



CENTRAC B PUMPS

GENERAL SPECIFICATIONS

Drive

Helical Gear and Scotch Yoke (all moving parts submerged in oil)

Liquid End

High Performance Diaphragm (hydraulically balanced)

Multiplexing

Simplex or Duplex

Maximum Performance Ratings (per head)

550 GPH @ 185 PSIG to 37 GPH @ 2290 PSIG

Capacity Control

(DC) Electronic Variable Speed Drive with 100:1 Turndown

(AC) Electronic Variable Frequency 100:1 Turndown

Maximum Stroking Speed

162 SPM

Accuracy

0.5% Steady State Accuracy Over 100:1 Turndown

Weight (approximate with largest liquid end)

Simplex455 lbs.

Duplex640 lbs.

CENTRAC B DUPLEX



CENTRAC B SIMPLEX W/LOCAL OPERATOR STATION



MOTOR & CONTROLLER SPECIFICATIONS

Standard Voltages

Drive(DC)	460 VAC, 3 Phase, 50/60 Hz
	230 VAC, 3 Phase, 50/60 Hz (up to 3 HP)
	230 VAC, 1 Phase, 50/60 Hz (up to & including 4 HP)

Maximum Distances

Controller to Motor	250 ft.
Remote Operator Station to Slave Controller	5000 ft.

Duty Cycle

Continuous

Input Control Signal

4-20 mA, Direct or Reverse Acting Standard, Split Range Configurable

Feedback Signal

4-20 mA

Motor Description

Servo DC TENV Watertight-Standard
Explosion Proof Optional
Standard AC - Optional

User Manuals



CENTRAC B PERFORMANCE

Plunger Dia.		Maximum Capacity GPH	Motor Horsepower		
			1	2	3
		Maximum Discharge Pressure PSIG			
1"	Simplex	45	780	1575	2350
	Duplex	90	590	1180	1770
1¼"	Simplex	70	500	1000	1500
	Duplex	140	380	760	1140
1½"	Simplex	100	350	700	1050
	Duplex	200	260	525	785
2"	Simplex	180	200	400	600
	Duplex	360	145	295	440
2½"	Simplex	280	125	250	375
	Duplex	560	95	190	285
3½"	Simplex	550	60	125	185
	Duplex	1100	45	95	140

Capacities listed are for discharge pressures up to 200 PSIG. Capacity will decrease by 0.8% for each 100 PSIG over 200 PSIG.

NOTES:

1. Plastic HPD liquid ends are limited to maximum pressure of 150 PSIG @ 68°F, and are linearly derated to 65 PSIG @ 140°F.
2. Capacity is shown at 162 SPM (100:1 turndown).
3. Maximum speed can be set below 162 SPM where required. Consult factory.
4. Minimum capacity is 1% (100:1 turndown) of actual maximum flow at full speed.
5. Centrac is only available with motor and controller supplied by Milton Roy.
6. Consult NPSH Handbook for proper design of suction lines.

CENTRAC B PERFORMANCE AND MOTOR SIZING TABLES

Data Table No. 1 – DC Servo Motor (AKM) Sizing

Plunger Diameter (INCH)	No. of Heads	Max. Capacity (GPH)	DC Servo Motor Types Sizes & Pressure Limits (PSIG)			
			AKM 44G (1.38/2.24 HP)	AKM 53K (2.84/4.33 HP)	AKM 63K (3.14/5.9 HP)	AKM 72K (6.07 HP)
1	Simplex	45	610	1235	1750	2290
	Duplex	90	455	925	1310	1715
1-1/4	Simplex	70	390	790	1120	1465
	Duplex	140	290	595	840	1100
1-1/2	Simplex	100	270	550	775	1015
	Duplex	200	200	410	580	760
2	Simplex	180	150	305	435	570
	Duplex	360	110	230	325	425
2-1/2	Simplex	280	95	195	280	365
	Duplex	560	70	145	210	275
3-1/2	Simplex	550	45	100	140	185
	Duplex	1100	35	75	105	140

