CYLINDERS

MINI

TIE-ROD

WELDED

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TAK - BOK

2" Bore Cylinders

TIE ROD TYPE

Part Number	Bore x Stroke inch	Rod Dia. inch	Port Size Npt	Clevis Pin Dia.	Barrel Bore mm	Shaft stroke mm	Shaft O/D mm	Barrel Length mm	Closed Centre mm	Open Centre mm	Force Rod 180 bar Tons	Force Piston 180 bar Tons	Swept Volume Rod Litres	Swept Volume Piston Litres	Wt. Kgs +/-	RETAIL: 01-01-2025
81H-20006-106	2" x 6"	1-1/16"	3/8"	1"	50.8	152	26.9	210	413	565	2.37	3.53	0.22	0.31	7.1	
81H-20008-106	2" x 8"	1-1/16"	3/8"	1"	50.8	203	26.9	261	464	667	2.37	3.53	0.30	0.41	8	
81H-20008-106A	2" x 8"A	1-1/16"	3/8"	1"	50.8	203	26.9	261	514	717	2.37	3.53	0.30	0.41	8	
81H-20010-106	2" x 10"	1-1/16"	3/8"	1"	50.8	254	26.9	311	514	768	2.37	3.53	0.37	0.51	8.4	
81H-20012-106	2" x 12"	1-1/16"	3/8"	1"	50.8	305	26.9	362	565	870	2.37	3.53	0.44	0.62	9.1	
81H-20014-106	2" x 14"	1-1/16"	3/8"	1"	50.8	356	26.9	413	616	972	2.37	3.53	0.52	0.72	9.8	
81H-20016-106	2" x 16"	1-1/16"	3/8"	1"	50.8	406	26.9	464	667	1073	2.37	3.53	0.59	0.82	10.4	
81H-20018-106	2" x 18"	1-1/16"	3/8"	1"	50.8	457	26.9	515	718	1175	2.37	3.53	0.67	0.93	11.1	
81H-20020-106	2" x 20"	1-1/16"	3/8"	1"	50.8	508	26.9	565	768	1276	2.37	3.53	0.74	1.03	11.7	
81H-20024-106	2" x 24"	1-1/16"	3/8"	1"	50.8	610	26.9	667	870	1480	2.37	3.53	0.89	1.24	13	
81H-20028-106	2" x 28"	1-1/16"	3/8"	1"	50.8	711	26.9	769	972	1683	2.37	3.53	1.04	1.44	14.3	
81H-20030-106	2" x 30"	1-1/16"	3/8"	1"	50.8	762	26.9	819	1022	1784	2.37	3.53	1.11	1.54	15.1	
81H-20036-106	2" x 36"	1-1/16"	3/8"	1"	50.8	914	26.9	972	1175	2089	2.37	3.53	1.33	1.85	17.1	
81H-20048-106	2" x 48"	1-1/6"	3/8"	1"	50.8	1219	26.9	1277	1480	2699	2.37	3.53	1.78	2.47	21.4	
81H-20080-106	2" x 80"	1-1/16"	3/8"	1"	50.8	2032	26.9	2090	2292	4324	2.37	3.53	2.96	4.12	32.5	

