'	150'		
Dimensions* approximate (in.)										(lbs.)					
Drum Diameter	C	M	N	O	L	P	Weight Net		Approximate Shipping						
WWP 20E-3.0	8.62	5.66	13.5	7	35	26.62	22.1	830	830						
WWP 30E-5.0	10	7.5	17.62	6.5	35	31	21.94	1,020	1,020						
WWP 40E-5.0	10	9.72	23	6.66	37	37.5	21.96	1,415	1,415						
WWP 40E-7.5	10	9.72	23	6.66	37	38.02	21.96	1,430	1,430						
WWP 65E-7.5	14	9	23.75	7.25	40	38	30.28	2,140	2,140						
WWP 75E-12.5	16	10	28.75	8	45	51.61	38	2,400	2,400						

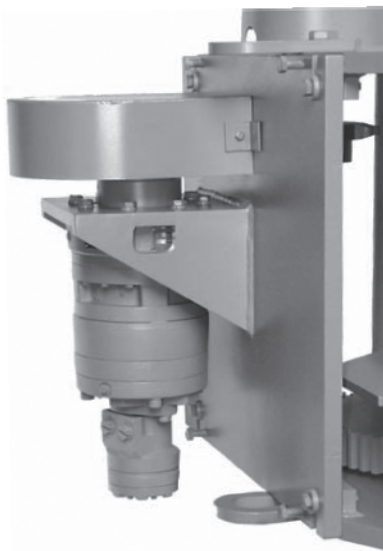
PATTERSON
SAFER. EASIER. FASTER.



- Manual locking dog for emergency use
- The Upright electric winches provide high-line speed and high-line pull
- This series of winches range from 20-ton through 90-ton capacities
- The Upright winch design has fewer parts creating lower maintenance
- Full rope guard to protect the wire rope from being fouled by the gearing
- Full gear shroud to protect gearing and help provide personal protection
- Units available in right- or left-handed models
- Motor sizes range from 3 HP to 12.5 HP, 208 Volt, 230/460 Volt, 3 phase with thermostat relays
- Galvanized winches for optimal corrosion protection available

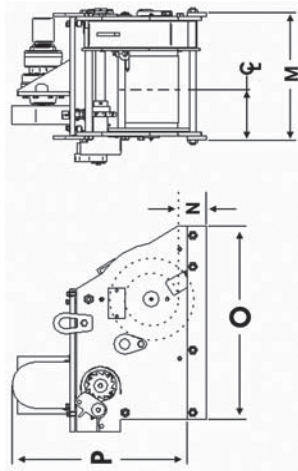
TONNAGE														HP		TYPE		FINISH					
WWP 30E -														5.4		- 10 -		U - 230 -		G - R			
POWER						DRUM WIDTH						VOLTAGE		HAND									
Performance Data* approximate (lbs.)														Drum Capacities* approximate									
Dog Holding Capacity		Brake Holding Capacity		Line Pull 1st Wrap		Line Speed 1st Wrap		Stall Pull 1st Wrap		Ult Shock Load		1/2"		5/8"		3/4"		7/8"		1"		1 1/8"	
WWP 30E-5		60,000		46,800		10,800		16		30,300		60,000		xx		120'		85'		65'		xx	
Dimensions* approximate (in.)														(lbs.)									
Drum Diameter		C		M		N		O		P		Weight Net		Approximate Shipping									
WWP 30E-5		10		7.5		17.62		5.62		19		52.14		640		690							

TOWBOAT WINCHES: The Fully Hydraulic Winch



The Patterson Fully Hydraulic Winch is designed for durability and ease of operation. Our hydraulic winches are available from 20- to 90-ton capacities. Galvanized winches for optimal corrosion protection are also available.

- Optional saltwater-corrosion protection package includes stainless steel shafts, nuts and bolts, hot-dipped galvanized, and anti-seize on all threads or fasteners
- Disc brake is motor-mounted, fully enclosed, spring-applied and hydraulically released
- Manual locking dog for emergency use
- Vary take-up speed simply by varying input flow
- Heavy-duty roller chain and sprockets
- Heavy-duty roller bearings, high-strength phosphor bronze bearings
- Operates from vessel's existing hydraulic system
- High-efficiency planetary gear head
- Bolted keeper plate allows fast, easy shaft removal
- Rope and gear guards protect wire rope and enclose the gearing
- Brake, shuttle valves and controls available upon request



	Performance Data* approximate (lbs.)				Drum Capacities* approximate					
	Brake/Dog Holding Capacity	Line Speed 1st Wrap	Stall Pull 1st Wrap	Hydraulic Supply	1 1/2"	5/8"	3/4"	7/8"	1"	1 1/8"
WWP 20H-6-L/R	40,000	21	15,000	16 GPM at 2,000 psi	220'	140'	100'	xx	xxx	xxx
WWP 30H-10-L/R	60,000	20	19,000	20 GPM at 2,000 psi	xx	120'	85'	65'	xx	xx
WWP 40H-14-L/R	80,000	21	20,000	20 GPM at 2,250 psi	xx	xx	180'	130'	100'	xx
WWP 50H-14-L/R	100,000	22	21,000	20 GPM at 2,250 psi	xx	xx	180'	130'	100'	xx
WWP 65H-14-L/R	130,000	16	27,000	20 GPM at 2,250 psi	xx	xx	xx	230'	180'	150'
WWP 75H-10-L/R	150,000	12	37,000	20 GPM at 2,250 psi	xx	xx	xx	xx	190'	150'

	Dimensions* approximate (in.)							(lbs.)	
	Drum Diameter	Drum Width	C/L	M	N	O	P	Net	Shipping
WWP 20H-6-L/R	8.625	6.875	5.8125	15	5.5	35	32.75	800	850
WWP 30H-10-L/R	10	10	8.8125	19	4.875	35	32.75	1,000	1,050
WWP 40H-14-L/R	10	14.375	9.1875	24.5	4	37	38.5	1,400	1,450
WWP 50H-14-L/R	10	14.375	9.1875	24.5	4	37	40	1,450	1,500
WWP 65H-14-L/R	14	14	10.75	25.75	5.5	40	48	2,125	2,175
WWP 75H-10-L/R	16	10	8	22.25	8.25	45	52	2,375	2,475



Shur-Worm Worm Gear Series 750-3000 lb Capacity

Models W2, W5, W10

Intended for intermittent hand use; not recommended for power operation

- Open worm gear design
- Ductile iron frames
- Cast iron drums
- Cast steel worm gears
- Steel shafts
- Steel lock-on operating handles
- Optional gear cover

Models W100-3, W100-6, and W200-5

Intended for heavy duty hand use; not recommended for power operation

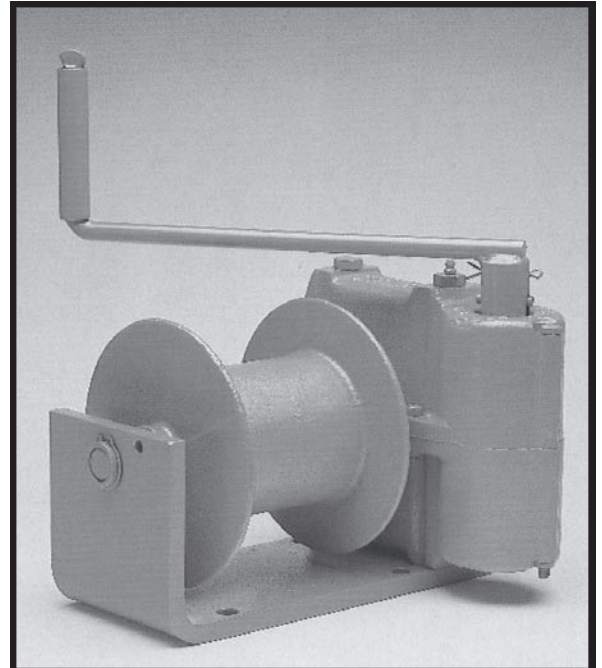
- Fully enclosed worm gearing
- Steel frames
- Precision machine cut steel worm
- Bronze worm gear
- Free spooling

Models W100-3P, W100-6P, and W200-5P

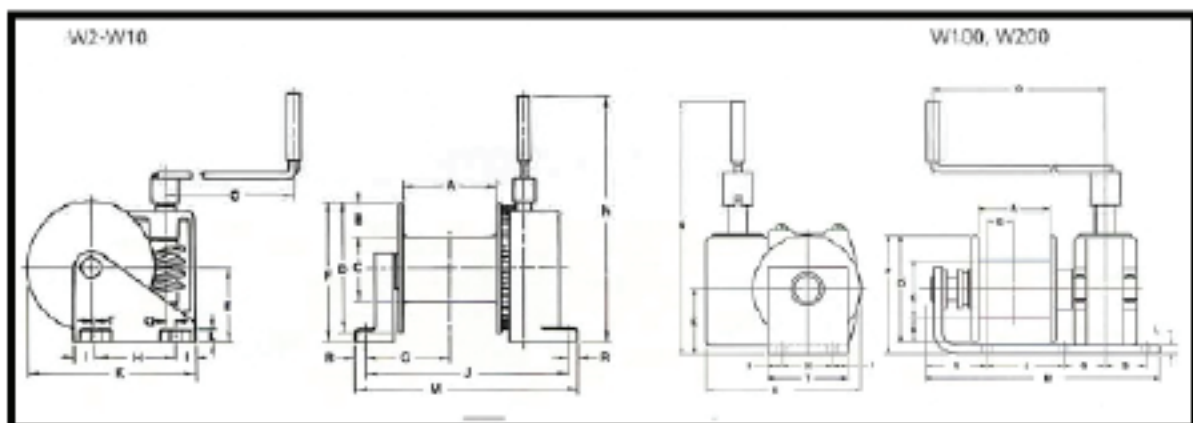
Intended for heavy duty hand use or convertible for intermittent power use

• All the outstanding features of the fully enclosed 100 series hand models plus:

- Anti-friction ball bearings and internal friction device makes models suitable for intermittent power operation
- Unit not furnished with free spooling features



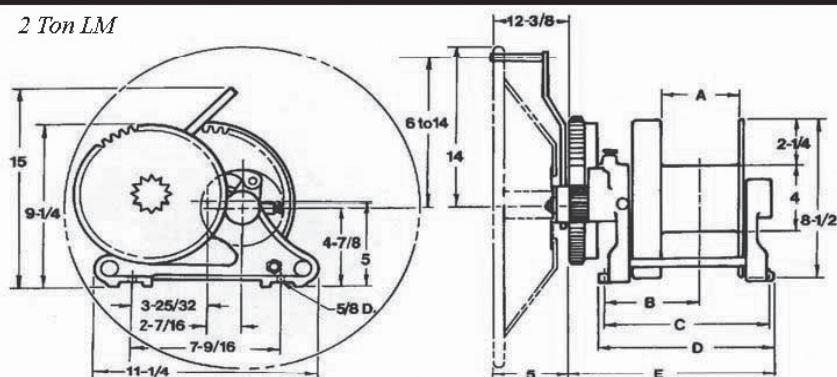
W100-6 Shur-Worm



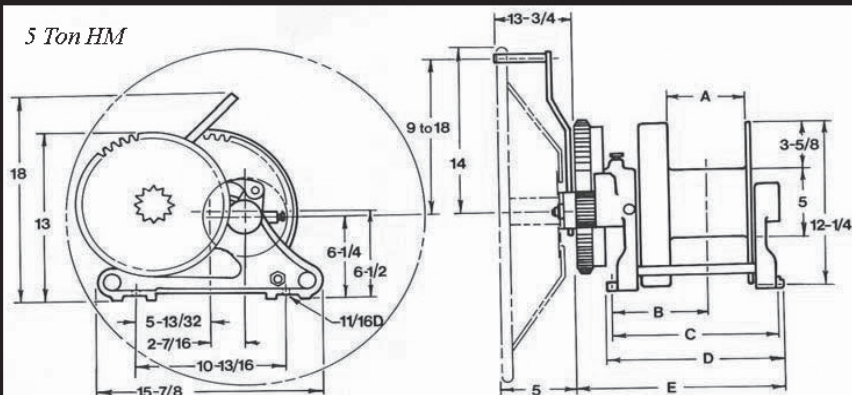
Still think you are having a Bad Day?

A woman came home to find her husband in the kitchen shaking frantically, almost in a dancing frenzy, with some kind of wire running from his waist towards the electric kettle. Intending to jolt him away from the deadly current, she whacked him with a handy plank of wood, breaking his arm two places. Up to that moment, he had been happily listening to his Walkman.

2 Ton LM



5 Ton HM



Spur gear series 2 and 5 Ton Dimensions

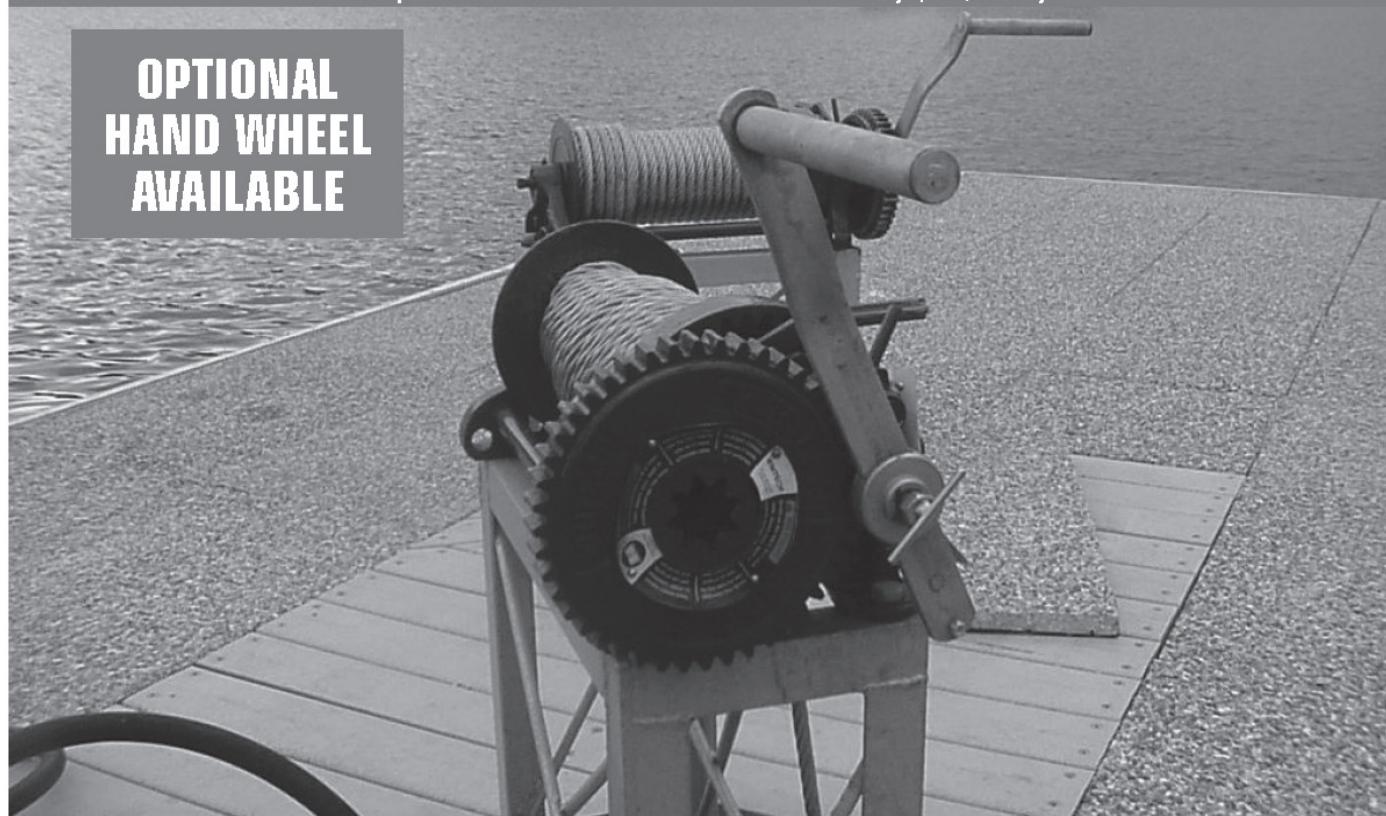
Model No.	A In.	B In.	C In.	D In.	E In.
LM6 LM6W	6	5 7/8	10 3/4	12 1/4	14
LM10 LM10W	10	7 3/4	14 5/8	16 1/4	18
LM16 LM16W	16	10 3/4	20 5/8	22 1/4	24
HM8 HM8W	8	7 7/8	13 7/8	15 3/8	17 3/4
HM12 HM12W	12	9 1/4	17 3/4	19 1/4	21 1/4
HM16 HM16W	16	11 1/2	22 1/4	23 3/4	25 3/4
HM24 HM24W	24	16 3/4	30 1/4	31 7/8	33 3/4

**The LM and HM Series
"All Steel" hand winches
are designed for marine duty
and industrial use.**

NOTE: Dimensions are subject to change. Please contact factory for certified prints.

