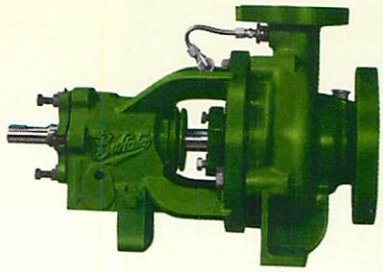
CANADIAN BUFFALO

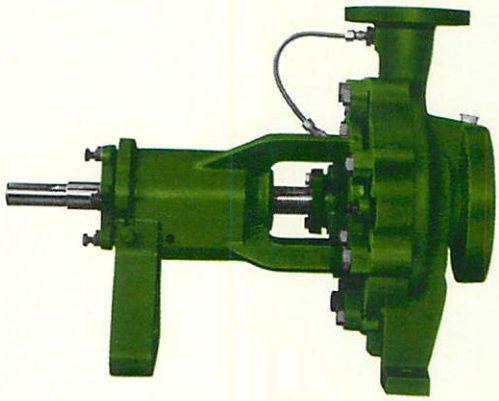
BULLETIN CP903D

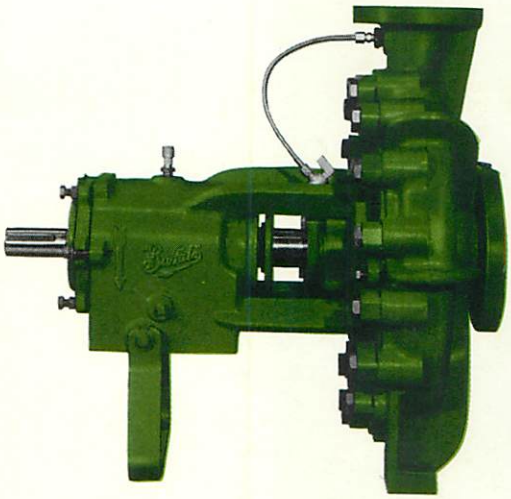
Canadian Blower / Canada Pumps Limited

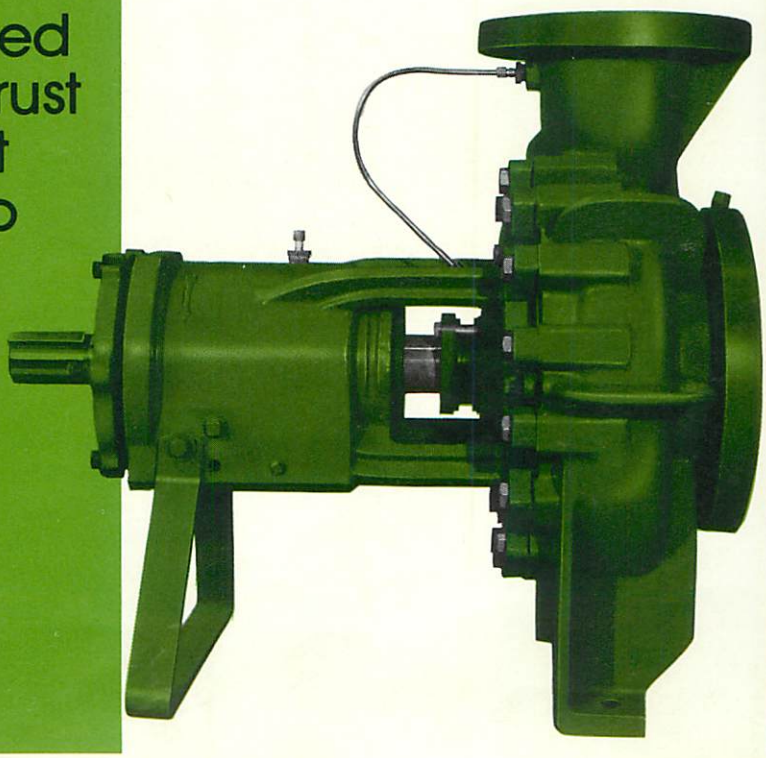
CRE/CRO

frame mounted balanced thrust back pull-out pumps·built to ANSI standards









The CRE/CRO Pump is another product of "Buffalo" ingenuity . . . the ultimate in advanced engineering achievement . . . the only standard dimension pump that features a unique volute design in combination with a special balance chamber and impeller treatment to stabilize axial and radial forces for optimum balance of internal thrust loads . . . exclusive "Balanced Thrust" . . . the key to

