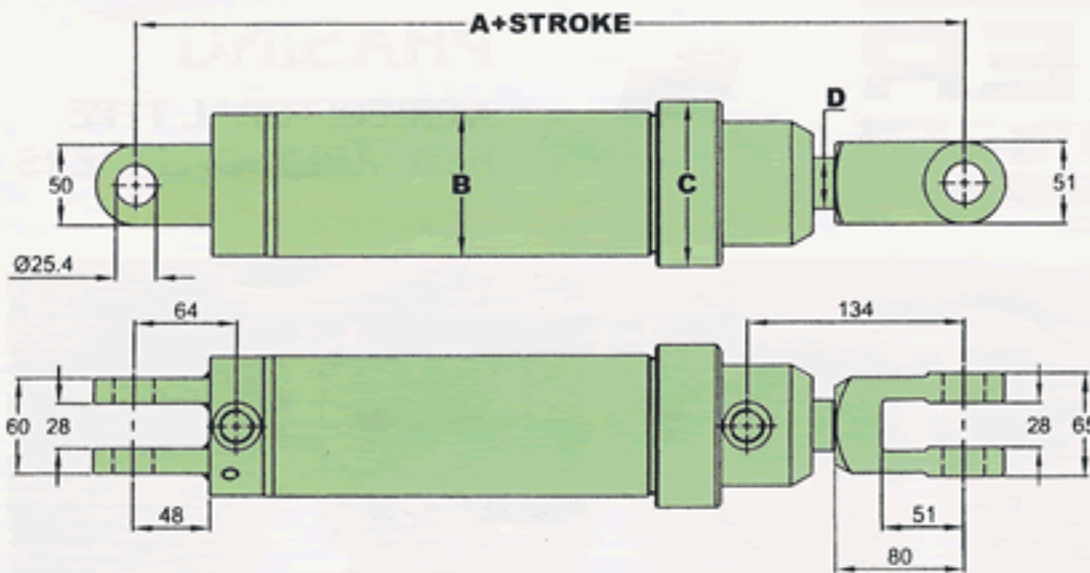


1. **Cylinder Barrel.** Machined from cold drawn seamless Hydraulic Tube, precision honed and welded.
2. **Piston Rod.** Machined from grade K1045 steel bar, hard chromed to 0.025mm (0.001") thickness.
3. **Gland.** Machined from high strength, ductile S.G. Iron bar.
4. **Gland Retaining Nut.** Internally threaded for easy seal access and machined from Gr.VM312 Hollow Bar.
5. **Ports.** Standard $\frac{3}{4}$ "UNF O Ring port machined flush with cylinder barrel. The gland port can be rotated to any position.
6. **Air Bleed Plug.** To assist in purging air from the hydraulic system.
7. **Piston.** One piece piston machined from Gr.A250 steel.
8. **Piston Nut.** Grade 8 UNF hexagonal nut.
9. **Rephasing Grooves.** 4 grooves precision machined into the barrel for rephasing at the end of the extend stroke.
10. **Cylinder Clevis.** Fabricated from Gr. 1030 steel.
11. **Rod Knuckle.** Screw on cast Knuckle manufactured from high strength ductile iron.
12. **Pins.** 1" Dia. Gr.4140 pin secured with a Linch Pin.
13. **Gland Seal - Gland to Barrel.** O Ring with contour shaped Back-up ring.
14. **Gland Seal - Gland to Piston Rod.** Double lipped single acting seal.
15. **Rod Wiper.** Flexible wiper seal with effective scraping lip.
16. **Piston Seal.** Hallite Type 914 with Wear Ring for positive seal and durability over the phasing grooves.
17. **Hallite Wearing Strip [Type 87].** Produced from a special combination of PTFE & bronze, has excellent heat resistance and strength.

Baker Hydraulic's Phasing Cylinders can be easily identified by a four digit number stamped into the barrel at the rear clevis end.