Superior Value - Wintech Reliability / Quality

**OPTIONAL
HAND WHEEL
AVAILABLE**



What? STILL having a Bad Day?

Iraqi terrorist Hay Rahnajet didn't pay enough postage on a letter bomb. It came back with "Return to Sender" stamped on it. Forgetting it was the bomb, he opened it and was blown to bits.

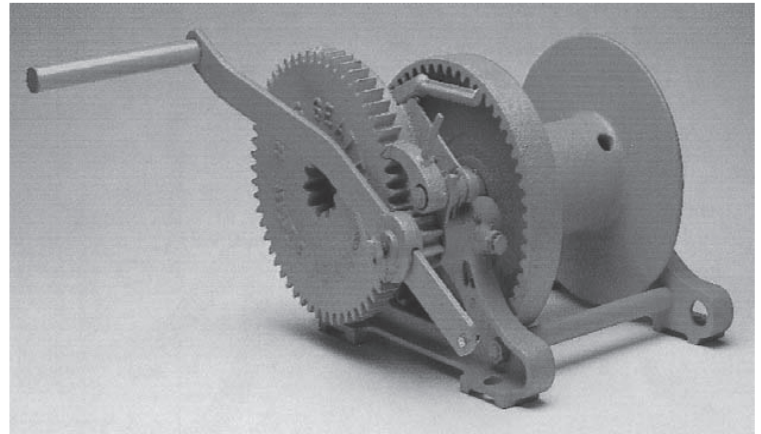
SPUR - GEAR SERIES 2 & 5 TON

Standard Features

Cast steel drum and ring gear
Steel load bearing components, cast steel frames
Replaceable bronze bushings
One piece fully adjustable 14" long steel operating handle with pinion
Spring loaded holding dog with release handle
Hand operated, adjustable holding brake
Easy free spooling
Two speed gear change offers fast cable take up and easier winching

Optional Features

Description	LM	HM
28" diameter hand wheel	1580-2	1580-1
Hand wheel for units with Disc brake handle (SHB)	3628	3628
Extended shaft pinion 17/16" X 12"	2833	991
Power Drive Pinion **	1942	1948
Gear covers	250-B	249
Disc brake handle	3679	3677
Marine 812 top coat		
Reverse dog assembly		
Drum divider flange		



5 Ton HM 12

Optional disc brake handle incorporates a "Weston" style load brake to automatically hold the rated load in lifting applications

Designed for Marine and Industrial Use

Spur gear series 2 and 5 Ton Specifications									
Model No.	Capacity 1st Layer US Tons*	Gear Ratio	Drum Capacities (ft)						Shipping wt y(lbs)
			1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	
LM6 LM6W	2	4:1/24:1	278	182	133	97	66	-	63 69
LM10 LM10W	2	4:1/24:1	464	300	222	161	111	-	77 88
LM16 LM16W	2	4:1/24:1	742	480	355	257	177	-	93 104
HM8 HM8W	5	4:1/24:1	-	-	358	284	220	123	123 135
HM12 HM12W	5	4:1/24:1	-	-	537	425	330	185	131 151
HM16 HM16W	5	4:1/24:1	-	-	716	566	440	247	142 166
HM24 HM24W	5	4:1/24:1	-	-	1075	850	660	371	163 174

Note: Not recommended for power operation.

Warning: Accessory drive pinion is intended only for faster cable take-up by user with no load, and should never be used for power driven winch or hoist

Warning: Before installation see maintenance and operations manual for additional warnings and precautions. This equipment is not to be used for lifting, supporting, or transporting people, or lifting or supporting loads over people.

y "W" at the end of the model no. indicates unit is equipped with a hand wheel.

STILL think you're having Bad Day?

Two animal rights defenders were protesting the cruelty of sending pigs to a slaughterhouse in Bonn, Germany. Suddenly, all two thousand pigs broke loose and escaped through a broken fence, stampeding madly. The two helpless protesters were trampled to death.



20 - 90 Ton Holding Capacity

STANDARD FEATURES:

- Additional tightening power from ratchet lever bar.
- Quick release holding dog, automatically disengages when not in use.
- Spinner knob on hand wheel for fast slack line take-up.
- Steel gear guard provides operator protection; prevents slack cable from fouling gears.
- Foot brakes control and prevent overrunning and birdnesting of wire rope.

OPTIONAL FEATURES:

- Wider drums, angle deck brackets, disengaging clutch.
- Wintech Winch Cables

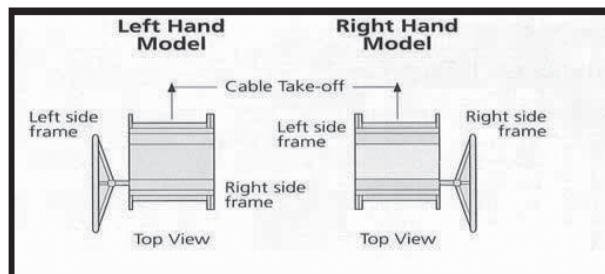
Built To Last Low-Profile to Keep the cable low on the “bitts” and the deck

Low-Profile manual barge winch specifications								Drum Options		
Model No.	Rated capacities (US Tons)			1st Layer	Drum	Shipping Weight (lbs)	Cubic feet	Capacity (US Tons)	Dimensions (Inches)	
	Dog Holding	Tightening		Gear Ratio	Diameter (in.)				Standard Drums	Wider Drums
		Hand	Ratchet							
20HL	20	3	5	7:1	8 5/8	600	18.0	20 ton	10	17, 24, 36, 48
25HL	40	5	10	14:1	10 3/4	650	22.0	40 ton	9	17, 35, 51, 69
50HL	65	7.5	15	20:1	12 3/4	1175	34.0	65 ton	11	20, 41, 61, 82
75HL	90	10	20	31:1	16	1880	37.0	90 ton	10	20, 40, 61, 81

Note: All models are shown with “L” designating left hand models; for right hand models, substitute “R” for “L” in

20HL-8 5/8" Drum diameter					25HL-10 3/4" Drum diameter					50HL-12 3/4" Drum diameter					75HL-16" Drum diameter				
Length (in.)	Drum Capacity (ft)				Length (in.)	Drum Capacity (ft)				Length (in.)	Drum Capacity (ft)				Length (in.)	Drum Capacity (ft)			
	5/8 in.	3/4 in.	7/8 in.	1 in.		5/8 in.	3/4 in.	7/8 in.	1 in.		5/8 in.	3/4 in.	7/8 in.	1 in.		5/8 in.	3/4 in.	7/8 in.	1 in.
10*	380	275	194	132	9*	248	162	142	88	11*	194	174	110	100	10*	119	108	98	56
17	650	470	330	225	17	479	314	277	174	20	377	338	216	197	20	247	225	207	119
24	915	650	460	317	35	975	643	568	359	41	773	694	445	408	40	523	478	441	254
36	1370	975	690	476	51	1472	971	865	544	61	1168	1051	674	619	61	798	731	675	390
48	1830	1300	920	634	69	1969	1299	1151	729	82	1564	1407	903	830	81	1074	983	909	525

*Standard length of drum (drum lengths are rounded to the nearest inch)



Rule of Thumb: Right or left hand models are determined by which side of the winch the handwheel is mounted on. As illustrated right, standing behind the winch, facing the cable take-off direction is the proper orientation for determining right or left hand requirements.

40-TON BARGE CONNECTOR WINCH



The time savings and speed in making up tows with winches instead of ratchets is useless if you have to maintain or repair it with every use. The Model BC-40 Barge Connector has been designed to use, not maintain. The winch features high capacity grease free synthetic bearing and a simple counterweight type ratchet without springs to minimize routine maintenance in the abusive waterways environment. The operation of the winch for both tightening and releasing the loads have been engineered for optimum user ergonomics and safety. From the ideal positioning and engagement of the ratchet lever controlled cable release brake the BC-40 is designed for easy operation.

Specifications

Performance:

Ultimate Capacity.....80,000 lbs.

Ratchet Tightening Capacity.....10,000 lbs.

Drum Capacity:

3/4"90 feet

7/8"85 feet

1"70 feet

Dimensions and Weight:

Overall Length25-1/2"

Overall Width17"

Overall Height.....21-1/2"

Overall with Deck Pivot Pin.....443 lbs.

FEATURES:

- Low Profile Compact Design Saves Deck Space.
- Hand Lever Operated brake for Controlled Load Release.
- Hand Wheel with Spinner Knob for Fast Take-up.
- Ratchet Lever for Final Tensioning.
- Machine Cut Gearing with Protective Guarding.
- High Capacity Synthetic Bearings on Drive and Drum Shafts.
- Connector Pin and Yoke Allows 360 Degree Rotation.
- Unique Pivot Pin Mounting (No D-Ring Required).
- Front Mounted Rope Guard Aligns Cable with Drum

NOTE: Dimensions are subject to change.

Please contact factory for certified prints.





Profile Barge Winch 40 - 90 Ton Holding Capacity

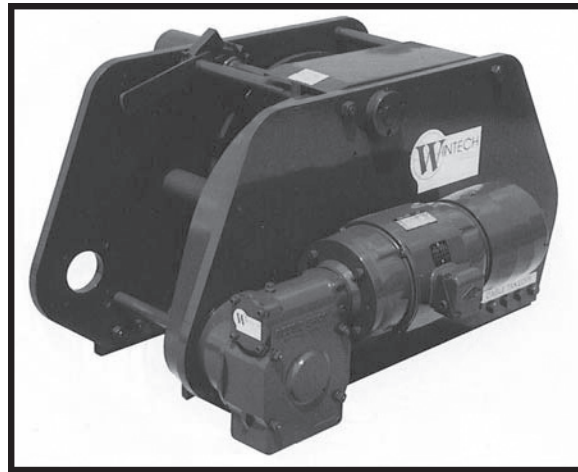
Taking The Winch Industry By Storm

STANDARD FEATURES:

- Totally enclosed, marine grade, fully reversing crane and hoist duty motors in 220, 440, or 575 volts.
- Winch stall pulls from 11,000 to over 50,000 lbs.
- Winch electric brake and worm drive gear holds from 46,000 to 111,000 lbs.
- Flame-cut precision-machined side frames.
- Enclosed drive gearing.
- Steel gear guard prevents slack cable from fouling gears.
- Automatic disc break.
- Simple effective design reduces maintenance cost.

OPTIONAL FEATURES:

- Remote control packages for pilot house control NEMA 1; General purpose enclosure NEMA 4; Watertight -NEMA 1 or 4 magnetic reversing starter.
- -NEMA 1 or 4 push button station.
- Wider drums (see wire rope storage chart (bottom left) for optional drum lengths.
- Slip Clutch.



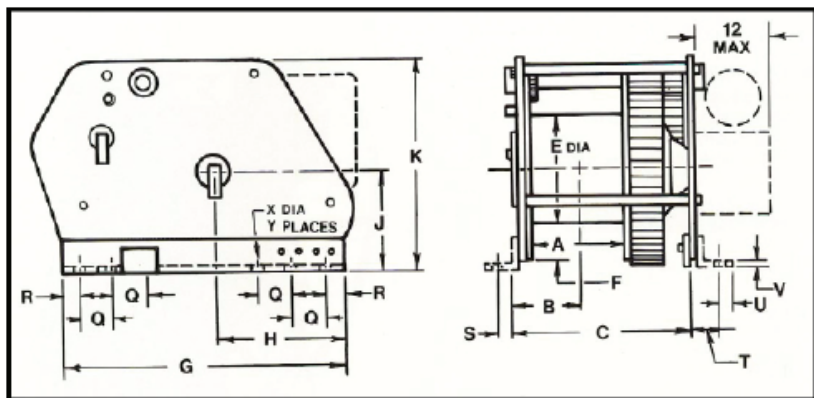
**Lowest profile design available /
Requiring the least amount of
Deck Space**

- Drum divider flange.
- Grooved drums.
- Angle deck brackets.
- Disengaging clutch and hand wheel for emergency power loss operation.
- Dual winch, barge spotting system.
- Special inquires invited for mooring and terminal application.
- Air and hydraulic models upon request.
- Wintech Winch Cables.



Electric Low - Profile Barge Winch 20 - 90 Ton Holding Capacity

Superior Value - Wintech Reliability / Quality



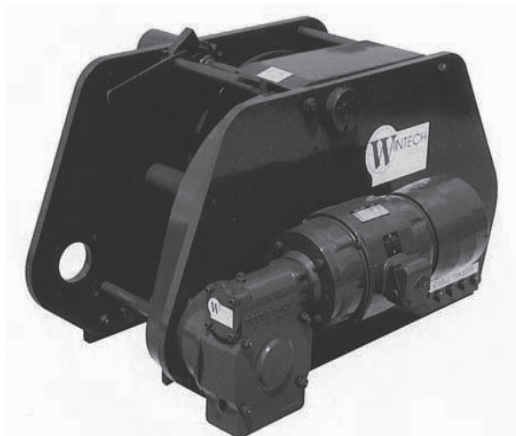
Perspective...

FOR ALL OF YOU WHO THINK YOU ARE HAVING A BAD DAY...

The average cost of rehabilitating a seal after the Exxon Valdez Oil spill in Alaska was \$80,000.00. At a special ceremony, two of the most expensively saved animals were being released back into the wild amid cheers and applause from onlookers.

A minute later, in full view, a killer whale ate them both.

ELECTRIC LOW - PROFILE BARGE WINCH



40 - 90 Ton Holding Capacity

STANDARD FEATURES:

- Totally enclosed, marine grade, fully reversing crane and hoist duty motors in 220, 440, or 575 volts.
- Winch stall pulls from 11,000 to over 50,000 lbs.
- Winch electric brake and worm drive gear holds from 46,000 to 111,000 lbs.
- Flame-cut precision-machined side frames.
- Enclosed drive gearing.
- Steel gear guard prevents slack cable from fouling gears.
- Automatic disc break.
- Simple effective design reduces maintenance cost.