Longer Bearing Life

Decreased Shaft Deflection

Reduced Stuffing Box Wear

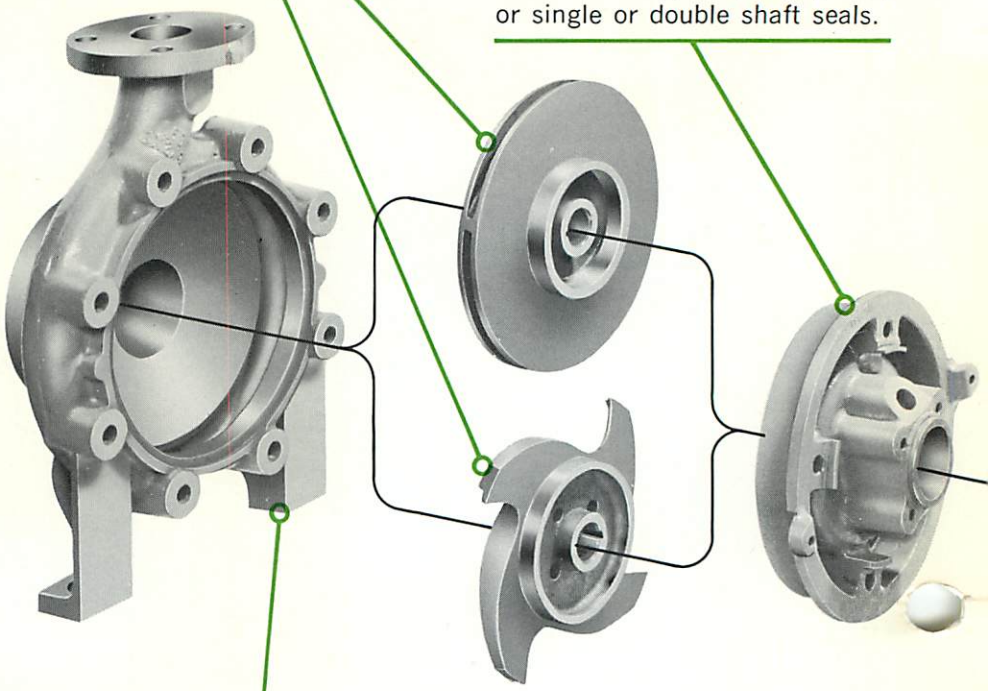
Improved Mechanical Efficiency

Quieter Operation

Minimum Maintenance Cost

IMPELLER - open or enclosed type · special balance holes · low NPSH design · keyed to shaft · statically and hydraulically balanced.

CASING COVER/STUFFING BOX - casing enclosure with fully confined gasket at casing fit · rabbeted alignment fits at casing and frame · with or without water cooled jacket · adaptable to packing or mechanical seals · sealing or flushing connections provided · deep box to accommodate minimum of 5 rings of packing and/or single or double shaft seals.



CASING - horizontal end suction · single stage · modified off-set volute (half constant area / half constant velocity) self-venting, centerline up discharge,back pull-out design · reinforced ribbed construction · integrally cast mounting feet · rigid centerline support · 150 psi ASA standard flanged connections · (300 psi high pressure construction also available) · drain outlet · gauge connections.

IMPELLER LOCKING SCREW - stainless steel · self locking type · secures impeller to shaft.

COUPLING - standard flexible or spacer types available · customer preference.

COUPLING GUARD - all metal guard provided as optional feature.

BASEPLATE - steel designed for rigidity · ample grout holes (cast iron bases available as an option).

SEAL CAGE - split type • glass filled teflon for heat and corrosion resistance.

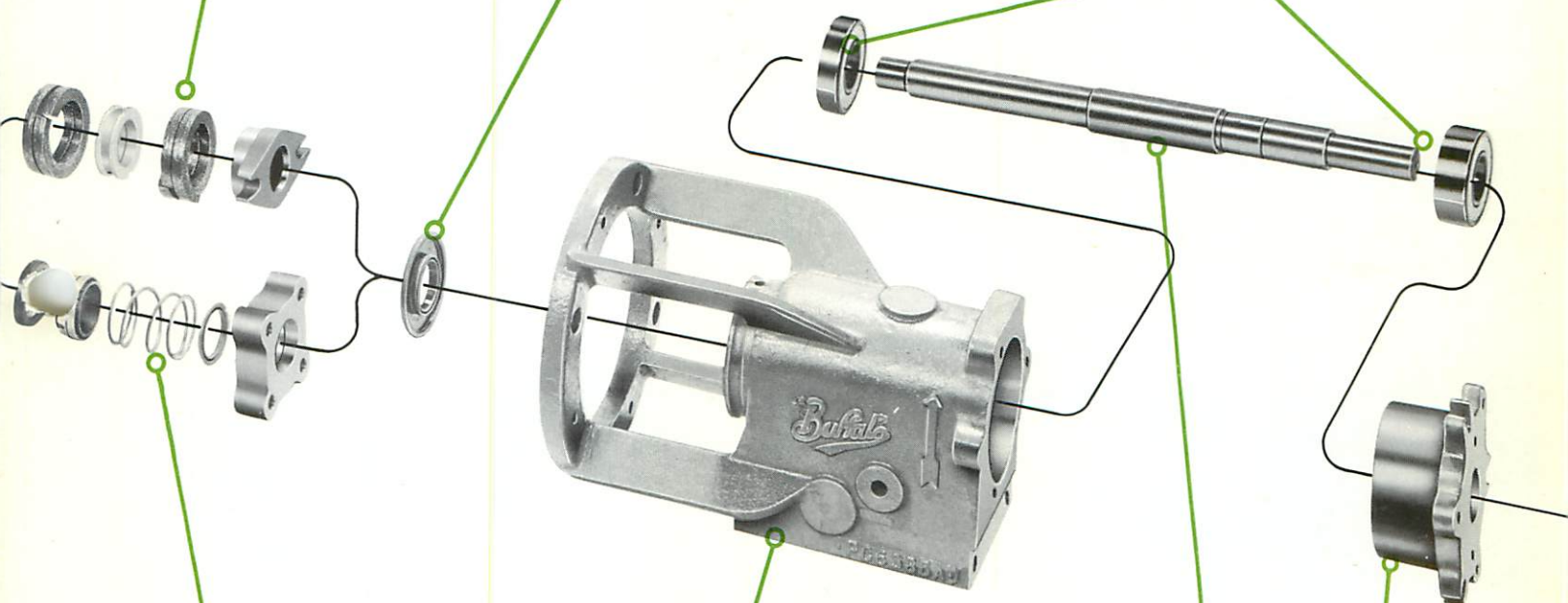
GLAND - solid smothering type with stainless steel adjustable cap screws standard • split quench type also available.