**Data Table No. 2 – Alternative AC Vector Duty Motor Sizing**

Plunger Diameter (INCH)	No. of Heads	Max. Capacity (GPH)	AC Vector Duty Motor Types Sizes (Torques) & Pressure Limits in PSIG			
			1 HP (3 LBS-FT)	2 HP (6 LBS-FT)	3 HP (9 LBS-FT)	5 HP (14 LBS-FT)
1	Simplex	45	495	985	1480	2290
	Duplex	90	370	740	1110	1875
1-1/4	Simplex	70	315	630	950	1465
	Duplex	140	235	470	710	1100
1-1/2	Simplex	100	215	435	655	1015
	Duplex	200	160	325	490	760
2	Simplex	180	120	245	370	570
	Duplex	360	90	185	275	425
2-1/2	Simplex	280	75	155	235	365
	Duplex	560	55	115	175	275
3-1/2	Simplex	550	40	80	120	185
	Duplex	1100	30	60	90	140

Data Table No. 3 – Centrac B pump Pressure Limits of Standard Pump Gears

No. of Heads	1" Plunger	1¼" Plunger	1½" Plunger	2" Plunger	2½" Plunger	3½" Plunger
Simplex	1525 psig	975 psig	675 psig	380 psig	240 psig	120 psig
Duplex	1145 psig	730 psig	505 psig	285 psig	180 psig	90 psig

Data Table No. 4 – Centrac B Maximum Allowable Suction Pressure Range

No. of Heads	1" Plunger	1¼" Plunger	1½" Plunger	2" Plunger	2½" Plunger	3½" Plunger
Simplex	100 psig	100 psig	70 psig	40 psig	25 psig	15 psig
Duplex	100 psig	100 psig	70 psig	40 psig	25 psig	15 psig

NOTES:

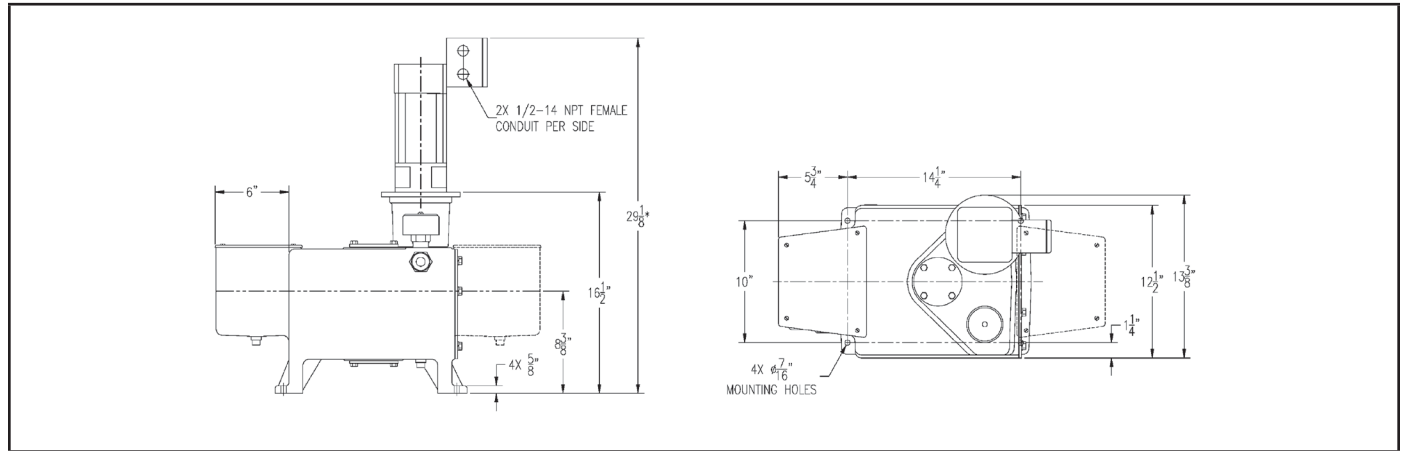
- Capacities listed in Table 1 & 2 are for discharge pressures up to 200 psig. Capacity will decrease by 0.8% for each 100 psig over 200 psig. Horsepower ratings shown are for 230 VAC/460 VAC incoming power supplies.
- For pumps having double diaphragms with and without leak detection, overall capacity must be de-rated by an additional 5%.
- Plastic HPD liquid ends are limited to maximum pressure of 150 PSIG @ 68° F, and are linearly de-rated to 65 PSIG @ 140° F. Minimum operating temperature is 32° F (0° C). Maximum temperature on metallic heads is 194° F (90° C). Higher temperature applications are available — consult factory.
- Capacity is shown at 162 SPM (100:1 turndown).
- Maximum speed can be set below 162 SPM where required. Consult factory.
- Minimum capacity is 1% (100:1 turndown) of actual maximum flow at full speed of 162 spm.
- Centrac is only available with motor and controller supplied by Milton Roy Company.
- Data Table No. 1 above is based only on Danaher Motion Kollmorgen AKM series DC Servo motors with the CR or S6-series drives associated with these motors.
- For AC vector duty motor application, use the Data Table No. 2 below. Turndown of the AC motor must be rated for 100:1 or more, for constant torque application at the minimum torque ratings listed on the table.
- Refer to Data Table No. 3 to determine which pump gearbox package is required for your application. If the pump operating pressure will not exceed the pressures in this table, then use standard pump gearing package. If the pump operating pressure is to exceed the pressures in this table, then order the high pressure gearing package for the Centrac B pump.
- Consult Pump User Manual for proper design of suction lines. Refer to Data Table No. 4 for the maximum allowable Centrac B pump inlet suction pressures. Minimum NPSH is 3 psia.