Speed / Power / Durability

Low-Profile electric barge winch specifications											
Model No.	Dog Holding Capacity (tons)	Capacities (lbs)		Holding (lbs)	Line Speed (fpm)			Volts		Weight	
		Rated Pull	Stall* Pull		No Load	Rated Pull	HP	Phase Cycle	Net (lbs)	Ship (lbs)	Cu.ft
25HL-E1	40	4,000	11,000	20,000	34	31	5	230/460-3-60	700	720	22.0
25HL-E2	40	6,000	16,500	20,000	34	31	7.5	230/460-3-60	750	770	22.0
25HL-E3	40	8,000	22,000	20,000	34	31	10	230/460-3-60	800	825	22.0
50HL-E1	65	6,000	16,500	30,000	23	21	5	230/460-3-60	1225	1245	34.0
50HL-E2	65	9,000	24,800	30,000	23	21	7.5	230/460-3-60	1275	1295	34.0
50HL-E3	65	12,000	33,000	30,000	23	21	10	230/460-3-60	1325	1345	34.0
75HL-E1	90	9,300	25,600	40,000	14	13	5	230/460-3-60	1930	1930	37.0
75HL-E2	90	13,900	38,200	40,000	14	13	7.5	230/460-3-60	1980	2000	37.0
75HL-E3	90	18,500	50,900	40,000	14	13	10	230/460-3-60	2030	2030	37.0

Note: All models are shown with "L" designating left hand models; for right hand models, substitute "R" for "L" in model number.

*Stall pull rated at specified voltage with holding dog engaged.

25HL-10 3/4" Drum diameter					20HL-8 5/8" Drum diameter					20HL-8 5/8" Drum diameter				
Length (in.)	Drum Capacity (ft)				Length (in.)	Drum Capacity (ft)				Length (in.)	Drum Capacity (ft)			
	5/8 in.	3/4 in.	7/8 in.	1 in.		5/8 in.	3/4 in.	7/8 in.	1 in.		5/8 in.	3/4 in.	7/8 in.	1 in.
9*	248	162	142	88	11*	194	174	110	100	10*	119	108	98	56
17	479	314	277	174	20	377	338	216	197	19	247	225	207	119
34	975	643	568	359	41	773	694	445	408	40	523	478	441	254
51	1472	971	865	544	61	1168	1051	674	619	60	798	731	675	390
69	1969	1299	1151	729	82	1564	1407	903	830	81	1074	983	909	525

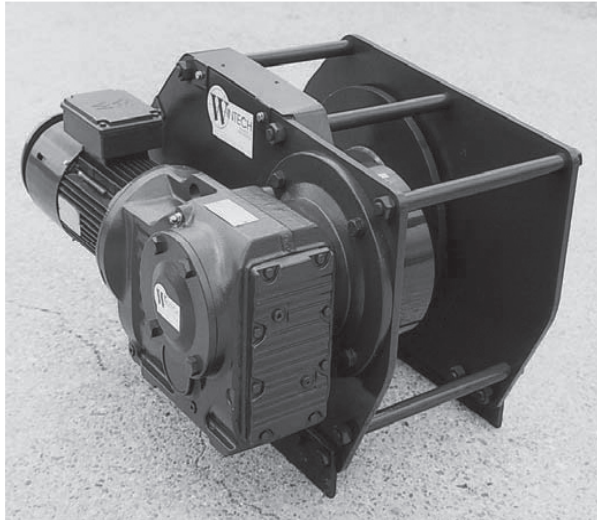
* Standard length of drum (drum lengths are rounded to the nearest inch)

**LOWEST PROFILE
DESIGN AVAILABLE
/ REQUIRING THE
LEAST AMOUNT OF
DECK SPACE**

OPTIONAL FEATURES:

- Remote control packages for pilot house control NEMA 1; General purpose enclosure NEMA 4; Water-tight
- NEMA 1 or 4 magnetic reversing starter.
- NEMA 1 or 4 push button station.
- Wider drums (see wire rope storage chart (bottom left) for optional drum lengths.
- Slip Clutch.
- Drum divider flange.
- Grooved drums.
- Angle deck brackets.
- Disengaging clutch and hand wheel for emergency power loss operation.
- Dual winch, barge spotting system.
- Special inquiries invited for mooring and terminal application.
- Air and hydraulic models upon request
- Wintech Winch Cables

Model 20HL-E1



The Model 20-HL-E1 Barge Winch has been designed specifically for small pushboats and harbor tugs to save time in making up tows.

The winch has a powerful 5 HP motor which results in higher speeds without compromising linepull.

The spring set braking system is capable of holding the 20 ton rated load allowing the operator to attach to the load, tighten and go.

The entire winch is designed with only 3 bushings, resulting in reduced maintenance and more up time.

Speed / Power / Durability

Specifications

Performance:

Brake Holding Capacity.....20 Tons
 Rated Continuous Linepull.....6,000 lbs.
 Rated Stall Linepull.....16,500 lbs.
 Mid Drum Linespeed.....30 FPM

Drum Capacity:

5/8".....380 feet
 3/4"275 feet
 7/8"194 feet
 1"132 feet

Dimensions and Weight:

Overall Length32-1/2"
 Overall Width26-1/2"
 Overall Height.....23-1/2"
 Overall with Deck Pivot Pin.....875lbs.

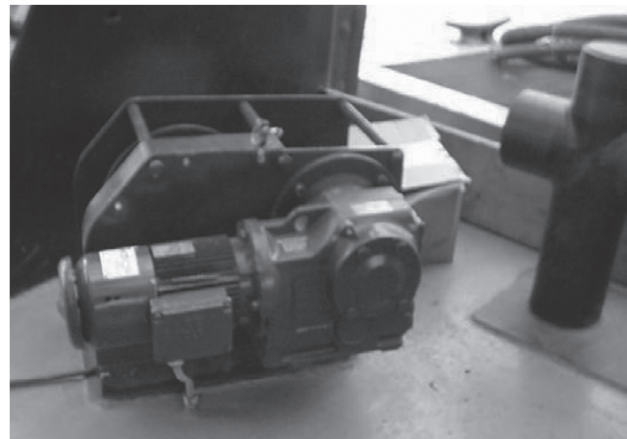


30 TON MODEL ALSO AVAILABLE

FEATURES:

- High Speed operation ideal for Harbor Tug Applications
- 5 Horsepower TEFC Motor and Brake
- 230/460 Volt - 3 phase - 60 Hz. Power
- Spring Set - Electric release holding brake
- Fully enclosed gearbox with open final gear set
- Machine cut gearing with protective guarding
- Brake release and manual crank for emergency operation

NOTE: Dimensions are subject to change. Please contact factory for certified prints.

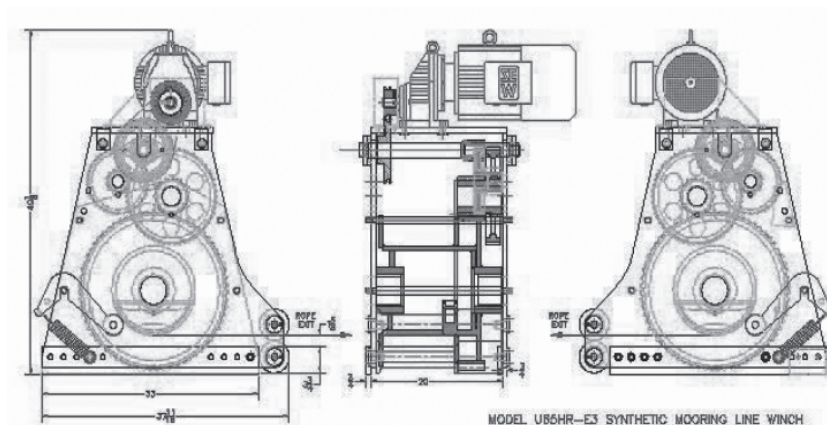




Redesigned Wintech Upright with new style brake. Less Moving Parts. Has a unique anti-fouling pinch roller to prevent bird-nesting and damage to the cable.

**DESIGNED FOR
SYNTHETIC ROPES
SMALL FOOTPRINT
LOW
MAINTENANCE**

Model U65HR-E3 Barge Winch



Can be used for Synthetic or Steel Cables

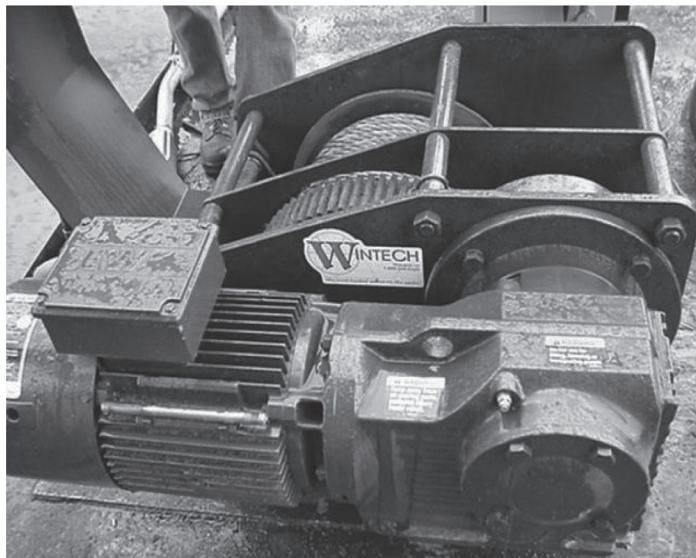
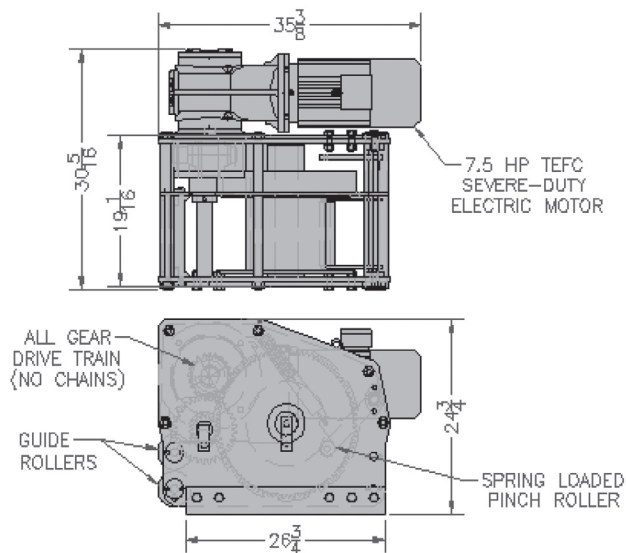
*Other Drum Lengths &
Rope Capacities Available*

Wintech continues its reputation for reliable winches with the introduction of the U65HR-E3 Electric Barge Winch.

- 65 ton Dog Holding Capacity / 35,000 lbs Brake Holding Cap.
- 12,000 lbs Running Line Pull @ 21 fpm on 1st Layer
- Spring-Loaded Pinch Roller System
- Nylatron Guide Rollers reduce rope abrasion
- 10 HP Severe Duty TEFC Electric Motor with Holding Brake
- 12.75" drum core x 11" drum width
- Drum accepts Standard Wedges for Rope Attachment
- Capacity for 240 feet of 3/4" Synthetic Rope
- Left and Right Hand Versions Available

CAN ALSO BE USED WITH STEEL CABLE

40HL - E2



Reduced Cable Fouling—Compact—Low Maintenance—All Gear Driven

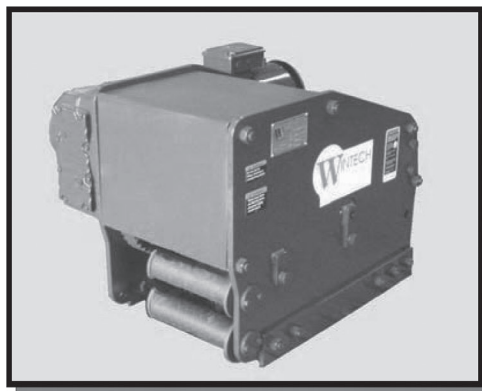
Wintech continues its reputation for reliable winches with the introduction of the 40HL-E2 Electric Deck Winch.

- ◆ 40 Ton Holding Capacity / 13800 lbs Line Pull @18 ft/min
- ◆ Pinch-Roller System Dramatically Reduces Cable Backlash
- ◆ 7.5 HP Severe Duty TEFC Electric Motor with Holding Brake
- ◆ Helical Bevel Gear Reducer with Final Spur Gear Reduction
- ◆ Drum accepts Standard Wedges for Cable Attachment
- ◆ Removable Steel Hood Covers the entire drum
- ◆ Nylatron Guide Rollers Reduce Cable Wear

CABLE CAPACITY (9" LONG DRUM)

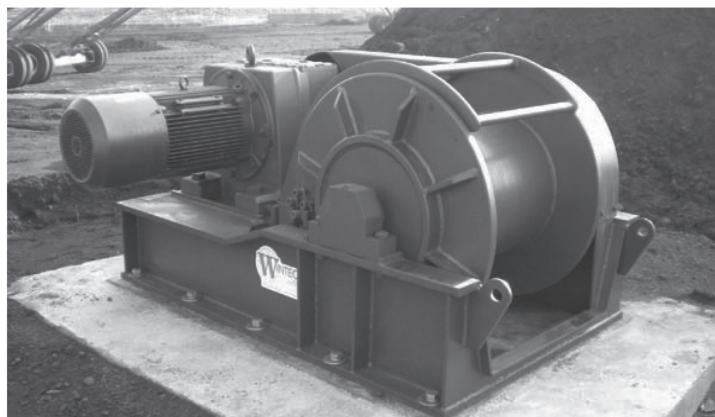
5/8" Cable	3/4" Cable	7/8" Cable	1" Cable
286 ft	196 ft	130 ft	116 ft

Other Drum Lengths / Cable Capacities Are Available



PINCH ROLLER PREVENTS FOULED WINCH WIRES AND BIRD NESTING

HEAVY DUTY CP ELECTRIC WINCHES



GEAR REDUCTION

Jeamar CP Electric Winches have parallel helical gear reducer with a final chain drive.

NEMA DESIGN

There is a totally enclosed fan cooled electric motor with adequate starting torque to overcome the initial inertia of the pulling load.

VOLTAGE

Jeamar CP Electric Winches are available in 230 / 460 / 575 / 3 / 60 voltages.

AUTOMATIC BRAKES

The spring applied, electric release brake activates in the event of power interruption to stop and hold the load securely.

HEAVY DUTY STEEL FRAME

Jeamar CP Electric Winches feature heavy duty welded steel frames and guarding.