PACKING - as required.

DEFLECTOR - glass reinforced epoxy • labyrinth type flinger with contact lip seal • on inboard and outboard side of frame with oil lubrication • inboard side only with grease lubrication.

BEARINGS - double row, angular contact, outboard thrust bearing • secured to shaft by tapered snap rings • single row, deep groove, inboard guide bearing • protected in dust proof housing • sized for 10 year minimum average life.

BEARING LUBRICATION (grease) both thrust and guide bearings are double shield and prelubricated with grease • inboard shield retains grease within bearing • outboard shield is metering device to prevent over-greasing • (oil) both thrust and guide bearing are the open type.



FRAME - heavy-duty cast iron bearing housing • open ribbed design • easy access to stuffing box • integrally cast adapter flange • rabbeted alignment fit to casing cover • adaptable to grease or oil lubrication • ample oil reservoir • water cooling feature available with oil lubrication as required • independent adjustable support foot • vents and openings provided as required • four frame sizes satisfy full range of established standard performance requirements.

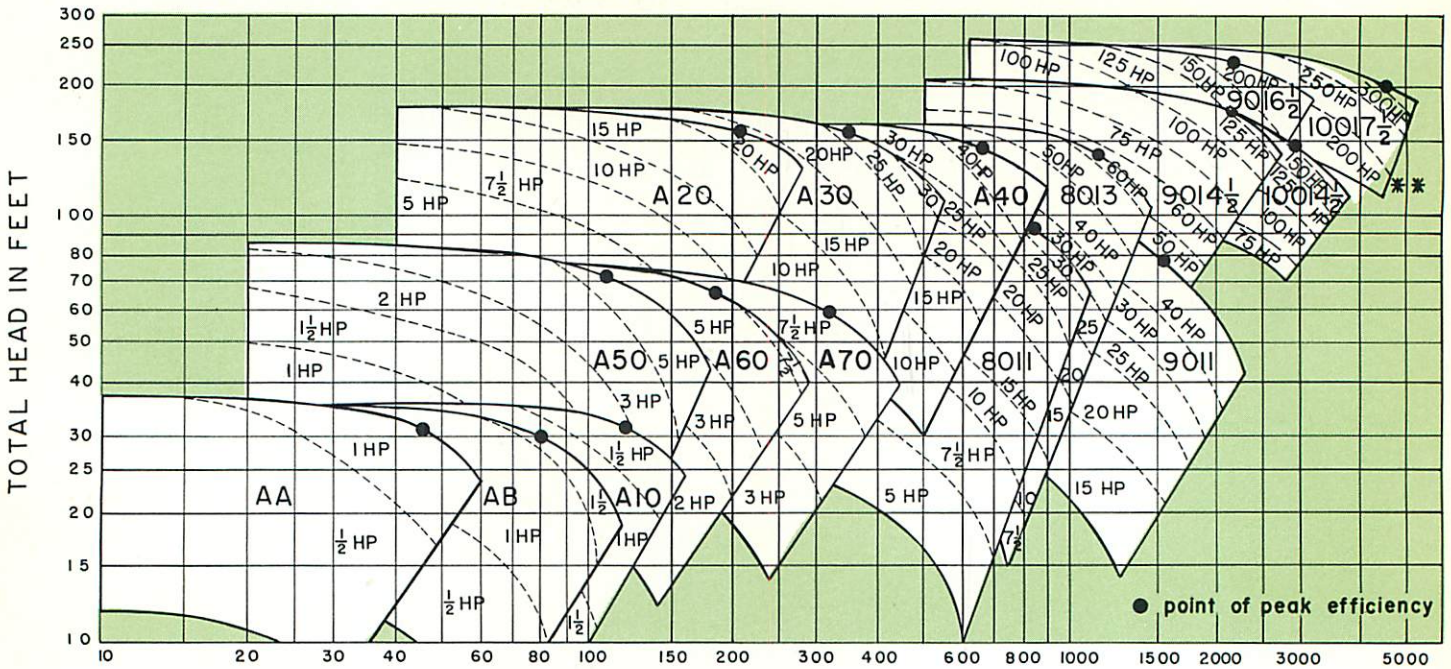
BEARING COVER cast iron • thrust bearing housing.