PLEASE NOTE: ALL O.E.M. NAMES OR NUMBERS ARE FOR REFERENCE USE ONLY

TAK - BOK

3" Bore Cylinders

TIE ROD TYPE

Part Number	Bore x Stroke inch	Rod Dia. inch	Port Size Npt	Clevis Pin Dia.	Barrel Bore mm	Shaft stroke mm	Shaft O/D mm	Barrel Length mm	Closed Centre mm	Open Centre mm	Force Rod 180 bar Tons	Force Piston 180 bar Tons	Swept Volume Rod Litres	Swept Volume Piston Litres	Wt. Kgs +/-	RETAIL: 01-01-2025
81H-30006-125	3" x 6"	1-1/4"	1/2"	1"	76.2	152	31.75	210	413	565	6.74	8.16	0.57	0.69	10.1	
81H-30008-125	3" x 8"	1-1/4"	1/2"	1"	76.2	203	31.75	261	464	667	6.74	8.16	0.76	0.93	11	
81H-30008-150	3" x 8"	1-1/2"	1/2"	1"	76.2	203	38.1	261	464	667	6.11	8.16	0.69	0.93	12.1	
81H-30008-125A	3" x 8" A*	1-1/4"	1/2"	1"	76.2	203	31.75	261	514	717	6.74	8.16	0.76	0.93	11.3	
81H-30008-150A	3" x 8" A*	1-1/2"	1/2"	1"	76.2	203	38.1	261	514	717	6.11	8.16	0.69	0.93	12.4	
81H-30010-125	3" x 10"	1-1/4"	1/2"	1"	76.2	254	31.75	311	514	768	6.74	8.16	0.96	1.16	13.7	
81H-30010-150	3" x 10"	1-1/2"	1/2"	1"	76.2	254	38.1	311	514	768	6.11	8.16	0.87	1.16	15	
81H-30012-125	3" x 12"	1-1/4"	1/2"	1"	76.2	305	31.75	362	565	870	6.74	8.16	1.15	1.39	12.8	
81H-30012-150	3" x 12"	1-1/2"	1/2"	1"	76.2	305	38.1	362	565	870	6.11	8.16	1.04	1.39	14	
81H-30014-125	3" x 14"	1-1/4"	1/2"	1"	76.2	356	31.75	413	616	972	6.74	8.16	1.34	1.62	13.7	
81H-30014-150	3" x 14"	1-1/2"	1/2"	1"	76.2	356	38.1	413	616	972	6.11	8.16	1.22	1.62	15.1	
81H-30016-125	3" x 16"	1-1/4"	1/2"	1"	76.2	406	31.75	464	667	1073	6.74	8.16	1.53	1.85	14.8	
81H-30016-150	3" x 16"	1-1/2"	1/2"	1"	76.2	406	38.1	464	667	1073	6.11	8.16	1.39	1.85	16.3	
81H-30018-125	3" x 18"	1-1/4"	1/2"	1"	76.2	457	31.75	515	718	1175	6.74	8.16	1.72	2.08	15.8	
81H-30018-150	3" x 18"	1-1/2"	1/2"	1"	76.2	457	38.1	515	718	1175	6.11	8.16	1.56	2.08	17.4	
81H-30020-125	3" x 20"	1-1/4"	1/2"	1"	76.2	508	31.75	565	768	1276	6.74	8.16	1.91	2.32	16.8	
81H-30020-150	3" x 20"	1-1/2"	1/2"	1"	76.2	508	38.1	565	768	1276	6.11	8.16	1.74	2.32	18.5	
81H-30024-150	3" x 24"	1-1/2"	1/2"	1"	76.2	610	38.1	667	870	1480	6.11	8.16	2.09	2.78	21	
81H-30028-150	3" x 28"	1-1/2"	1/2"	1"	76.2	711	38.1	769	972	1683	6.11	8.16	2.43	3.24	23.6	
81H-30030-150	3" x 30"	1-1/2"	1/2"	1"	76.2	762	38.1	819	1022	1784	6.11	8.16	2.60	3.47	24.43	
81H-30036-150	3" x 36"	1-1/2"	1/2"	1"	76.2	914	38.1	972	1175	2089	6.11	8.16	3.12	4.17	28.2	
81H-30048-150	3" x 48"	1-1/2"	1/2"	1"	76.2	1219	38.1	1277	1480	2699	6.11	8.16	4.17	5.56	43.2	
81H-30080-150	3" x 80"	1-1/2"	1/2"	1"	76.2	2032	38.1	2090	2292	4324	6.11	8.16	6.95	9.26	52	
81H-30120-150	3" x 120"	1-1/2"	1/2"	1"	76.2	3048	38.1	3105	3308	6356	6.11	8.16	10.42	13.89	75	