OPTIONS

This series of winches can be ordered with starter panels and control packages, marine grade and explosion proof motors. As well, grooved drums, rotary limit switches, adjustable torque limiter disengaging clutches are also available options. **Please call with any requirement you may have.**

Model Number		CP 2000 -15	CP 2000 -25	CP 2000 -40	CP 2000 -70	CP 3000 -20	CP 3000 -50	CP 4000 -40	CP 4000 -70	CP 6000 -20	CP 6000 -45	
Linepull - Starting (1st Layer)	lb	5750	6049	5635	5911	8211	8142	11500	12420	17940	18400	
	kg											
Linepull - Starting (4th Layer)	lb	4370	4600	4255	4485	6440	6440	8740	9200	13570	13800	
	kg											
Linepull - Running (1st Layer)	lb	2500	2630	2450	2570	3570	3540	5000	5400	7800	8000	
	kg											
Linepull - Running (4th Layer)	lb	1900	2000	1850	1950	2800	2800	3800	4000	5900	6000	
	kg											
Line Speed (2nd Layer)	ft/min	15	28	44	71	20	51	37	68	23	46	
	m/min											
Motor	Hp	1	2	3	5	2	5	5	10	5	10	
	kW											
Cable Size	in	3/8	3/8	3/8	3/8	7/16	7/16	1/2	1/2	5/8	5/8	
	mm											
Drum Capacity (2nd Layer)	ft	124	124	124	124	159	159	141	141	161	161	
	m											
Drum Capacity (Full Drum)	ft	446	446	446	446	453	453	408	408	465	465	
	m											
Weight	lb	365	379	395	395	707	723	814	872	1290	1370	
	kg											
DIMENSIONS	A	in	17	17	17	17	20	20	20	20	26	26
		mm										
	B	in	22 1/2	22 1/2	22 1/2	22 1/2	25 1/2	25 1/2	25 1/2	25 1/2	30 3/4	30 3/4
		mm										
	C	in	29	29	29	29	36	36	36	36	44	44
		mm										
	D	in	12	12	12	12	14	14	14	14	16	16
		mm										
	E	in	12	12	12	12	14	14	14	14	18	18
		mm										
	F	in	6 5/8	6 5/8	6 5/8	6 5/8	8 5/8	8 5/8	8 5/8	8 5/8	10 3/4	10 3/4
		mm										
	G	in	9	9	9	9	10 1/2	10 1/2	10 1/2	10 1/2	13 1/2	13 1/2
		mm										

BARGE MOVING SYSTEM The Ultimate in Positioning Control

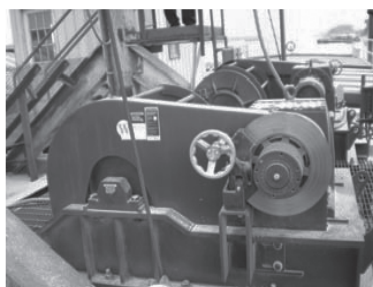
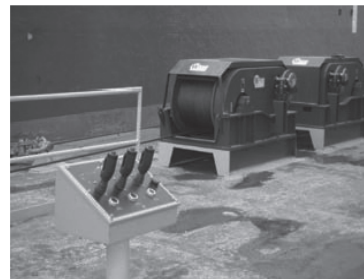
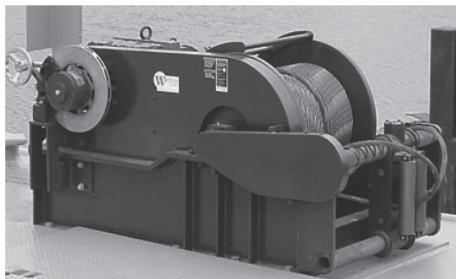
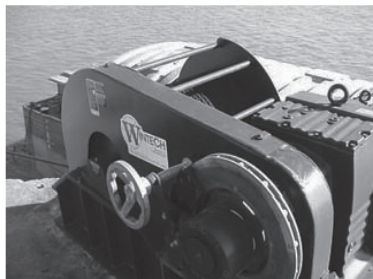


Wintech Barge Moving Systems provide Safe and Efficient Performance

Starting, moving, and stopping 2,000 ton barges with control and safety can be a challenge. Wintech Barge Moving Systems feature the latest in winching technology. Wintech's proven system designs allow for smooth acceleration and deceleration of barge movement. Line speeds are infinitely variable from zero to maximum speed. Ramping up and down of speed reduces shock loading on the winches and rigging, thus minimizing potential for winch damage and cable breakages. A unique mechanical drag brake offers controlled tension on the tailing winch, reducing slack cable. Winches are fully electric with no environmentally unfriendly hydraulic components.

WINCH CONTROLS

Winch controls are simple and easy to understand. Each system comes standard with a single operator control console. For control station flexibility systems can be offered with an additional operator console or with wireless remote controls that can be used by a crane operator or dock personnel. Both hard-wired and radio controls offer the identical control features. All controls are rated for NEMA 4 wash-down proof protection.



WINCHES

Typical winch capacities range from 10,000 lbs through 35,000 lbs continuous linepull, though custom capacities are also available for unique applications. All winches are constructed from extra heavy duty materials, utilize a minimum number of moving parts and are designed for low maintenance and long service life. Standard winch features include greasable tapered roller drum bearings, fabricated steel frame and drum, high efficiency parallel-helical gear reducer, fail-safe spring applied holding brake, and heavy duty mechanical hold-back tensioning brake. Winch frames are equipped with base mounting holes, allowing winches to be either bolted or welded in place.



Similar systems are also available for Rail Car Spotting Applications

BARGE MOVING SYSTEM

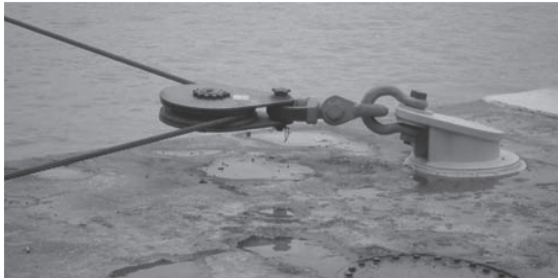
WINCH SYSTEM OPERATION

The Wintech Barge Moving System is the ultimate in barge moving controllability. A typical system consists of two winches, a 36" x 48" NEMA 4 enclosed drive cabinet, and an operator control console. Electrical cabinet and control consoles may be mounted and used indoors or outdoors. Variable Frequency Drive Technology gives the winch system the ability to slowly accelerate to desired movement speed and slowly decelerate to a safe stopping speed. Another feature of the system is a selector switch for Manual and Auto Modes. In Manual Mode the operator can control each winch individually while securing and pre-tensioning rigging. Once the cables are tightened the operator can then switch to Auto Mode. In Auto Mode the operator controls movement of the barge upstream and downstream via a single joystick. A speed control knob allows adjustment of system speed from 0 to the maximum rated system speed via a single control knob. Maximum speeds can be customized to suit specific customer requirements. Each winch is equipped with a bronze disc-type drag brake and manually adjustable caliper for controlled tail tension during pulling operations.



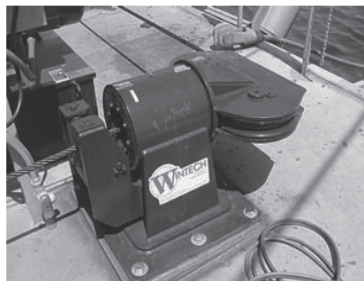
Designed to provide years of reliable operation and dependable service for your barge positioning requirements.

Wintech Barge Moving Systems offer the ultimate in control, safety, and flexibility. From simple, single barge spotting applications to multiple barge, high production loading applications.



SHEAVES, BLOCKS & FAIRLEADS

Wintech offers a wide range of high quality standard and custom designed sheaves, blocks, and fairleads for any barge moving system application.



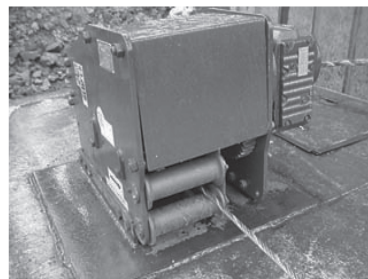
CONTINUED NEXT PAGE



SPECIAL OPTIONS

Wintech can customize a system to meet your specific application needs.

- ◆ Radio Remote Control Packages
- ◆ Automatic Levelwinds
- ◆ Wire Rope Pre-Installed
- ◆ Load Travel Limit Switches
- ◆ Multiple Control Stations
- ◆ Custom Voltages

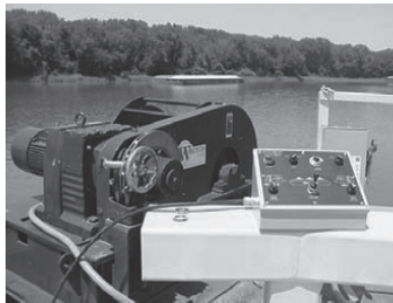
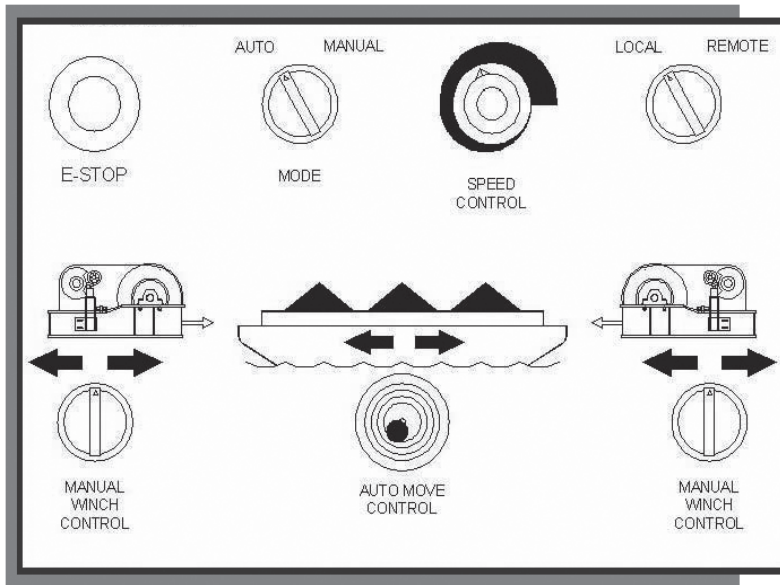


Breasting Winches



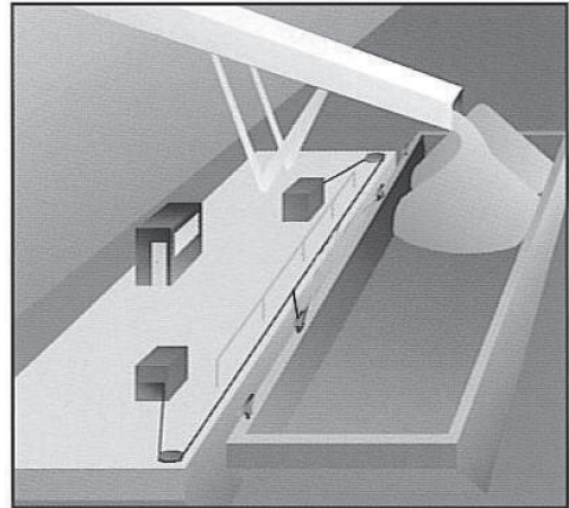
Breasting Capstans

BARGE MOVING SYSTEM

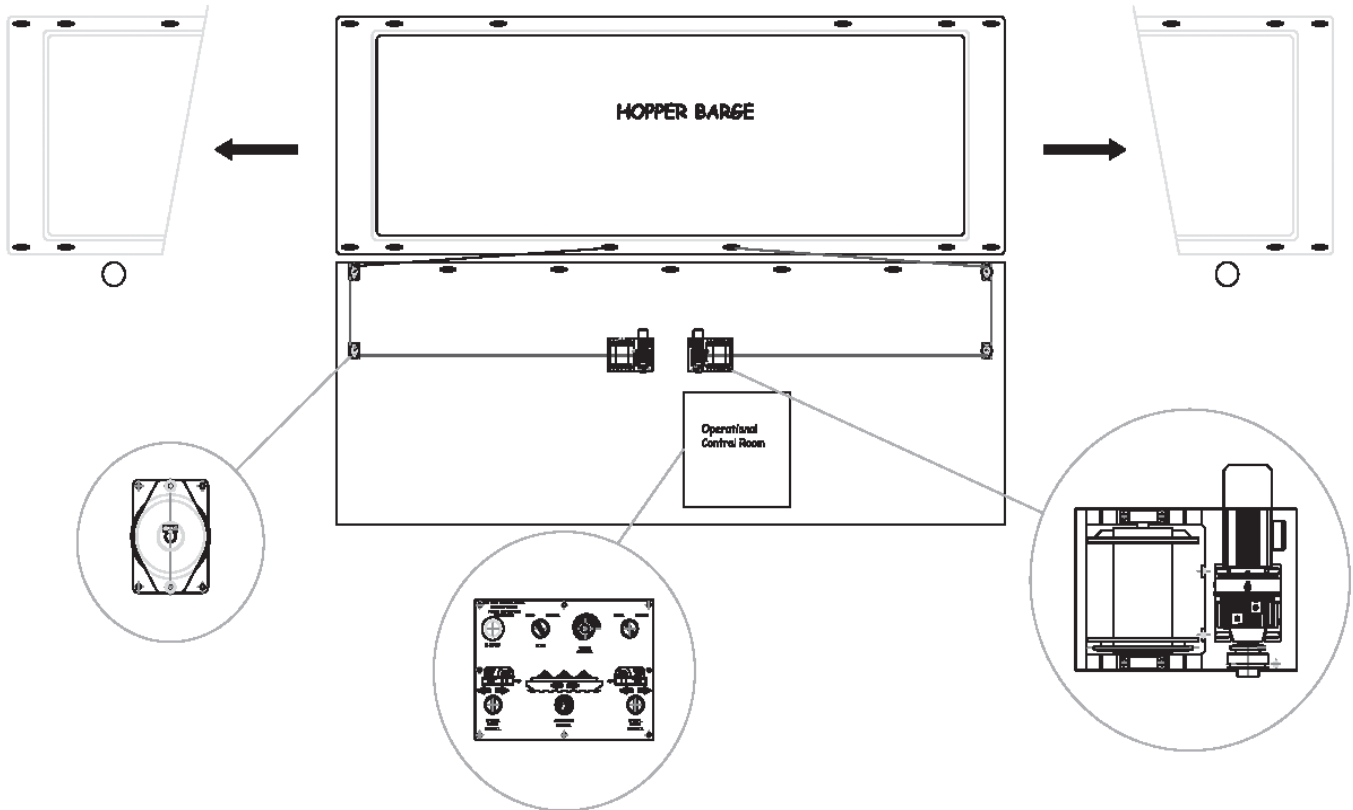


Wintech

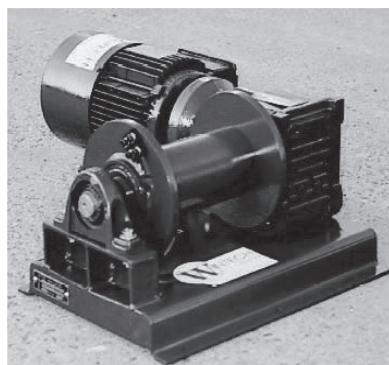
Wintech has been designing and manufacturing Barge Positioning Systems for many years. Companies from all over the United States inland river system, coastal waterways, and other countries rely on the efficiency, safety and dependability of our systems. Chances are there is a system near you. If you would like additional information on Wintech Barge Positioning Systems or if you have an interest in visiting an existing installation to see for yourself we are eager to assist you.



Sample Barge Positioning System Layout



RK SERIES WINCHES 500 - 6,000 LBS. CAPACITY



**PERFECT FOR MANY
INDUSTRIAL,
CONSTRUCTION,
MINING AND OIL
FIELD APPLICATIONS**

Superior Value - Wintech Reliability / Quality

STANDARD FEATURES

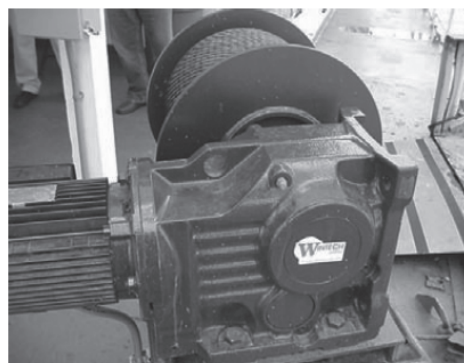
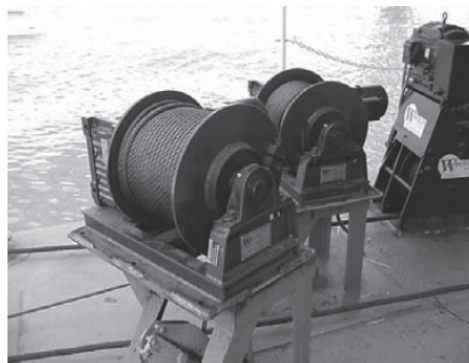
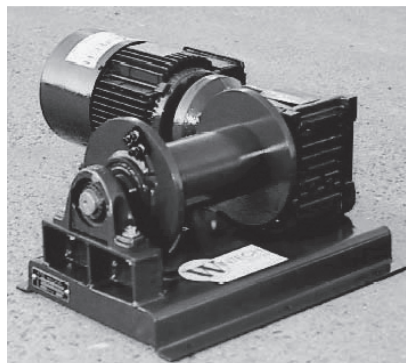
- Direct drive fully enclosed gear reducer with helical-bevel gearing.
- NEMA design "D" totally enclosed fan cooled electric motors with high starting torque to overcome initial inertia of pulling load.
- 230/460/3/60 Voltage.
- Automatic electromagnetic activates in the event of power interruption to brake stop and hold load securely.
- Heavy duty welded steel frame and drum construction with bolt down provision.
- Ball and roller bearing mounted drum for high efficiency.
- Winch is sandblasted, primed and painted.