MECHANICAL SEALS - single or double • inside or outside • with or without balanced feature • type and material coding as required.

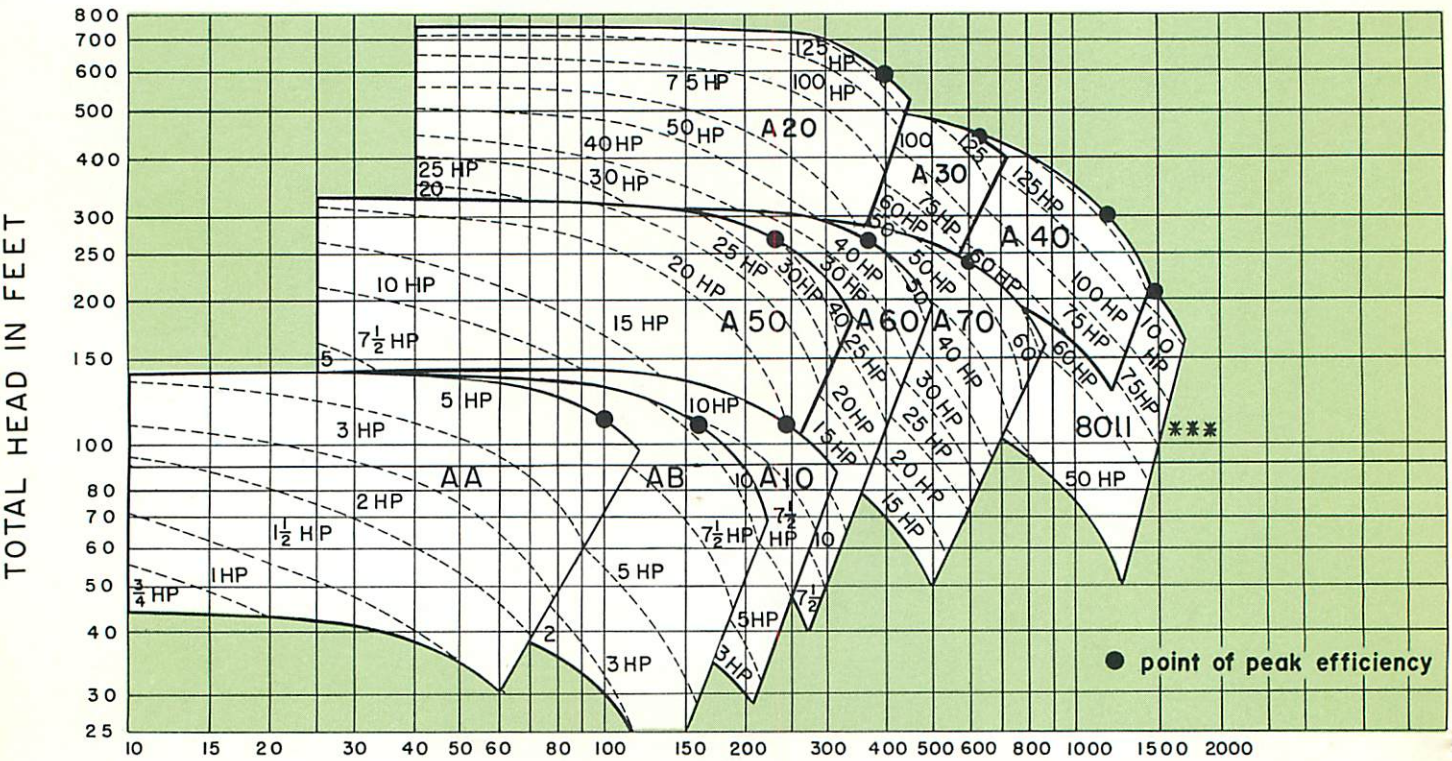
SHAFT - 303 stainless steel • sized for .002" maximum deflection at the face of the stuffing box • accurately machined for precision fits of component parts • other materials available • shaft sleeves available as an optional extra.