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TAK - BOK

4" Bore Cylinders

TIE ROD TYPE

Part Number	Bore x Stroke inch	Rod Dia. inch	Port Size Npt	Clevis Pin Dia.	Barrel Bore mm	Shaft stroke mm	Shaft O/D mm	Barrel Length mm	Closed Centre mm	Open Centre mm	Force Rod 180 bar Tons	Force Piston 180 bar Tons	Swept Volume Rod Litres	Swept Volume Piston Litres	Wt. Kgs +/-	RETAIL: 01-01-2025
81H-40008-200	4" x 8"	2"	1/2"	1"	101.6	203	50.8	261	464	667	10.76	14.41	1.23	1.64	18	
81H-40008-200A	4" x 8" A*	2"	1/2"	1"	101.6	203	50.8	261	514	717	10.76	14.41	1.23	1.64	18.4	
81H-40010-200	4" x 10"	2"	1/2"	1"	101.6	254	50.8	311	514	768	10.76	14.41	1.54	2.06	19.1	
81H-40012-200	4" x 12"	2"	1/2"	1"	101.6	305	50.8	362	565	870	10.76	14.41	1.85	2.47	20.6	
81H-40014-200	4" x 14"	2"	1/2"	1"	101.6	356	50.8	413	616	972	10.76	14.41	2.16	2.88	0.72	
81H-40016-200	4" x 16"	2"	1/2"	1"	101.6	406	50.8	464	667	1073	10.76	14.41	2.47	3.29	23.5	
81H-40018-200	4" x 18"	2"	1/2"	1"	101.6	457	50.8	515	718	1175	10.76	14.41	2.78	3.70	25.2	
81H-40020-200	4" x 20"	2"	1/2"	1"	101.6	508	50.8	565	768	1276	10.76	14.41	3.09	4.12	28.5	
81H-40024-200	4" x 24"	2"	1/2"	1"	101.6	610	50.8	667	870	1480	10.76	14.41	3.71	8.65	1.24	
81H-40028-200	4" x 28"	2"	1/2"	1"	101.6	711	50.8	769	972	1683	10.76	14.41	4.32	5.76	40.2	
81H-40030-200	4" x 30"	2"	1/2"	1"	101.6	762	50.8	819	1022	1784	10.76	14.41	4.63	6.17	42.2	
81H-40036-200	4" x 36"	2"	1/2"	1"	101.6	914	50.8	972	1175	2089	10.76	14.41	5.55	7.41	47.5	
81H-40048-200	4" x 48"	2"	1/2"	1"	101.6	1219	50.8	1277	1480	2699	10.76	14.41	7.41	9.88	56.2	
81H-40080-200	4" x 80"	2"	1/2"	1"	101.6	2032	50.8	2090	2292	4324	10.76	14.41	12.35	16.47	89.3	
81H-400120-200	4" x 120"	2"	1/2"	1"	101.6	3048	50.8	3105	3308	6356	10.76	14.41	18.52	24.70	128	

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TAK - BOK

CYLINDER SPARES

TIE ROD TYPE

Part Number		RETAIL:
	DESCRIPTION FOR ; 2" SPARES	01-01-2025
81H-20-SKIT-NWO	2" SEAL KIT ; "O" RING DESIGN ; FOR SHAFT 1-1/16"	
81H-20-SKIT-NBU	2" SEAL KIT ; U SEAL DESIGN ; FOR SHAFT 1-1/16"	
81H-20-56891	2" ROD CLEVIS 1-1/16" OD SHAFT ; THREAD 1-1/16"- UNF	
81H-20-040001	2" ROD CLEVIS 1-1/16" OD SHAFT ; LOCKING SCREW TYPE 80" - 120" STROKE	
81H-A03-20A0C0	LOCKING SCREW FOR CLEVIS FOR 2" 3" 4"	
81H-N600001-2	LOCKING SCREW NYLON BLOCK FOR CLEVIS FOR 2" 3" 4"	
81H-20-59626	2" ROD CLEVIS PIN ; 1" OD	
81H-20-63512	2" R CLIP FOR PIN ; 1" OD	
81H-20-62538	2" HEAD ROD CAP ; "O" RING DESIGN ; FOR SHAFT 1-1/16"	
81H-20-62538NBU	2" HEAD ROD CAP ; U SEAL DESIGN ; FOR SHAFT 1-1/16"	
81H-20-59842	2" BASE BOTTOM CLEVIS 2 PORTS 3/8" NPT	
81H-20-59847	2" PISTON	
81H-20-P-NUT	2" PISTON NUT	
	DESCRIPTION FOR ; 3" SPARES	
81H-30-SKIT-NWO	3" SEAL KIT ; "O" RING DESIGN ; FOR SHAFT 1-1/4"	
81H-30-SKIT-NBO	3" SEAL KIT ; "O" RING DESIGN ; FOR SHAFT 1-1/2"	
81H-30-SKIT-NWU	3" SEAL KIT ; U SEAL DESIGN ; FOR SHAFT 1-1/4"	
81H-30-SKIT-NBU	3" SEAL KIT ; U SEAL DESIGN ; FOR SHAFT 1-1/2"	
81H-30-56892	3" ROD CLEVIS 1-1/4" & 1-1/2" OD SHAFT ; THREAD 1-1/4"- UNF; FOR BOTH SHAFT O/D	
81H-3040-040001	3" AND 4" ROD CLEVIS 1-1/2" & 2" OD SHAFT ; LOCKING SCREW 80" - 120" STROKE	
81H-A03-20A0C0	LOCKING SCREW FOR CLEVIS FOR 2" 3" 4"	
81H-N600001-2	LOCKING SCREW NYLON BLOCK FOR CLEVIS FOR 2" 3" 4"	
81H-30-59626	3" ROD CLEVIS PIN ; 1" OD	
81H-30-63512	3" R CLIP FOR PIN ; 1" OD	
81H-30-62541	3" HEAD ROD CAP ; "O" RING DESIGN ; FOR SHAFT 1-1/4"	
81H-30-62542	3" HEAD ROD CAP ; "O" RING DESIGN ; FOR SHAFT 1-12"	
81H-30-62541-NB	3" HEAD ROD CAP ; U SEAL DESIGN ; FOR SHAFT 1-1/4"	
81H-30-62542-NB	3" HEAD ROD CAP ; U SEAL DESIGN ; FOR SHAFT 1-1/2"	
81H-30-59844	3" BASE BOTTOM CLEVIS 2 PORTS 1/2" NPT	
81H-30-59849	3" PISTON	
81H-30-P-NUT	3" PISTON NUT	
	DESCRIPTION FOR ; 4" SPARES	
81H-40-SKIT-NWO	4" SEAL KIT ; "O" RING DESIGN ; FOR SHAFT 2"	
81H-40-SKIT-NBU	4" SEAL KIT ; U SEAL DESIGN ; FOR SHAFT 2"	
81H-40-56893	4" ROD CLEVIS 2" OD SHAFT ; THREAD 1-1/2"- UNF	
81H-3040-040001	3" AND 4" ROD CLEVIS 1-1/2" & 2" OD SHAFT ; LOCKING SCREW 80" - 120" STROKE	
81H-A03-20A0C0	LOCKING SCREW FOR CLEVIS FOR 2" 3" 4"	
81H-N600001-2	LOCKING SCREW NYLON BLOCK FOR CLEVIS FOR 2" 3" 4"	
81H-40-59626	4" ROD CLEVIS PIN ; 1" OD	
81H-40-63512	4" R CLIP FOR PIN ; 1" OD	
81H-40-62549	4" HEAD ROD CAP ; "O" RING DESIGN ; FOR SHAFT 2"	
81H-40-62549-NB	4" HEAD ROD CAP ; U SEAL DESIGN ; FOR SHAFT 2"	
81H-40-59846	4" BASE BOTTOM CLEVIS 2 PORTS 1/2" NPT	
81H-40-59851	4" PISTON	
81H-40-P-NUT	4" PISTON NUT	