OPTIONAL FEATURES:

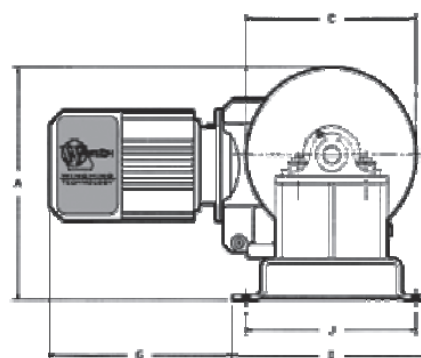
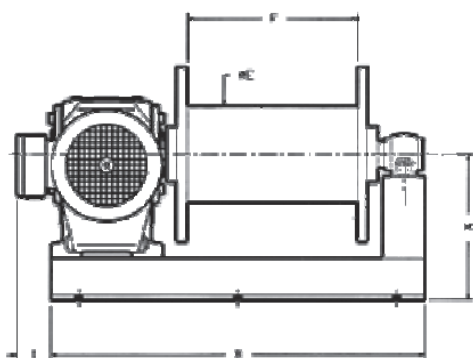
- NEMA 1 and NEMA 4 starter panels and control packages
- Marine grade motor and gear reducer
- Longer or shorter drum lengths
- Adjustable torque limiter disengaging clutch
- Explosion - proof motors
- Rotary limit switch
- Grooved Drums
- Customs designs available

Model	Line Pull (LBS)				Line Speed (FPM) 2nd Layer	H.P.	Cable Size (inch)	Drum Capacity (ft)	
	Starting		Running					2nd Layer	Full Drum
	1st Layer	4th Layer	1st Layer	4th Layer					
RK500-20	1260	960	550	420	22	1/3	1/4	84	300
RK500-50	1260	960	550	420	49	3/4	1/4	84	300
RK800-20	2150	1650	950	720	19	1/2	1/4	84	300
RK800-80	2150	1650	950	720	78	2	1/4	84	300
RK1000-20	2500	1900	1100	840	25	3/4	1/4	84	300
RK1000-50	2500	1900	1100	840	49	1 1/2	1/4	84	300
RK1000-150	2500	1900	1100	840	162	5	1/4	84	300
RK1500-30	3900	3100	1700	1340	32	1 1/2	3/8	124	446
RK1500-60	3700	2900	1600	1260	67	3	3/8	124	446
RK2000-20	6200	4700	2700	2043	20	1 1/2	3/8	124	446
RK2000-40	6200	4700	2700	2043	41	3	3/8	124	446
RK2000-75	5600	4200	2440	1840	75	5	3/8	124	446
RK3000-30	7350	5750	3200	2500	34	3	7/16	136	388
RK3000-80	7700	6000	3350	2600	81	5	7/16	136	388
RK4500-20	12400	9300	5400	4070	20	3	1/2	121	349
RK4500-50	11600	8800	5050	3820	53	7 1/2	1/2	121	349
RK6000-40	14700	11000	6400	4800	43	7 1/2	5/8	161	465
RK6000-75	16500	12500	7200	5450	75	15	5/8	161	465

RK SERIES WINCHES 500 - 6,000 LBS. CAPACITY



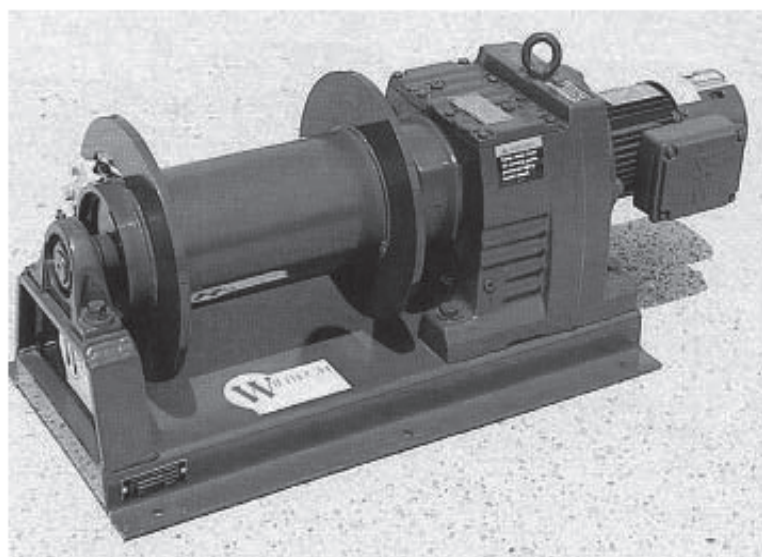
Superior Value - Wintech Reliability / Quality



Model	DEMENSIONS (INCHES)									
	A	B	C	D	E	F	H	I	J	WEIGHT (LBS)
RK500-20	10 1/2	19 3/4	8	11 3/4	4 1/2	8	6 1/2	2 1/2	10 1/4	130
RK500-50	10 1/2	19 3/4	8	11 3/4	4 1/2	8	6 1/2	2 1/2	10 1/4	137
RK800-20	10 1/2	19 3/4	8	11 3/4	4 1/2	8	6 1/2	2 1/2	10 1/4	137
RK800-80	10 1/2	19 3/4	8	11 3/4	4 1/2	8	6 1/2	3 3/4	10 1/4	149
RK1000-20	11 1/2	20 3/4	8	11 3/4	4 1/2	8	7 1/2	2 1/8	10 1/4	150
RK1000-50	11 1/2	20 3/4	8	11 3/4	4 1/2	8	7 1/2	3 1/2	10 1/4	164
RK1000-150	11 1/2	20 3/4	8	11 3/4	4 1/2	8	7 1/2	3 3/4	10 1/4	181
RK1500-30	15 1/8	24 3/4	12	16 1/2	6 7/8	12	9 1/8	2 3/4	14 3/4	234
RK1500-60	15 1/8	24 3/4	12	16 1/2	6 7/8	12	9 1/8	2 7/8	14 3/4	250
RK2000-20	16 3/8	26 1/4	12	16 1/2	6 7/8	12	10 3/8	2 1/8	14 3/4	303
RK2000-40	16 3/8	26 1/4	12	16 1/2	6 7/8	12	10 3/8	2 1/4	14 3/4	322
RK2000-75	16 3/8	26 1/4	12	16 1/2	6 7/8	12	10 3/8	2 1/4	14 3/4	322
RK3000-30	19 3/4	26 3/4	14	19 1/2	8 7/8	12	12 3/4	2 1/2	17 3/4	436
RK3000-80	19 3/4	26 3/4	14	19 1/2	8 7/8	12	12 3/4	3	17 3/4	471
RK4500-20	19 7/8	30 1/4	14	22 3/4	8 7/8	12	12 7/8	1 1/2	17 3/4	662
RK4500-50	19 7/8	30 1/4	14	22 3/4	8 7/8	12	12 7/8	1 1/2	17 3/4	675
RK6000-40	23 1/2	35 3/4	18	23 3/4	10 3/4	16	14 1/2	2 3/4	21 1/4	1061
RK6000-75	23 1/2	35 3/4	18	23 3/4	10 3/4	16	14 1/2	2 2/3	21 1/4	1140

NOTE: Dimensions are subject to change. Please contact factory for certified prints.

BP SERIES WINCHES 500 - 6000 LBS. CAPACITY



PERFECT
FOR MANY
INDUSTRIAL,
CONSTRUCTION,
MINING AND
OIL FIELD
APPLICATIONS



Superior Value - Wintech Reliability / Quality

STANDARD FEATURES

- Direct drive fully enclosed gear reducer with parallel helical gearing.
- NEMA design "D" totally enclosed fan cooled electric motors with high starting torque to overcome initial inertia of pulling load.
- 230/460/3/60 Voltage.
- Automatic electromagnetic activates in the event of power interruption to brake stop and hold load securely.
- Heavy duty welded steel frame and down provision.
- Ball and roller bearing mounted drum for high efficiency.
- Winch is sandblasted, primed and painted

OPTIONAL FEATURES:

- NEMA 1 and NEMA 4 starter panels and control packages
- Marine grade motor and gear reducer
- Longer or shorter drum lengths
- Adjustable torque limiter disengaging clutch
- Explosion - proof motors
- Rotary limit switch
- Grooved Drums
- Customs designs available

Model	Line Pull (LBS)				Line Speed (FPM) 2nd Layer	B.P.	Cable Size (inch)	Drum Capacity (ft)	
	Starting		Running					2nd Layer	Full Drum
	1st Layer	4th Layer	1st Layer	4th Layer					
BP300-2D	1260	960	330	420	22	1/3	1/4	34	300
BP300-4D	1320	990	370	430	48	3/4	1/4	34	300
BP800-3D	2070	1390	500	690	30	3/4	1/4	34	300
BP1000-2D	2330	1930	1110	840	27	3/4	1/4	34	300
BP1000-3D	2620	2060	1140	870	48	1 1/2	3/16	146	620
BP1300-2D	4180	3290	1820	1430	20	3/4	3/8	124	446
BP1300-4D	4180	3290	1820	1430	40	2	3/8	124	446
BP2000-1D	3220	4120	2270	1790	16	1	3/8	124	446
BP2000-4D	3430	4280	2370	1860	47	3	3/8	124	446
BP3000-2D	7960	6190	3460	2690	21	2	7/16	136	388
BP3000-3D	7960	6190	3460	2690	32	3	7/16	136	388
BP3000-8D	7960	6190	3460	2690	78	7 1/2	7/16	136	388
BP4300-2D	11200	8420	4870	3680	23	3	1/2	121	340
BP4300-3D	11340	8330	4930	3710	36	7 1/2	1/2	121	340
BP6000-4D	14700	11040	6390	4800	43	7 1/2	3/8	161	460

HEAVY DUTY CAPSTAN WINCHES



DIRECT DRIVE

A direct-drive design increases the efficiency of the capstan winch and eliminates drive chains or bull gears to maximize power output.

ANY ANGLE

The rope can leave the drum at any angle, enabling the operator to stand in the most appropriate, out of line of sight location. For safety the load line shall be the bottom wrap on the drum, and the lead line going to the operator will be the top wrap on the drum

GEAR REDUCERS

All Jeamar capstan winches utilize high-efficiency worm, helical, helical-worm or helical-bevel reducers plus high-capacity, anti-friction bearings designed for long life, low noise and higher output torque.

HIGH STARTING LOADS

High-starting-torque, 3-phase motors are available in all standard voltages at 50 and 60 Hz. These motors are suited to railcar pulling where momentary overloads occur when a railcar is started in motion. Single phase motors at 115/230 volts at 50 or 60 Hz are available as an option on some models.

LOAD CALCULATIONS

For detail on pulling railcars up grades, send for our free railcar pulling brochure, or see technical notes, page 54.

OPTIONS

CONTROLS

Capstans can be supplied with start/stop, foot-operated controls of the "deadman" variety. If the operator's foot moves off the switch, the capstan will stop. This type of control allows the operator to use two hands on the rope, for optimum control (see page 41).

HYDRAULIC AND AIR-DRIVEN MOTORS

Capstan winches can be supplied with either hydraulic or air motors.

EXPLOSION PROOF

Fully explosion-proof motors and controls are available for applications in hostile or volatile environments.

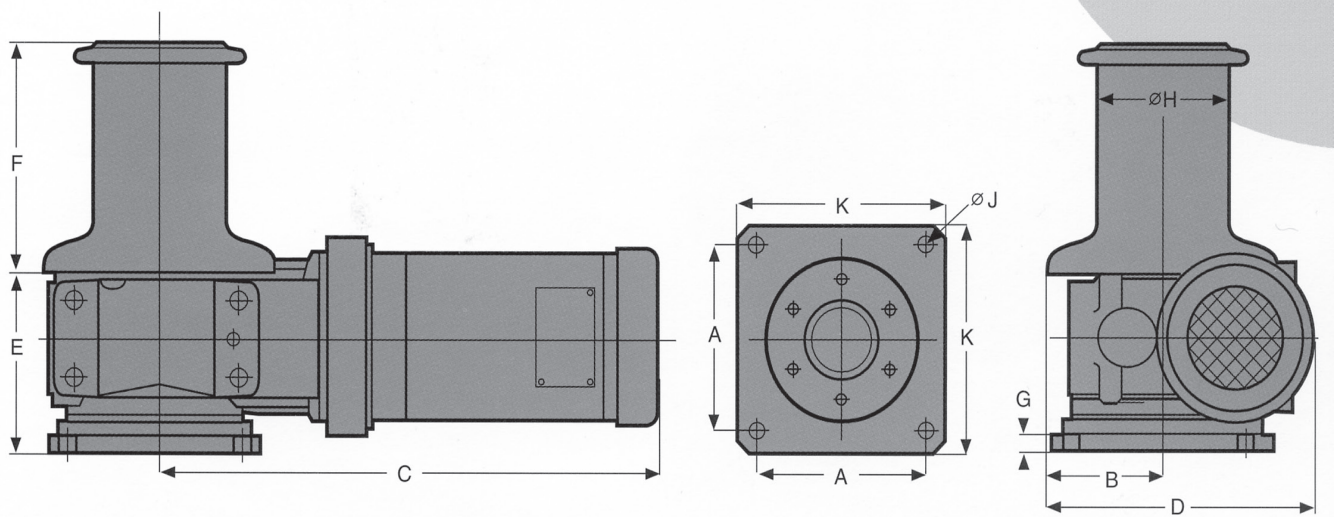
TORQUE LIMITATION

Capstans can be supplied with a variable frequency drive (VFD) package. The VFD controls the amount of current that the motor can draw, limiting the amount of torque that the electric motor can produce (see page 41).

Important: Due to our policy of continuing development, all specifications are subject to change without notice. Users of these products are responsible for ensuring their suitability for the application in which they are being used.

probably from Louisiana if...

You pronounce the largest city in the state as "Newawlins."