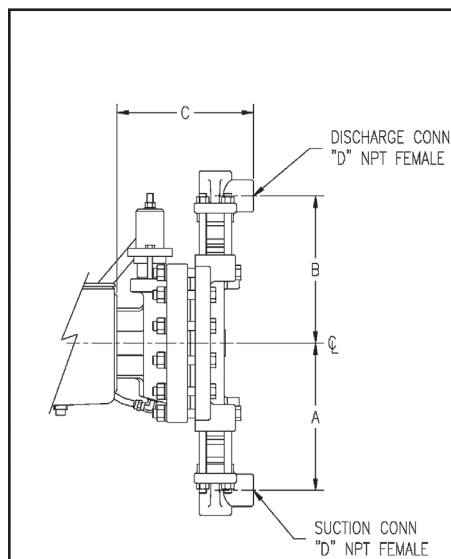
PUMP DIMENSIONS

Dimensions shown are approximate for TENV and are not for construction. Consult Milton Roy for exact engineering dimensions.

Drive



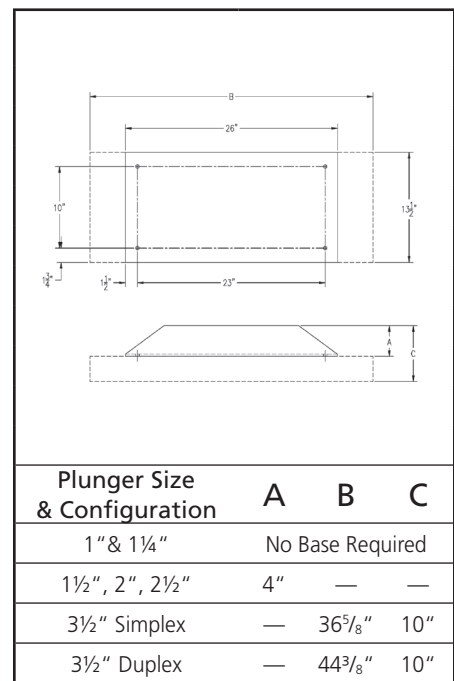
Liquid End



Plgr. Dia.	A	B	C	D
Metallic				
1"	5 ⁷ / ₃₂ "	5 ⁷ / ₃₂ "	7"	1/2"
1 1/4"	5 ⁷ / ₃₂ "	5 ⁷ / ₃₂ "	7"	1/2"
1 1/2"	7 ¹ / ₁₆ "	7 ¹ / ₁₆ "	8 3/4"	1"
2"	7 ⁹ / ₁₆ "	7 ⁹ / ₁₆ "	8 3/4"	1"
2 1/2"	7 ⁹ / ₁₆ "	7 ⁹ / ₁₆ "	8 3/4"	1"
3 1/2"	10 ¹ / ₈ "	10 ¹ / ₈ "	13"	1 1/2"
Plastic				
1"	6 1/2"	6 1/2"	6 ¹⁵ / ₁₆ "	1/2"
1 1/4"	6 1/2"	6 1/2"	6 ¹⁵ / ₁₆ "	1/2"
1 1/2"	9 ⁹ / ₁₆ "	9 ⁹ / ₁₆ "	8 3/4"	1"
2"	9 ⁹ / ₁₆ "	9 ⁹ / ₁₆ "	8 3/4"	1"
2 1/2"	9 ⁹ / ₁₆ "	9 ⁹ / ₁₆ "	8 3/4"	1"
3 1/2"	15 ⁷ / ₈ "	13 ¹ / ₈ "	13 1/4"	1 1/2"