COMPOSITE PERFORMANCE CURVES

1750 R.P.M. PERFORMANCE *

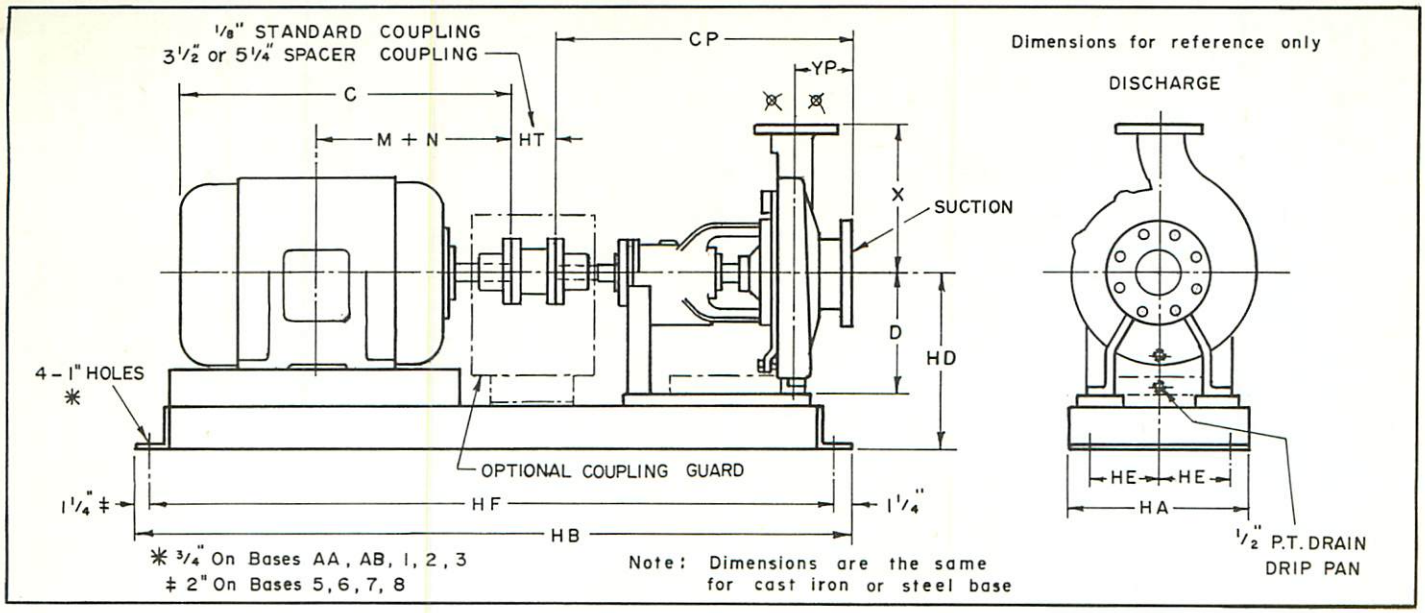


3500 R.P.M. PERFORMANCE *



NOTES: * Performance zones based on open impellers. (Enclosed impellers also available)
** 10017½ available at 1750 r.p.m in enclosed impeller only.
*** 8011 available at 3500 r.p.m. in enclosed impeller only.

CRE/CRO OUTLINE DIMENSIONS



Dimensions to ANSI B73.1 (Formerly AVS)

PUMP DATA

Pump Size	Suction x Discharge x Imp. Diam.	Bearing Frame	CP	YP	D	X	Pump Wgt.
AA	1 1/2 x 1 x 6	M1	17 1/2	4	5 1/4	6 1/2	70
AB	3 x 1 1/2 x 6	M1	17 1/2	4	5 1/4	6 1/2	75
A10	3 x 2 x 6	M1	17 1/2	4	5 1/4	8 1/4	85
A10	3 x 2 x 6	M2	23 1/2	4	8 1/4	8 1/4	110
A20	3 x 1 1/2 x 13	M2 / M3	23 1/2	4	10	10 1/2	180-200
A30	3 x 2 x 13	M2 / M3	23 1/2	4	10	11 1/2	190-220
A40	4 x 3 x 13	M2 / M3	23 1/2	4	10	12 1/2	200-225
A50	3 x 1 1/2 x 9	M2 / M3	23 1/2	4	8 1/4	8 1/2	115-135
A60	3 x 2 x 9	M2 / M3	23 1/2	4	8 1/4	9 1/2	125-145
A70	4 x 3 x 9	M2 / M3	23 1/2	4	8 1/4	11	140-160
8011	6 x 4 x 11	M2 / M3	23 1/2	4	10	13 1/2	170-190
9011	8 x 6 x 11	M2 / M3	23 1/2	6	10	13 1/2	180-200
8013	6 x 4 x 13	M2 / M3	23 1/2	4	10	13 1/2	200-230
9014 1/2	8 x 6 x 14 1/2	M 4	34	6	14 1/2	16	675
10014 1/2	10 x 8 x 14 1/2	M 4	34	6	14 1/2	18	800
9016 1/2	8 x 6 x 16 1/2	M 4	34	6	14 1/2	18	875
10017 1/2	10 x 8 x 17 1/2	M 4	34	6	16 1/2	23	1000