PHASING



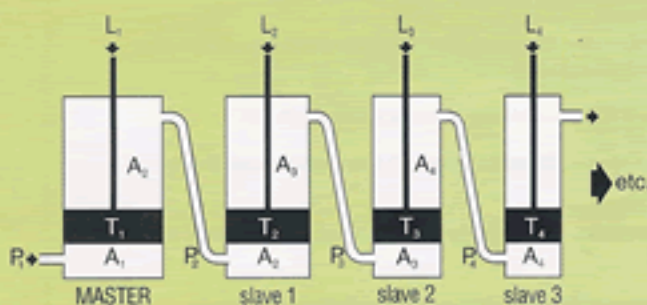
Bore		mm				8" Str	12" Str
In	mm	A	B	C	D	Approx.	Mass Kg
3.00	76.20	311	89	102	31.8	14.0	15.8
3.25	82.55	311	95	107	31.8	15.2	17.3
3.50	88.90	311	102	114	31.8	16.4	18.3
3.75	95.25	311	108	122	34.9	18.6	20.9
4.00	101.60	311	114	130	34.9	20.0	22.3
4.25	107.95	311	121	136	34.9	21.5	24.0
4.50	114.30	311	127	141	38.1	25.5	28.2
4.75	120.65	311	133	147	38.1	26.0	28.8
5.00	127.00	311	140	154	38.1	27.5	30.4

Cylinders in this series are designed for installations requiring identical rod speeds. The annular area of each cylinder is equal to the full area of the next smaller cylinder in the series. Due to small variations in fluid volumes, cylinders gradually become out of phase. They are rephased (synchronized) by fully extending the rods.

BORE		ROD DIA.		BORE AREA		ANNULAR AREA		6.89mPa/1000psi		10.34mPa/1500psi		13.79mPa/2000psi		17.24mPa/2500psi		20.68mPa/3000psi	
mm	In	mm	In	mm ²	In ²	mm ²	In ²	kN	lbf	kN	lbf	kN	lbf	kN	lbf	kN	lbf
76.20	3.00	31.750	1.250	4560	7.069	3769	5.842	31.44	7069	47.17	10603	62.89	14137	78.61	17671	94.33	21206
82.55	3.25	31.750	1.250	5352	8.296	4561	7.069	36.90	8296	55.35	12444	73.81	16592	92.26	20739	110.71	24887
88.90	3.50	31.750	1.250	6207	9.621	5415	8.394	42.80	9621	64.20	14432	85.60	19242	107.00	24053	128.40	28863
95.25	3.75	34.925	1.375	7126	11.045	6168	9.560	49.13	11045	73.70	16567	98.26	22089	122.83	27612	147.39	33134
101.60	4.00	34.925	1.375	8107	12.566	7149	11.081	55.90	12566	83.85	18850	111.80	25133	139.75	31416	167.70	37699
107.95	4.25	34.925	1.375	9152	14.186	8194	12.701	63.11	14186	94.66	21279	126.21	28373	157.77	35466	189.32	42559
114.30	4.50	38.100	1.500	10261	15.904	9121	14.137	70.75	15904	106.12	23856	141.50	31809	176.87	39761	212.25	47713
120.65	4.75	38.100	1.500	11433	17.721	10293	15.954	78.83	17721	118.24	26581	157.66	35441	197.07	44301	236.48	53162
127.00	5.00	38.100	1.500	12668	19.635	11528	17.868	87.34	19635	131.02	29452	174.69	39270	218.36	49087	262.03	58905

SELECTION OF CYLINDERS

Formulae: $P_1 = \frac{T_1}{A_1}$; $P_2 = \frac{T_2}{A_2}$ etc., where $T_1 = L_1 + L_2 + L_3 + L_4 \dots$, $T_2 = L_2 + L_3 + L_4 \dots$ etc.



STEP 1 Determine effective area A for largest (master) cylinder in series by formula: $A_1 = \frac{L_1 + L_2 + L_3 \text{ etc.}}{P_1}$

STEP 2 Determine pressure in each cylinder starting with smallest cylinder using the formula: $P = \frac{T}{A}$

STEP 3 Check that the pressure does not exceed system pressure (13.79mPa, 2000psi). If P is excessive select larger series of cylinders and recheck P.

A = Area L = Load P = Pressure T = Total load acting