NOTE: Plastic liquid end has vertical suction and discharge connections.

Base (Envelope)



Plunger Size & Configuration	A	B	C
1" & 1 1/4"	No Base Required		
1 1/2", 2", 2 1/2"	4"	—	—
3 1/2" Simplex	—	36 ⁵ / ₈ "	10"
3 1/2" Duplex	—	44 ³ / ₈ "	10"

HIGH PERFORMANCE DIAPHRAGM (HPD) LIQUID END MATERIALS OF CONSTRUCTION

Materials of Construction	Diaphragm (3)	Diaphragm Head	Port Connection	Ball Seat (4)	Ball Check (4)	Ball Guide
316 SS (1)	PTFE/Elastomer Bond	316 SS	316 SS	316 SS	316 SS	316 SS
Alloy 20 (1)	PTFE/Elastomer Bond	Alloy 20	Alloy 20	Alloy 20	Alloy 20	Alloy 20
Plastic (2)	PTFE/Elastomer Bond	PVC	PVC	PVC (5)	Ceramic (5)	PVC (5)
HAS C	PTFE/Elastomer Bond	HAS C22	HAS C22	HAS C22	HAS C22	HAS C22

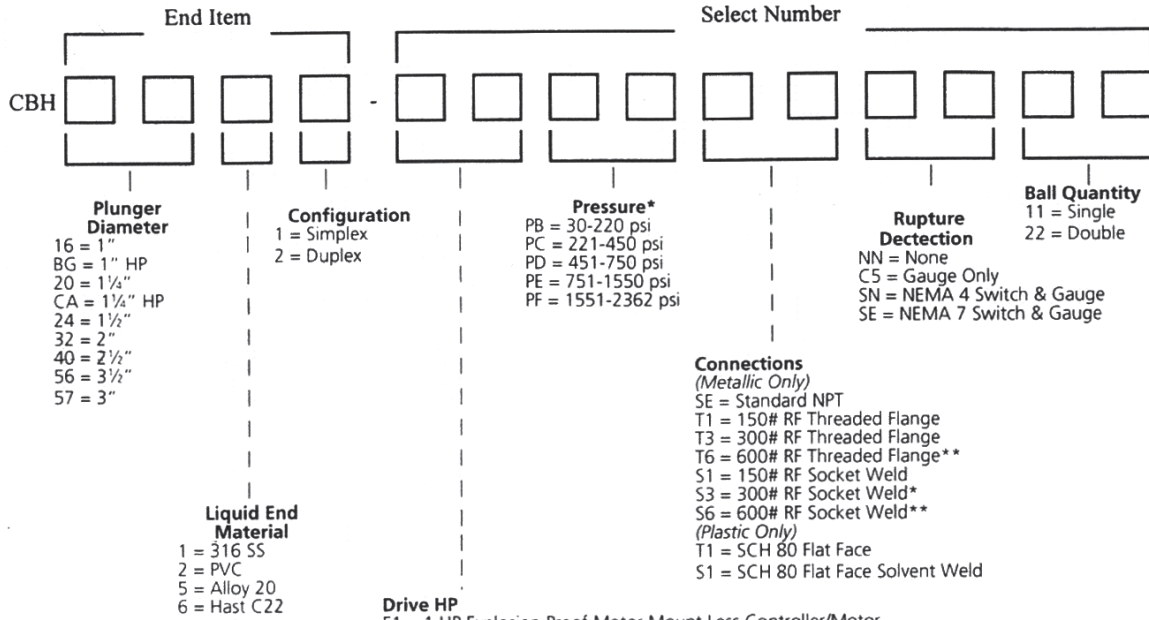
NOTES:

1. Temperature range for metallic versions is 10° to 194° F.
2. Temperature range for plastic versions is 10° to 140° F.
3. Diaphragm isolates displacement chamber and contour plate from process liquid.
4. Special ball check and seat materials are available to severe slurry service. Contact factory.
5. Double ball standard only in plastic liquid ends. Double ball optional on all other liquid ends.



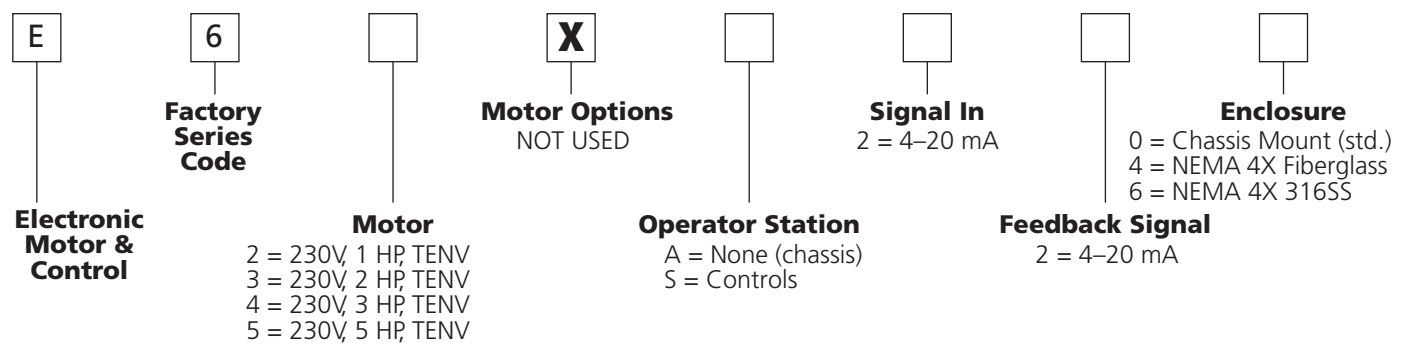
MODEL NOMENCLATURE

Pump Model Code



* - Not all pressure ranges are available with all plunger sizes. See capacity pressure tables for proper pressure availability
 ** - Not available on 3 1/2" plungers
 *** - Not available on 1 1/2", 2", 2 1/4" and 3 1/2" plungers
 † - Motor mount for standard type motors (AC/DC). 100:1 turndown may not be available with option.

Standard Controller Model Code



ACCESSORIES

- Transformers
- Safety Valves
- Back Pressure Valves
- Calibration Columns
- Pulsation Dampeners
- Tanks & Standard Systems
- Mixers
- Sludge Traps
- Dissolving Baskets
- Pressure Gauges

All information contained herein is subject to change without notice.

CENTRAC B



NOTES

Centrac B

PD 3151

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MILTON ROY