BED PLATE DATA

Pump Size	Base No.	Base Wgt. (steel)	Motor Frames	HA	HB	HE	HF	HD D = 5 1/4	HD D = 8 1/4	HD D = 10	HD D = 14 1/2	HD D = 16 1/2
AA AB A10	AA AB	40 55	56-184T 213T-215T	10 12	35 39	4 4 1/2	32 1/2 36 1/2	8 1/4 8 1/2	—	—	—	—
A10 thru 8013	1	85	143T-215T	12	45	4 1/2	42 1/2	—	12	13 3/4	—	—
	2	100	254T-286T	15	52	6	49 1/2	—	12 3/8	14 1/8	—	—
	3	190	324T•TS-326T•TS 364T•TS-365T•TS	18	58	7 1/2	55 1/2	—	13 14	14 3/4	—	—
	4	245	404TS - 405TS 444TS	18	60	7 1/2	57 1/2	—	15 16	15 16	—	—
9014 1/2 thru 100-17 1/2	5	155	184T-286T•TS	19	64	7 1/2	61 1/2	—	—	—	19 1/4	21 1/4
	6	210	324T•TS-365T•TS	20	68	8 1/2	65 1/2	—	—	—	19 1/4	21 1/4
	7	260	404T-444T•TS	24	75	10 1/2	72 1/2	—	—	—	19 1/4	21 1/4
	8	390	445T•TS-447TS	27	85	12	82 1/2	—	—	—	19 1/4	21 1/4

FLANGE DATA

Pressure Series	150 Pound							300 Pound							
Nominal Pipe Size	1	1 1/2	2	3	4	6	8	1	1 1/2	2	3	4	6	8	10
Outside Diameter	4 1/4	5	6	7 1/2	9	11	13 1/2	4 7/8	6 1/8	6 1/2	8 1/4	10	12 1/2	15	17 1/2
Bolt Circle	3 1/8	3 7/8	4 3/4	6	7 1/2	9 1/2	11 3/4	3 1/2	4 1/2	5	6 5/8	7 7/8	10 5/8	13	15 1/4
Bolts (Straddling)	4 - 1/2	4 - 1/2	4 - 5/8	4 - 5/8	8 - 5/8	8 - 3/4	8 - 3/4	4 - 5/8	4 - 3/4	8 - 5/8	8 - 3/4	8 - 3/4	12 - 3/4	12 - 7/8	16 - 1
Raised Face Dia.	(OPTIONAL EXTRA FOR 300 P.S.I.)							2 11/16	3 9/16	4 3/16	5 11/16	6 15/16	9 11/16	11 15/16	14 1/16

MOTOR DATA

Motor Frame	C	M+N
56	12 1/2	6 1/8
66	15 3/8	7 7/8
143T	13 1/8	6 1/2
145T	13 5/8	7
182T	14 3/8	7 3/4
184T	15 3/8	8 1/4
213T	18	9 5/8
215T	19 1/2	10 3/8
254T	22 7/8	12 3/8
256T	24 5/8	13 1/4
284T	26 5/8	14 1/8
284TS	25 1/4	12 3/4
286T	28 1/8	14 7/8
286TS	28 3/4	13 1/2
324T	29 5/8	15 3/4
324TS	28 1/8	14 1/4
326T	31 1/8	16 1/2
326TS	29 5/8	15
364T	32 7/8	17 3/8
364TS	30 3/4	15 1/4
365T	33 3/4	17 7/8
365TS	31 3/4	15 3/4
404T	37 3/16	20
405T	38 11/16	20 3/4
405TS	35 11/16	17 3/4
444T	42 5/8	23 1/8
444TS	38 7/8	19 1/2
445T	44 5/8	24 1/4
445TS	40 7/8	20 1/2
447T	48 1/8	26
447TS	44 3/8	22 1/4