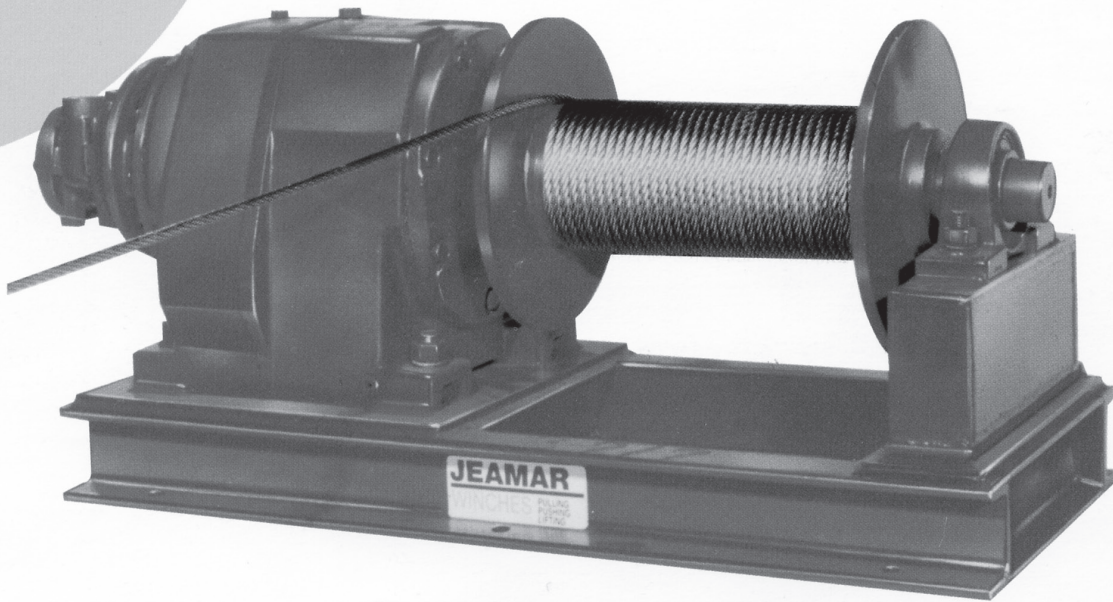
Model Number		VC 2000-26	VC 5000-30	VC 5000-45	VC 8000-13	VC 8000-30	VC 12000-17	VC 15000-13	VC 18000-17	VC 22000-17	
Working Load Limit Starting	lb	2000	5000	5000	8000	8000	12000	15000	18000	22000	
	kg	907	2268	2268	3628	3628	5442	6803	8163	9977	
Working Load Limit Running	lb	1000	2500	2500	4000	4000	6000	7500	9000	11000	
	kg	454	1134	1134	1814	1814	2721	3401	4082	4989	
Rope Speed	ft/min	26	30	45	13	30	17	13	17	17	
	m/min	8	9	14	4	9	5	4	5	5	
Rope Diameter* (Polypropylene)	in	5/8	1-1/8	1-1/8	1-1/2	1-1/2	1-3/4	2	-	-	
	mm	16	29	29	38	38	44	50	-	-	
Rope Diameter* (Spect-Set)	in	5/8	5/8	5/8	3/4	3/4	7/8	1	1-1/4	1-1/4	
	mm	16	16	16	20	20	22	25	32	32	
Motor	Hp	1.5	3	5	3	5	5	5	7.5	7.5	
	kW	1.1	2.3	3.8	2.3	3.8	3.8	3.8	5.7	5.7	
Weight	lb	202	330	355	452	474	660	1124	1162	1379	
	kg	92	150	161	205	215	299	510	527	625	
DIMENSIONS	A	in	9.00	9.00	9.00	14.50	14.50	14.50	17.00	17.00	17.00
		mm	229	229	229	368	368	368	432	432	432
	B	in	5.58	6.00	6.00	8.75	8.75	8.75	10.50	10.50	12.40
		mm	142	152	152	222	222	222	267	267	315
	C	in	14.66	26.39	26.39	27.62	27.62	30.00	32.00	32.66	51.66
		mm	372	670	670	702	702	762	813	830	1312
	D	in	11.83	14.00	14.00	18.00	18.00	19.77	23.69	23.69	22.90
		mm	300	356	356	457	457	502	602	602	582
	E	in	8.95	10.05	10.05	11.81	11.81	13.75	16.09	16.09	11.88
		mm	227	255	255	300	300	349	409	409	302
	F	in	5.25	11.50	11.50	11.50	11.50	11.50	11.50	11.50	11.50
		mm	133	292	292	292	292	292	292	292	292
	G	in	0.75	0.75	0.75	1.00	1.00	1.00	1.25	1.25	1.25
		mm	19	19	19	25	25	25	32	32	32
	H	in	4.00	7.00	7.00	7.00	7.00	9.00	11.00	11.00	11.00
		mm	102	178	178	178	178	229	279	279	279
	J	in	0.81	0.81	0.81	1.06	1.06	1.06	1.31	1.31	1.31
		mm	21	21	21	27	27	27	33	33	33
	K	in	11.00	11.00	11.00	17.50	17.50	17.50	21.00	21.00	21.00
		mm	279	279	279	445	445	445	533	533	533

Important: Due to our policy of continuing development, all specifications are subject to change without notice. Users of these products are responsible for ensuring their suitability for the application in which they are being used.

probably from Louisiana if...

You know those big roaches can fly, but you're able to sleep at night anyway.

HEAVY DUTY AIR TUGGER WINCHES



WINCH DRUMS

Drums are steel fabricated and designed to specific loading capacity. Drums are sized according to ASME B30.7.94 to provide a minimum pitch diameter of 15 times the nominal rope diameter.

DIRECT DRIVE

A simple, direct-drive design increases the efficiency of the winch and eliminates drive chains or bull gears to maximize power output.

ANY POSITION

An open-base design permits mounting in horizontal or vertical positions. Loads can be pulled through the base itself, which is particularly useful in limited-space installations.

BALL & ROLLER BEARINGS THROUGHOUT

Friction load loss is reduced to a minimum through the use of ball and roller bearings. No bushings means higher efficiency and more power for pulling.

POWER IN — POWER OUT

For added safety, all winches are fully reversible. This gives the operator complete control of the winch load in both directions at all times.

HIGH SERVICE FACTORS

Jeamar winches are designed and manufactured for continuous, heavy-duty operation with a minimum service factor of 1 (one).

GEAR REDUCERS

All Jeamar air winches have high-efficiency helical reducers plus high-capacity, anti-friction bearings for long life, low noise and high output torque. Totally enclosed reducers make them weatherproof.

AIR MOTORS

Jeamar air motors are fully reversible vane type. Positive starting and precise control are central features of the motors, which have been designed for long life and low-cost operation. They can be stalled indefinitely under load without harm to the motor.

CONTROL VALVE

Control valves feature proportional flow with spring return to neutral for "deadman" operation. Valves control the winch speed by varying air flow to the motor. With the control released, air flow is cut off, stopping the winch. Controls are supplied loose to allow for mounting that is appropriate to the application.

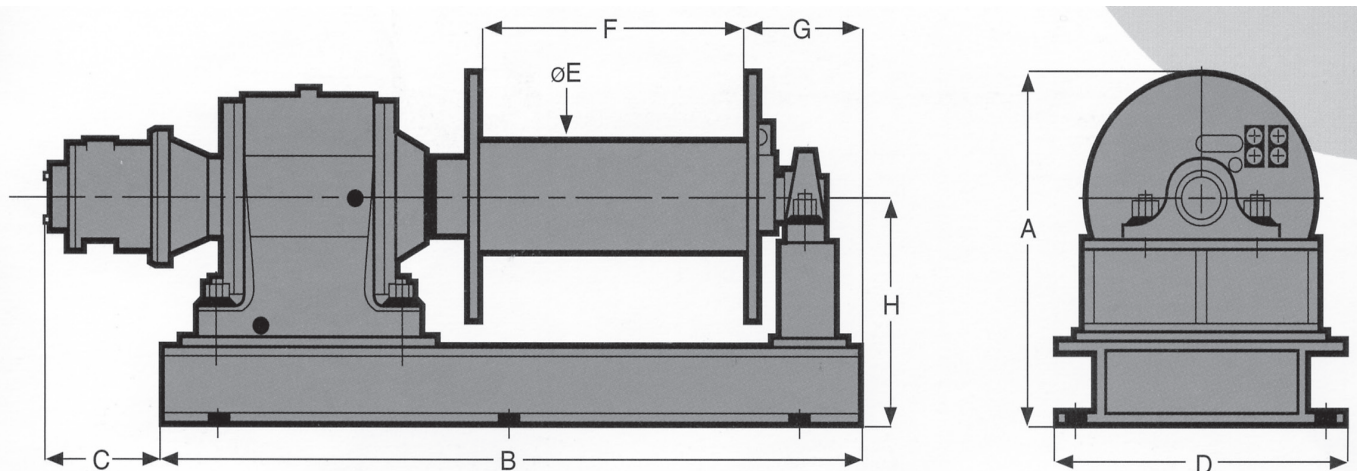
LOAD CALCULATIONS

For detail on pulling railcars or pulling up grades, send for our free railcar pulling brochure and technical notes.

NOTICE

When the Air Tugger winch is used to move loads on an incline, it is essential that a brake be used.

Important: Due to our policy of continuing development, all specifications are subject to change without notice. Users of these products are responsible for ensuring their suitability for the application in which they are being used.



Model Number			NHA 550	NHA 1100	NHA 1900	NHA 2800	NHA 4000	NHA 5800	NHA 7500
Working Load Limit (1st Layer)	lb		550	1100	1900	2800	4000	5800	7500
	kg		249	499	862	1270	1814	2630	3401
Working Load Limit (4th Layer)	lb		412	785	1355	2015	2900	4230	5280
	kg		187	356	615	914	1315	1918	2395
Line Speed (1st Layer)	fpm		25	28	27	21	22	26	23
	m/min		7.6	8.5	8.2	6.4	6.7	7.9	7.0
Line Speed (4th Layer)	fpm		33	39	38	29	30	35	32
	m/min		10.1	11.9	11.6	8.8	9.1	10.7	9.8
Rope Diameter	in		1/8	3/16	1/4	5/16	3/8	7/16	1/2
	mm		3	5	6	8	10	11	13
Rope Capacity (4th Layer)	ft		125	160	215	215	275	290	250
	m		38	49	66	66	84	88	76
Motor Power (at rated line speed)	Hp		0.42	0.96	1.58	2.40	2.70	4.60	5.40
	kw		0.3	0.7	1.2	1.8	2.0	3.4	4.0
Air Consumption	cfm		58	110	110	160	160	260	260
	l/s		26	50	50	75	75	118	118
Weight	lb		92	130	190	415	438	645	808
	kg		42	59	86	189	199	293	367
DIMENSIONS	A	in	9.00	13.00	14.00	13.89	20.00	20.36	21.34
		mm	229	330	356	353	508	517	542
	B	in	18.00	27.50	33.00	32.50	42.50	42.50	45.00
		mm	457	699	838	826	1080	1080	1143
	C	in	6.00	5.00	5.00	8.00	4.00	9.00	9.00
		mm	152	127	127	203	102	229	229
	D	in	10.00	14.00	14.00	14.00	18.00	18.00	19.50
		mm	254	356	356	356	457	457	495
	E	in	1.75	2.62	3.50	4.50	5.56	6.63	6.63
		mm	44	67	89	114	141	168	168
	F	in	6.00	9.00	12.00	12.00	15.00	15.00	15.00
		mm	152	229	305	305	381	381	381
	G	in	4.63	6.63	6.63	7.39	7.25	7.00	7.00
		mm	118	168	168	188	184	178	178
	H	in	5.31	7.94	8.89	8.89	13.36	13.36	14.34
		mm	135	202	226	226	339	339	364

Note: All performance data are based on 90psi (6 Bar) air supply

Important: Due to our policy of continuing development, all specifications are subject to change without notice. Users of these products are responsible for ensuring their suitability for the application in which they are being used.

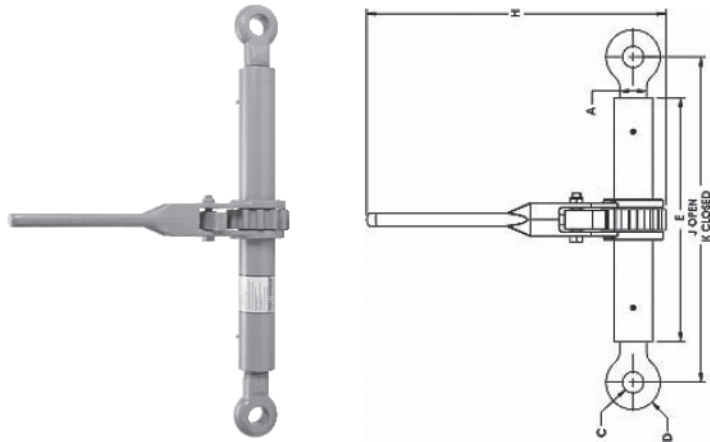
probably from Louisiana if...

You realize the rain forest is less humid than Louisiana.

STANDARD RATCHET TURNBUCKLES: Type D: Eye & Eye Turnbuckle

Specifications For Type D (Eye In Eye) Ratchet Turnbuckles									
Model Number	A in.	E in.	D in.	H in.	C in.	J in.	K in.	Adj. in.	Safe Working Load ** (Tension)
3/4 X 12 Type D	0.75	12	1.88	11.5	1	26.5	16	10.5	4,600
1 X 12 Type D	1	12	2.38	11.5	1.25	26.5	16.5	10	9,000
1 X 18 Type D	1	18	2.38	11.5	1.25	38.5	22.5	16	9,000
1 1/8 X 12 Type D	1.25	12	2.75	11.5	1.38	26.5	16.75	9.75	10,000
1 1/8 X 18 Type D	1.13	18	2.75	11.5	1.38	38.5	22.75	15.75	10,000
1 1/4 X 12 Type D	1.25	12	3	20	1.5	26.5	17	9.5	14,600
1 1/4 X 18 Type D	1.25	18	3	20	1.5	38.5	23	15.5	14,600
1 3/8 X 12 Type D	1.38	12	3.5	20	1.56	26.75	17.5	9.25	17,000
1 3/8 X 18 Type D	1.38	18	3.5	20	1.56	38.75	23.5	15.25	17,000
1 3/8 X 24 Type D	1.38	24	3.5	20	1.56	50.75	29.5	21.25	17,000
1 1/2 X 12 Type D	1.5	12	3.63	20	1.75	26.75	17.75	9	21,400
1 1/2 X 18 Type D	1.5	18	3.63	20	1.75	38.75	23.75	15	21,400
1 1/2 X 24 Type D	1.5	24	3.63	20	1.75	50.75	29.75	21	21,400
1 3/4 X 18 Type D	1.75	18	4.5	20	1.69	38	23.5	14.5	25,000
1 3/4 X 24 Type D	1.75	24	4.5	20	1.69	50	29.5	20.5	25,000
1 3/4 X 30 Type D	1.75	30	4.5	20	1.69	62	35.5	26.5	25,000
2 X 18 Type D	2	18	5	26	2	40.5	26.5	14	30,000
2 X 24 Type D	2	24	5	26	2	52.5	32.5	20	30,000
2 X 30 Type D	2	30	5	26	2	64.5	38.5	26	30,000
2 1/2 X 18 Type D	2.5	18	6	26	3	40	27	13	60,000
2 1/2 X 24 Type D	2.5	24	6	26	3	52	33	19	60,000
2 1/2 X 30 Type D	2.5	30	6	26	3	64	39	25	60,000
2 3/4 X 24 Type D	2.75	24	6.5	26	3	52.5	34	18.5	76,000
2 3/4 X 30 Type D	2.75	30	6.5	26	3	64.5	40	24.5	76,000
3 X 18 Type D	3	18	6.5	26	3.25	40	28	12	100,000
3 X 24 Type D	3	24	6.5	26	3.25	46	34	12	100,000
4 X 24 Type D	4	24	9	26	3.5	44	36	8	200,000
4 X 30 Type D	4	30	9	26	3.5	50	42	8	200,000

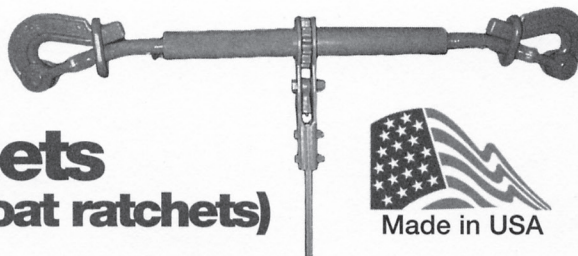
**Safe Working Load, in tension, provides a safety factor of approximately five-to-one.



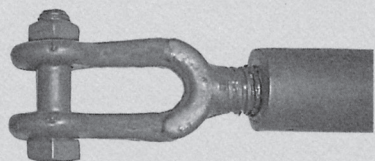
PATTERSON

SAFER.EASIER.FASTER.

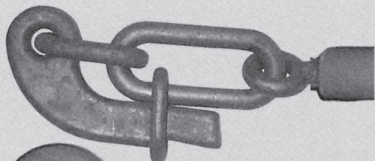
River Ratchets (Steamboat ratchets)



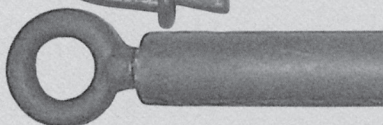
End Fitting Choices



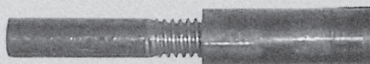
W
Clevis Jaw



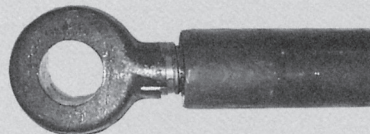
A Pelican
Hook & Link



F
Formed
Eye Bolt



S
Stub



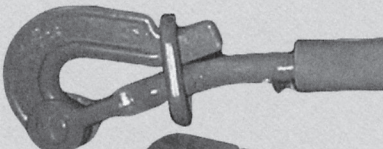
D
Drilled Eye Bolt



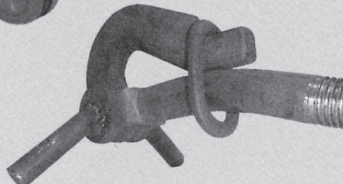
X
Box Hook



E
Welded Link



K
Pelican Hook



K w/Legs
Pelican Hook

Handle Choices: The double acting pawls are spring loaded so that the ratcheting can be done at any angle. The loose pawl design works by gravity and is thus only effective when the handle is in the nearly vertical position.

Specify your river ratchet

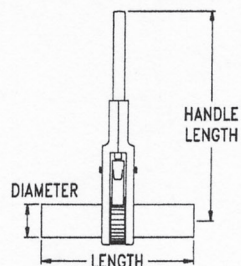
- 1 Choose the screw diameter** to suit your needs. Please apply a minimum 4 to 1 design factor when making your selection. For example, if your design load is 10,000 lbs. maximum, then a 1 " ratchet with a 40,000 lb. MBS would be the minimum strength required.
- 2 Specify the barrel length** as determined by amount of take-up required.
Barrel length = Required take-up plus 2 times the screw diameter. In general 18" to 36" in 6" increments are standard, but other lengths can be supplied upon request.
- 3 Pick the end fittings** for each end (left and right) to best suit your application. Ratchets and end fittings are designed for straight line pull tension applications only.
- 4 Select handle type** (spring loaded or loose pawl). See handle information on this page.

Dimensions All dimensions are inches.



Made in USA

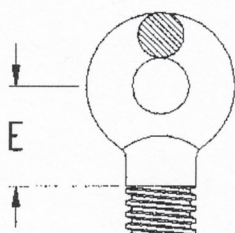
Handles / Barrels



Screw Dia. (Inches)	Barrel Pipe O.D. (Inches)	WLL*	MBS** (Lbs.)	Standard Handles Length (In.)
5/8	1 5/16	2,600	7,800	10 1/2
3/4	1 5/16	5,400	16,200	12 3/8
1	1 1/2	13,000	39,000	14
1 3/8	2 3/8	28,300	85,000	22 /19 LOOSE PAWL
1 3/4	2 7/8	42,000	126,000	22 /19 LOOSE PAWL
2	3 1/2	55,000	165,000	26

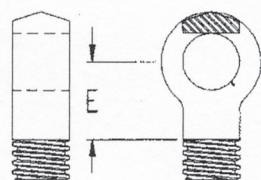
*WLL=Working Load Limit. **MBS=Minimum Breaking Strength. Welded End Fittings will reduce breaking strength. Ratings are for straight tension applications only.
Note: Ratchet located center of barrel unless specified otherwise.

Eyebolts Formed For use with chain or wire rope



Shank Diameter	Thickness	Outside Diameter	Size of Pin that will fit through Eyebolt	Center of Hole to Last Usable Thread (E)
5/8	1/2	1 3/4	1 1/16	1
3/4	9/16	2 1/32	7/8	1 1/2
1	3/4	2 1/2	1 5/16	2
1 3/8	1 1/8	3 1/2	1 1/4	2 1/2
1 3/4	1 1/4	4	1 7/16	2 5/8
2	1 5/16	4 1/4	1 9/16	2 3/4

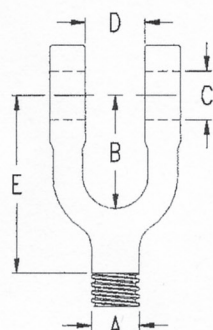
Eyebolts Drilled For use with pins or bolts



Shank Diameter	Thickness	Outside Diameter	Max. Inside Diameter of Drilled Hole	Suggested Inside Dia. of Drilled Hole	Center of Hole to Last Usable Thread (E)
1	1	2 5/16	1 3/16	3/4	1 7/8
1 3/8	1 3/8	3 1/4	1 3/4	1 5/16	2 1/2
1 3/4	1 3/4	3 3/4	2	1 11/16	2 15/16
2	2	4 3/16	2 1/4	2 1/16	2 3/4

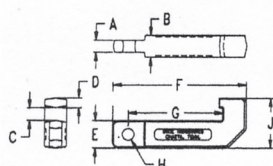
Actual hole size must be specified. If hole is 1" or less increments of 1/16" are acceptable. If the hole size is larger than 1" the standard increment is 1/8".

Clevis Jaws



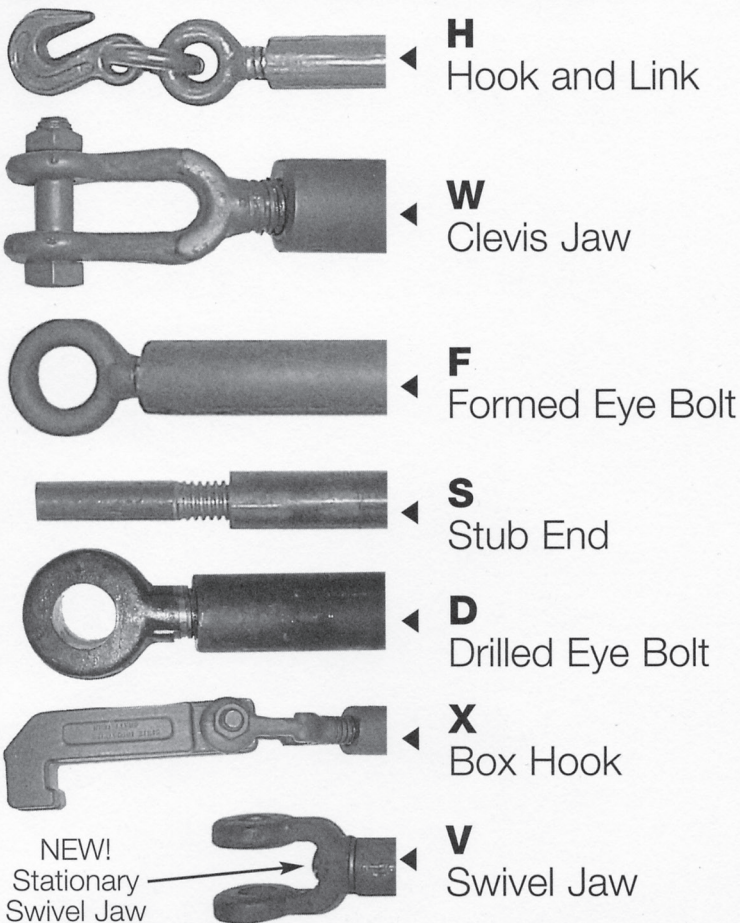
Shank Diameter	Throat To Hole Center	Suggested Bolt Size	Throat Opening	Center of Hole to Last Usable Thread
A	B	C	D	E
1	2 1/2	7/8	1 1/8	4
1 3/8	3 1/2	1	1 1/4	5 1/2
† 1 3/8	1 3/4	1	1 3/8	3 1/4
1 3/4	3 7/8	1 5/8	2 3/8	6 1/2
† 1 3/4	1 7/8	1 5/8	1 1/4	4 1/2
2	4 7/8	2	2 1/2	7 1/2
†† Use w/1" Barrel	1 5/8	7/8	1 1/8	N/A
†=Special Run Item		††=Stationary Swivel Jaw		

Box Hooks

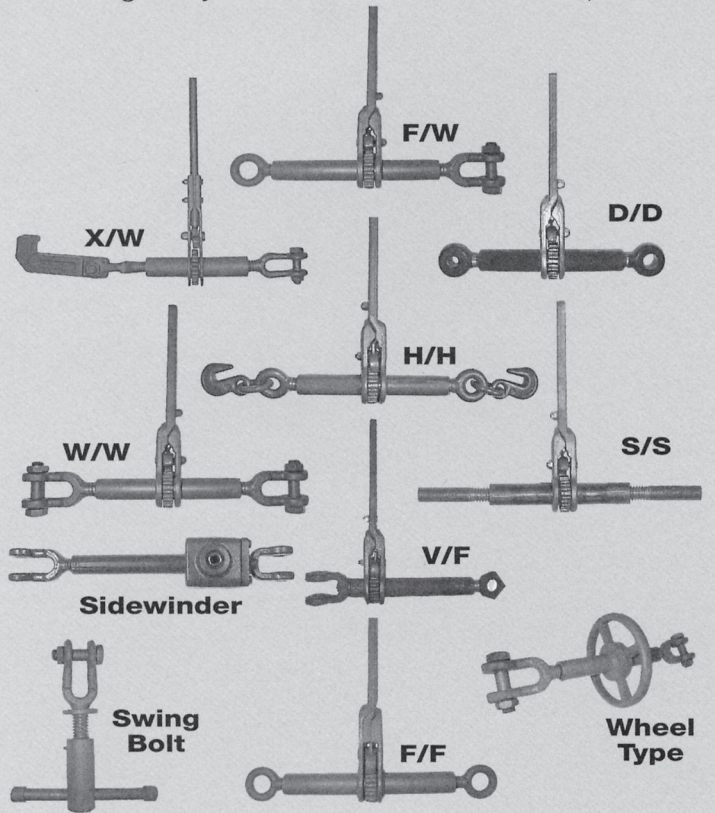


A	B	C	D	E	F	G	H
1 1/8	2.00	1 3/16	1 5/16	2.5	12 3/16	8 5/8	1 1/16

End Fitting Choices



We offer **any** combination of the End Fittings pictured above. Below are a few example configurations. (All end fittings may not be available for all sizes.)



Specify your ratchet...

1 Choose the barrel diameter and screw size to suit your needs based on breaking strengths and dimensions shown on Dimensions page. Apply in straight tension only with a minimum safety factor of 3 to 1.

2 Specify the barrel length as determined by amount of take-up required. Barrel length = Required take-up plus 2 times the screw diameter. (Round final calculated barrel length up to nearest even inch.)

Example: Required Take-up = 8 inches. Screw Diameter = 1 inch.

$8 \text{ inches} + (2 \times 1 \text{ inch}) = 10 \text{ inches.}$

The Barrel Length would be 10 inches.

3 Pick the end fittings for each end (left and right) to best suit your application. Ratchets and end fittings are designed for straight line pull tension applications only.

F273 SOCKET (I.S.O. - FLUSH)

DIMENSIONAL DATA
COMMERCIAL TOLERANCE APPLIES

SPECIFICATIONS

MATERIAL

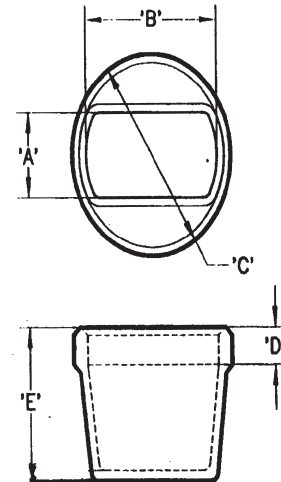
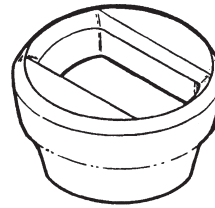
CAST STEEL

STRENGTH: STRENGTH SHOWN IN TONNES

	TENSION	SHEAR	COMPRESSION
SAFE WORKING LOAD:	25	25	75
PROOF LOAD:	37.5	37.5	112.5
MINIMUM BREAK:	50	50	150

FINISH:

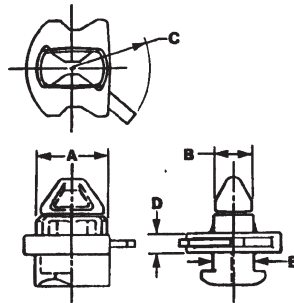
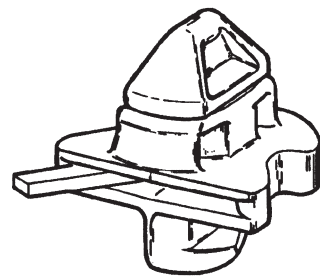
SELF COLORED



MODEL NO.	DIM.	'A'	'B'	'C'	'D'	'E'	WEIGHT KGS. (LBS.)
F273-1-OF	MM	64.7	125.4	152.4	28.6	116.0	5.3
	(INCH)	(2.54)	(4.94)	(6.00)	(1.13)	4.57	(11.7)

F476 TWISTLOCK STACKER (FIXED BASE)

DIMENSIONAL DATA
COMMERCIAL TOLERANCE APPLIES



SPECIFICATIONS

MATERIAL:

CONE - FORGED STEEL
BODY-DUCTILE IRON

STRENGTH:

TENSION	34 TONNES
SHEAR	48 TONNES
COMPRESSION	150 TONNES

TESTING: TWISTLOCK IS TESTED PER A.B.S.

FINISH:

GALVANIZED

MODEL NO.	DIM	A	B	C	D	E	WT KGS. (LBS.)
F476-R-C	MM	115.9	81.0	146.1	29.3	59.0	8.3
	(INCH)	(4.56)	(2.40)	(5.75)	(1.15)	(2.32)	(13.9)

SPECIFICATIONS

MATERIAL:

D-RING: FORGED STEEL
STRAP: PLATE STEEL

STRENGTH:

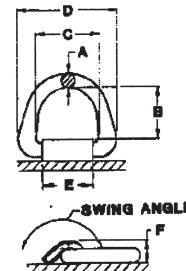
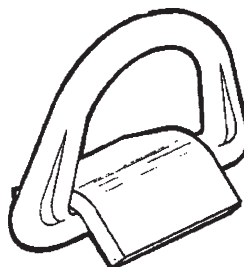
6.6 TONNES M.B.S. PULL AT 45 °

FINISH:

SELF COLORED

F187 D-RING & STRAP

DIMENSIONAL DATA
COMMERCIAL TOLERANCE APPLIES



MODEL NO.	DIM	A	B	C	D	E	F	WT KGS. (LBS.)
F187-20/2	MM	12.7	28.6	60.3	95.2	60.8	22.0	0.5
	(INCH)	(.500)	(1.13)	(2.38)	(3.75)	(2.00)	(0.88)	(1.00)

probably from Louisiana if...

You can list all the ingredients of a gumbo or a jambalaya

F643 'D' - RING & STRAP

SPECIFICATIONS

MATERIAL:

'D'-RING: FORGED STEEL
STRAP: PLATE STEEL

STRENGTH:

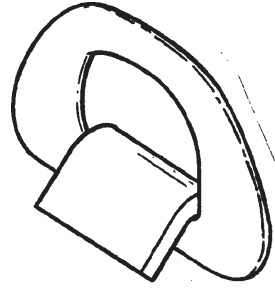
50 TONNES M.B.S. PULL AT 45°

FINISH:

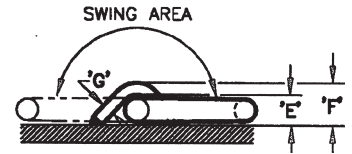
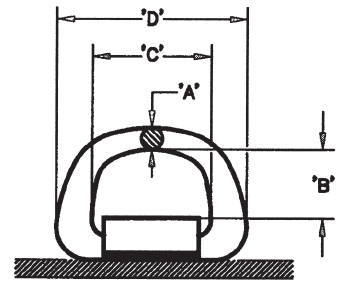
SELF COLORED

WEIGHT:

4.7 KGS. (10.3 LBS.)



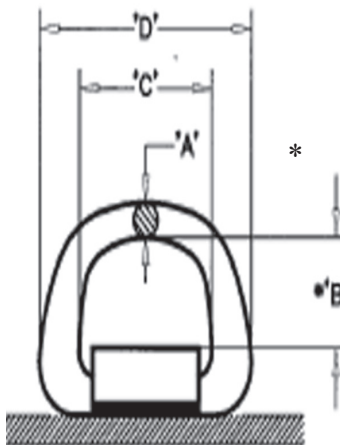
DIMENSIONAL DATA
COMMERCIAL TOLERANCE APPLIES



MODEL NO.	DIM.	'A'	'B'	'C'	'D'	'E'	'F'	'G'
'D'-RING F643-1	MM	25.4	67.2	127.0	222.3	36.0	51.9	15.8
STRAP F643-2	(INCH)	(1.00)	(2.65)	(5.00)	(8.75)	(1.42)	(2.04)	(0.63)

F654 'D' - RING & STRAP

DIMENSIONAL DATA
COMMERCIAL TOLERANCE APPLIES



SPECIFICATIONS

MATERIAL:

'D'-RING: FORGED STEEL STRAP: PLATE STEEL

STRENGTH: PULL AT 45°

SAFE WORKING LOAD 54,000 Lbs.
PROOF LOAD: 60,000 Lbs.
MINIMUM BREAK STRENGTH: 90,000 Lbs.