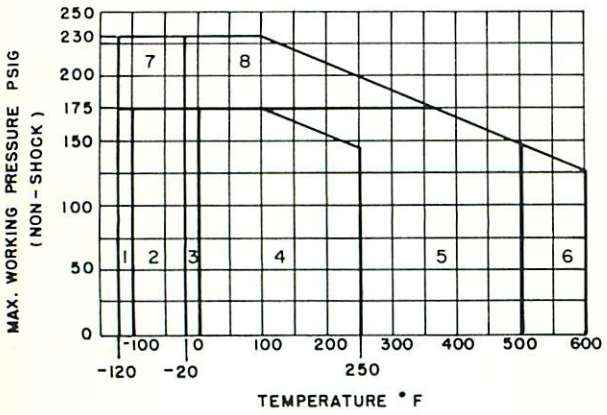
CRE/CRO TECHNICAL DATA

PUMP HEAD DATA

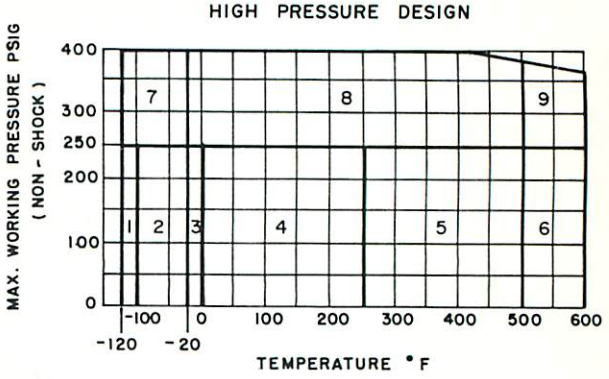
DESIGNATION	AA	AB	A10	A20	A30	A40	A50	A60	A70	8011	9011	8013	9014 1/2	10014 1/2	9016 1/2	10017 1/2
SIZE : SUCT. X DISCH.	1 1/2 x 1	3x1 1/2	3 x 2	3x1 1/2	3x2	4x3	3x1 1/2	3 x 2	4x3	6x4	8x6	6x4	8x6	10 x 8	8 x 6	10 x 8
MAX. IMPELLER DIA.	6	6	6	13	13	13	9	9	9	11	11	13	14	14	16	17
MIN. IMPELLER DIA.	3 1/2	3 5/8	4	6	6	7 1/2	5	5	6	7	8	8	9	11	11	11
MAX. SPHERE OPEN IMPELLER WILL PASS	5/16	1/2	5/8	1/2	9/16	3/4	7/16	1/2	3/4	1 1/4	1 11/16	1 1/4	1 13/16	1 3/8	1 1/4	1 15/16
MAX. SPHERE ENCL. IMPELLER WILL PASS	3/16	3/8	1/2	5/16	3/8	9/16	1/4	5/16	9/16	1 1/8	1 1/2	1	1 9/16	1 3/8	1 1/4	1 15/16
IMPELLER EYE DIA.	1 15/16	3	3 1/2	3	4	5 1/8	3	3 1/4	4 1/4	6	7 5/8	6	7 3/4	8 3/4	8 1/8	10 5/8
MIN. CASING THICKNESS	5/16	5/16	5/16	3/8	3/8	3/8	5/16	5/16	5/16	3/8	1/2	3/8	1/2	1/2	1/2	5/8
CORROSION ALLOWANCE	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8
MAX. LIQUID TEMP. WITHOUT COOLING - °F	250	250	250	M2 230 M3 200	M2 230 M3 200	M2 230 M3 200	M2 230 M3 200	M2 230 M3 200	M2 230 M3 200	M2 230 M3 200	M2 230 M3 200	M2 230 M3 200	M 4 250	M 4 250	M 4 250	M 4 250
MAX. LIQUID TEMP. WITH COOLING - °F	600	600	600	M2 540 M3 400	M2 540 M3 400	M2 540 M3 400	M2 540 M3 400	M2 540 M3 400	M2 540 M3 400	M2 540 M3 400	M2 540 M3 400	M2 540 M3 400	OVER 250° REFER FACTORY			

TEMPERATURE VERSUS PRESSURE DATA

STANDARD PRESSURE DESIGN



HIGH PRESSURE DESIGN



AREAS	MATERIALS
1	Cast Steel, Stainless Steel, Alloy 20, Monel, Nickel
2	Bronze, Cast Steel, Stainless Steel, Alloy 20, Monel, Nickel
3	Ductile Iron, Bronze, Cast Steel, Stainless Steel, Alloy 20, Monel, Nickel
4	Cast Iron, Ductile Iron, Bronze, Cast Steel, Stainless Steel, Alloy 20, Monel, Nickel
5	Ductile Iron, Cast Steel, Stainless Steel, Alloy 20, Monel, Nickel
6	Cast Steel, Stainless Steel, Alloy 20, Monel, Nickel
7	Cast Steel, Stainless Steel, Alloy 20, Monel
8	Ductile Iron, Cast Steel, Stainless Steel, Alloy 20, Monel
9	Stainless Steel, Alloy 20, Monel

FRAME DATA

FRAME DESIGNATION	M1	M2	M3	M4
Shaft Dia. at Impeller	.875	1.125	1.375	2.375
Shaft Dia. thru Stuffing Box	1.125	1.375	1.875	2.750
Shaft Dia. between Bearings	1 1/4	1 1/2	2 1/8	3 3/8
Shaft Dia. at Coupling	.875	1.125	1.375	2.375
Thrust Bearing Grease Lube	HOOVER 5206FF	HOOVER 5307FF	N/A	N/A
Radial Bearing Grease Lube	SKF 6206	SKF 6307	N/A	N/A
Thrust Bearing Oil Lube	SKF 5206	SKF 5307	SKF 5310	SKF 7315
Radial Bearing Oil Lube	SKF 6206	SKF 6307	SKF 6310	SKF 6315
Stuffing Box Bore	1.750	2.125	2.625	3.750
Stuffing Box Depth	2 3/16	2 5/8	2 5/8	3 1/4
Packing Size	5/16 SQ.	3/8 SQ.	3/8 SQ.	1/2 SQ.
No. Packing Rings w/ Seal Cage	5	5	5	5
Distance, Stuffing Box to First Obstruction	2	2 3/8	2 1/2	3 3/8
Motor H.P. Limit At 1750 R.P.M.	15	40	60	250
Motor H.P. Limit At 3500 R.P.M.	30	75	125	N/A

INTERCHANGEABILITY

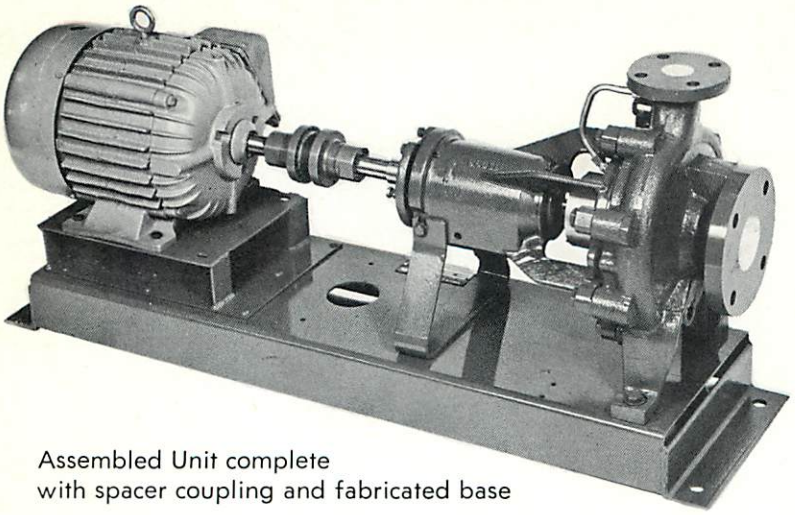
FRAME	COVER PLATE	CASING
M-1	6" M-1	AA AB A10
M-2	6" M-2	A10
M-2	9" M-2	A50, A60, A70
M-3	9" M-3	
M-2	11" M-2	8011, 9011
M-3	11" M-3	
M-2	13" M-2	A20, A30, A40 8013
M-3	13" M-3	
M-4	14 1/2" M-4	9014 1/2, 10014 1/2
M-4	16 1/2" M-4	9016 1/2
M-4	17 1/2" M-4	10017 1/2

MAXIMUM INTERCHANGEABILITY BETWEEN PUMP ENDS AND COMPONENT PARTS ••• 16 PUMP SIZES – 11 CASING COVERS – 4 BEARING FRAMES

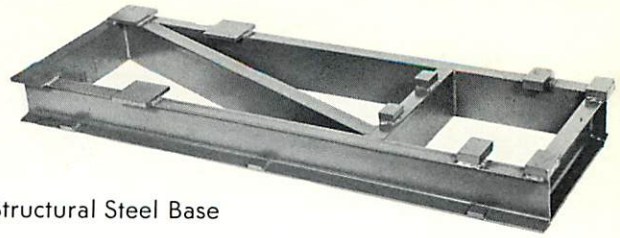
MATERIALS OF CONSTRUCTION

PART NUMBER	PART NAME	ALL IRON	BRONZE FITTED	316 SS FITTED	ALL 316 SS	DUCTILE IRON	ALL BRONZE	ALLOY 20
2	Casing	Cast Iron			316 SS	Ductile Iron	Bronze	A-20
3	Impeller	Cast Iron	Bronze	316 SS		Ductile Iron	Bronze	A-20
6	Casing Cover	Cast Iron			316 SS	Ductile Iron	Bronze	A-20
7	Shaft	303 SS		316 SS		303 SS		A-20
9	Casing Ring *	Steel		316 SS		Steel	Bronze	A-20
10	Casing Cover Ring *	Steel		316 SS		Steel	Bronze	A-20
12	Gland	Cast Iron		316 SS		Cast Iron	Bronze	A-20
14A	Split Seal Cage	Glass Filled Teflon						
15A	Impeller Lock Screw	316 Stainless Steel						A-20
16	Impeller Nut Washer	316 Stainless Steel						A-20
17B	Impeller Key	316 Stainless Steel						A-20
18A	Deflector	Epoxy (Glass Fiber Reinforced)						
65	Casing Gasket	Asbestos (Standard)						
66	Packing	Graphited Asbestos (Standard)						
102A	Gland Screw	18-8 Stainless Steel						
105	Tubing	Steel	Copper	Steel	316 SS	Steel	Copper	A-20

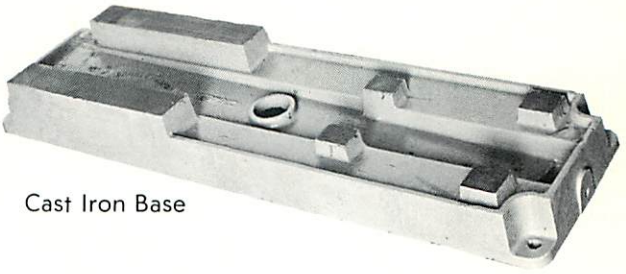
* Optional Extra



Assembled Unit complete
with spacer coupling and fabricated base



Structural Steel Base



Cast Iron Base

We reserve the right to make changes and improvements in the design of "Buffalo" equipment without notice

nationwide service

SAINT JOHN
MONTREAL
OTTAWA
TORONTO
HAMILTON
KITCHENER
SARNIA
WINNIPEG
SASKATOON
CALGARY
EDMONTON
VANCOUVER

CANADIAN BUFFALO

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June 77