FINISH:

SELF COLORED

WEIGHT:

3.5 KGS. [7.6 LBS.]

MODEL NO.	DIM.	'A'	*'B'	'C'	'D'	'E'	'F'	'G'
'D'-RING F654-1	MM	23.0	79.4	127.0	203.2	31.8	44.5	12.7
STRAP F654-2	(INCH)	(0.91)	(3.13)	(5.00)	(8.00)	(1.25)	(1.75)	(0.50)

*'B' dimension is with 'D' -Ring in tension

De Deer Hunt

Boudreaux, Thibodeaux, and a bunch of deir buddies waz out on a deer-hunting trip.

Late one afternoon, Boudreaux walks into camp carrying a huge buck on his back. One of de guys axed.

"Where is Thibodeaux?"

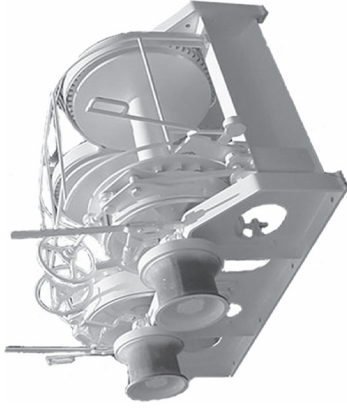
Boudreaux tells him, "He's back dare in de woods a couple of miles. I t'ink he dun had heemself a heart attack or sumt' ing."

De buddies were all shocked dey asks. "Doyo mean dat you carried dat buck back, and lef poor Thibodeaux laying out der in de woods?"

Boudreaux says. "Mais, yeh. it was a tough choice to make. but I figured nobody's gonna steal Thibodeaux!"



McELROY/CATCHOT WINCH COMPANY



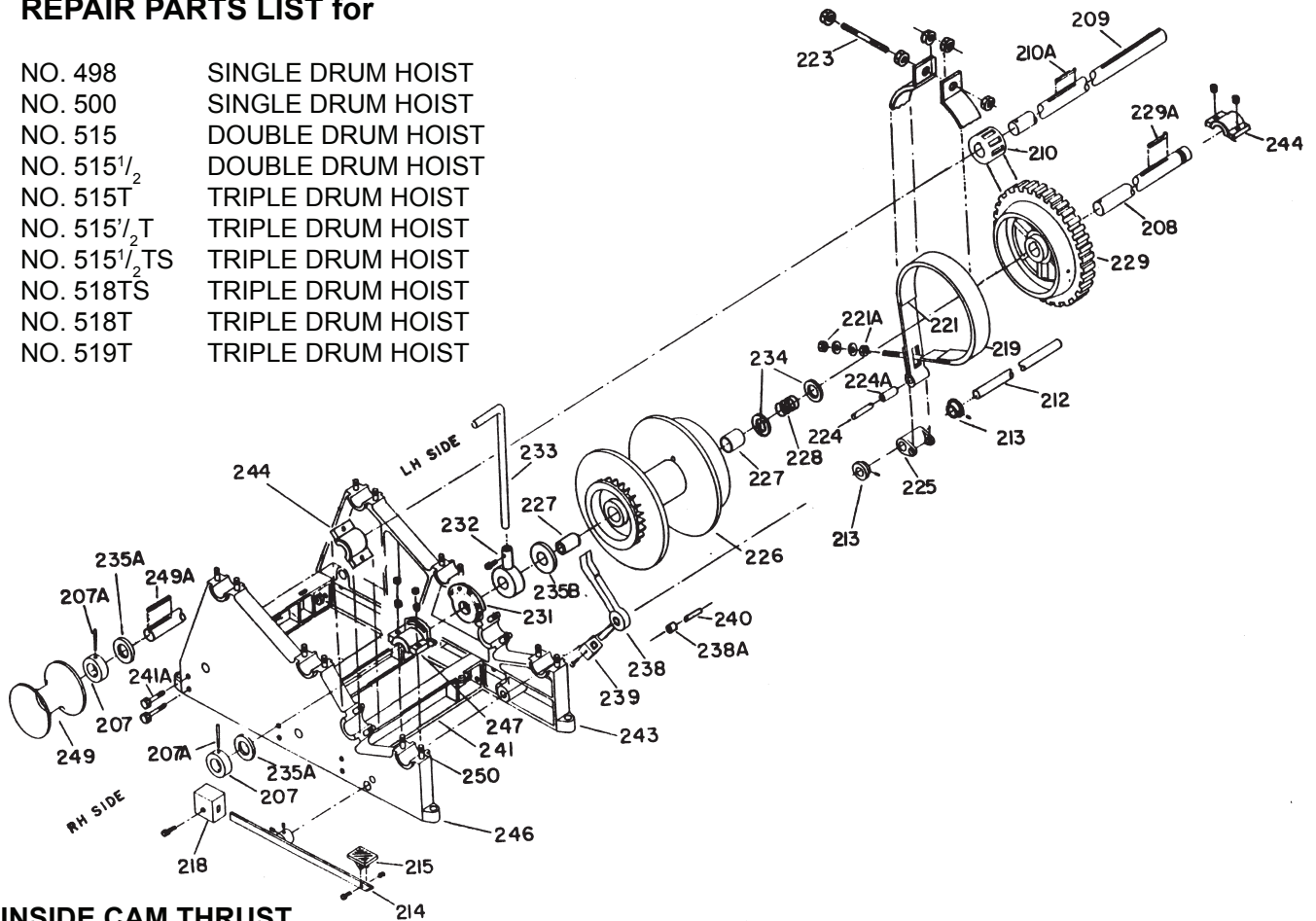
SPECIFICATIONS FOR HOISTS

DOUBLE DRUM HOIST SPECIFICATIONS												TRIPLE DRUM HOIST SPECIFICATIONS/TRYNET* DRUM CAPACITIES											
MODEL NUMBER		500-DD		501-DD		5015-DD		503-DD		5035-DD		500-TS		501-TS		5015-TS		503-TS		5035-TS			
DRUM DIAMETER		4"		4"		4"		6-5/8"		6-5/8"		4"		4"		4"					6-5/8"		
DRUM FLANGE DIAMETER		14"		17"		20"		23"		27"		14"		17"		17"		22"		22"			
DRUM SHAFT DIAMETER		2"		2-1/4"		2-1/2"		2-1/2"		3"		2"		2-1/4"		2-1/2"		2-1/2"		3"			
PINION SHAFT DIAMETER		1-3/4"		2"		2-1/4"		2-1/2"		2-1/2"		1-3/4"		2"		2-1/4"		2-1/2"		2-1/2"			
REDUCTION IN HOIST		4.15:1		4.077:1		4.5:1		4.286:1		5.0:1		4.15:1		4.077:1		4.5:1		4.286:1		5.0:1			
DRUM LENGTH		18"	20"	22"	18"	20"	22"	22"	24"	26"	22"	18"	20"	22"	18"	20"	22"	24"	26"	22"	24"	26"	
CAPACITIES																							
FT.	1335	1483	1632	2076	2306	2537	3297	3956	4286	4615	5035	5454	5873	6292	6711	7130	7549	7968	8387	8806	9225		
FA.	222	247	272	346	384	422	549	659	714	769	839	909	979	1049	1119	1189	1259	1329	1399	1469	1539		
FT.	936	1070	1177	1504	1671	1838	2635	2875	3114	3357	3663	3968	4273	4578	4883	5188	5493	5798	6103	6408	6713		
FA.	156	178	196	250	278	306	439	479	519	559	610	661	712	763	814	865	916	967	1018	1069	1120		
FT.	722	803	883	1134	1260	1386	1992	2173	2354	2541	2772	3003	3234	3465	3696	3927	4158	4389	4620	4851	5082		
FA.	120	133	147	189	210	231	332	362	392	423	452	500	548	596	644	692	740	788	836	884	932		
FT.				886	985	1083	1560	1702	1844	1991	2172	2353	2534	2715	2896	3077	3258	3439	3620	3801	3982		
FA.				147	164	180	260	283	307	331	352	392	412	432	452	472	492	512	532	552	572		
FT.				637	778	856	1236	1350	1463	1583	1727	1871	2015	2159	2303	2447	2591	2735	2879	3023	3167		
FA.				106	129	142	206	225	243	263	287	311	335	359	383	407	431	455	479	503	527		
FT.										1291	1408	1525	1867	2036	2206								
FA.										215	234	254	311	339	367								
FT.										1072	1169	1267	1554	1695	1836								
FA.										178	194	211	259	282	306								
APPROX. BED FRAME DIMENSIONS	35"	37"	39"	38"	40"	42"	43"	45"	47"	44"	46"	48"											
	36"	36"	36"	39"	39"	39"	46"	46"	46"	51"	51"												
APPROX. WEIGHT IN POUNDS										2800													

STROUDSBURG HOISTS

REPAIR PARTS LIST for

NO. 498	SINGLE DRUM HOIST
NO. 500	SINGLE DRUM HOIST
NO. 515	DOUBLE DRUM HOIST
NO. 515 ¹ / ₂	DOUBLE DRUM HOIST
NO. 515T	TRIPLE DRUM HOIST
NO. 515 ¹ / ₂ T	TRIPLE DRUM HOIST
NO. 515 ¹ / ₂ TS	TRIPLE DRUM HOIST
NO. 518TS	TRIPLE DRUM HOIST
NO. 518T	TRIPLE DRUM HOIST
NO. 519T	TRIPLE DRUM HOIST

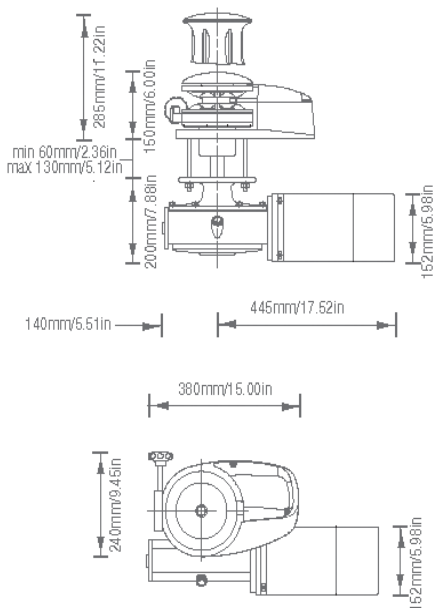


INSIDE CAM THRUST

207	- DRUM SHAFT COLLAR.	231*	- STATIONARY FRICTION CAM.
207A	- DRUM SHAFT COLLAR TAPER PIN.	232*	- MOVABLE FRICTION CAM.
208*	- DRUM SHAFT.	233	- MOVABLE FRICTION CAM LEVER.
209	- PINION SHAFT.	234	- STEEL DRUM SPRING WASHER.
210	- MAIN DRIVE PINION.	235A	- OUTSIDE BRONZE THRUST WASHER.
210A	- MAIN DRIVE PINION KEY.	235B	- INSIDE BRONZE THRUST WASHER.
212*	- BRAKE SHAFT.	238*	- DRUM PAWL WITH BUSHING.
213	- BRAKE SHAFT COLLAR.	238A	- DRUM PAWL BUSHING.
214	- BRAKE LEVER ASSEMBLY LESS WEIGHT, #218.	239*	- DRUM PAWL WEIGHT.
215	- BRAKE LEVER FOOT PAD.	240	- DRUM PAWL PIN.
218	- BRAKE LEVER WEIGHT.	241*	- CROSS BEAM.
219*	- BRAKE BAND COMPLETE WITH LINING.	241A	- CROSS BEAM MOUNTING BOLTS AND NUTS.
221*	- BRAKE LINING.	243	- LEFT HAND SIDE FRAME.
221A	- NUTS AND WASHERS FOR BRAKE END BOLT.	244	- L.H. DRUM SHAFT CAP; R.H. OR L.H. PINION SHAFT CAP.
223	- BRAKE BAND BOLT AND NUTS.	246	- RIGHT HAND SIDE FRAME.
224	- BRAKE BAND TOGGLE PIN.	247*	- DRUM SHAFT CAP FOR R.H. SIDE FRAME.
224A	- BRAKE BAND TOGGLE PIN BUSHING.	249	- WINCH HEAD.
225	- BRAKE BAND TOGGLE.	249A	- WINCH HEAD KEY.
226*	- FRICTION DRUM.	250	- BEARING CAP STUDS WITH NUTS.
227	- FRICTION DRUM BUSHING.	251	- GEAR GUARD ASSEMBLY (NOW SHOWN); SPECIFY MODEL HOIST FOR WHICH GUARD IS REQUIRED.
228	- FRICTION DRUM SPRING.		
229	- FRICTION GEAR.		
229A	- FRICTION GEAR KEY.		
230	- FRICTION GEAR RING (NOT SHOWN) MODEL #498, 515 AND 51ST HOISTS ONLY.		

*SPECIFY FOR WHICH DRUM PART IS REQUIRED; LOWER, MIDDLE OR UPPER.

Vertical electric winlasses in low profile or capstan versions



VERTICAL

LOFRANS WINDLASSES

Project 2000

Vertical all chain windlass for boats from 59'-82'.
The Project 2000 is ideal for larger, bluewater yachts both new and classic. Capstan version handles $\frac{9}{16}$ " - $\frac{3}{4}$ " rope.

Standard Equipment

Two footswitches
Watertight control box
Clutch/manual operation handle
Brake band

FEATURES

Finish	Chrome
Motor	Dual Direction, Series Wound
Gearbox	Stainless Worm Drive Radially Adjustable
Gears	Bronze
Mainshaft	Stainless
Chainpipe	Fixed
Chain Stripper	Stainless
Mounting Hardware	SS Studs, Washers and Nuts
Manual Override	Standard
Rope Capstan	Optional
Extra Deck Clearance	Optional (to 6")

SPECIFICATIONS

Power Supply	24V	24V
Motor Wattage	2000W	2500W
Power Rating (lbs.)	2800	3100
Approx. Amp Draw	90-110	100-120
Max Retrieval Speed (ft./min.)	78	78
Chain Size	$\frac{9}{16}$ " , $\frac{3}{8}$ " , $\frac{1}{2}$ " , $\frac{1}{2}$ "	
Rope Size	$\frac{9}{16}$ " - $\frac{3}{4}$ " (Capstan only)	
Net Weight (lbs.)	159	159

Doya know who dat is?

Boudreaux and Marie were mad at each udder. Dey drove several miles down de road wit'out saying a word after de argument dey had earlier.

Neider one of dem waz gonna give in to de udder an' admit dat dey might be wrong.

As dey passed a barnyard wit a bunch of mules and pigs standin' aroun'. Marie sarcastically axed Boudreaux. "Ees dat relatives of yours?"

Boudreaux answered. "Yep, dats ma in-laws".