TIE ROD CYLINDER TECHNICAL

HOW TO IDENTIFY TAK - BOK CYLINDERS

Barrel I/D	Barrel I/D	Barrel O/D	*** How to work out closed centre Measure barrel length in ? mm + 203 mm	Cylinder Size
2"	50.8 mm	61 mm	Example ; TK 2008 -106 (261 + 203) = 464 mm C/C	2"
3"	76.2 mm	86 mm	Example ; TK 3008 -125 (261 + 203) = 464 mm C/C	3"
4"	101.6 mm	112 mm	Example ; TK 4008 -200 (261 + 203) = 464 mm C/C	4"

*** How to work out closed centre with no sample; use (260.4 mm) + (stroke mm) = closed centre in mm

Barrel I/D	Barrel I/D	Barrel O/D	*** How to work out open centre Measure closed centre in ? mm + stroke in mm	Cylinder Size
2"	50.8 mm	61 mm	Example ; TK 2008 -106 (464 + 203) = 667 mm C/C	2"
3"	76.2 mm	86 mm	Example ; TK 3008 -125 (464 + 203) = 667 mm C/C	3"
4"	101.6 mm	112 mm	Example ; TK 4008 -200 (464 + 203) = 667 mm C/C	4"

		How to work out threads		
	Bore Diameter	2" (50.8 mm)	3" (76.2 mm)	4" (101.6 mm)
	Shaft Diameter	1-1/16" (27mm)	1-1/4" (31.75mm) 1-1/2" (38.1mm)	2" (50.8mm)
	Thread U N F	1-1/16" - 12 UNF	1-1/4" - 12 UNF	1-1/2" - 12 UNF
	Ports N P T	3/8"	1/2"	1/2"

NOTE: A* - SHAFT STROKE FOR ASAE TYPE CYLINDERS, YOU MUST ADD AN EXTRA 50.8 mm OR 2"

BUCKLING LOADS FOR TIE ROD CYLINDERS

2" CYLINDER

	BUCKLING LOADS		STROKE		
	Bore 2"	Shaft 1-1/16	6" TO 18"	20" TO 24"	28" TO 36"
			Stable Region Safety 3:1	Safety 2:1	Safety 1:1

3" CYLINDER

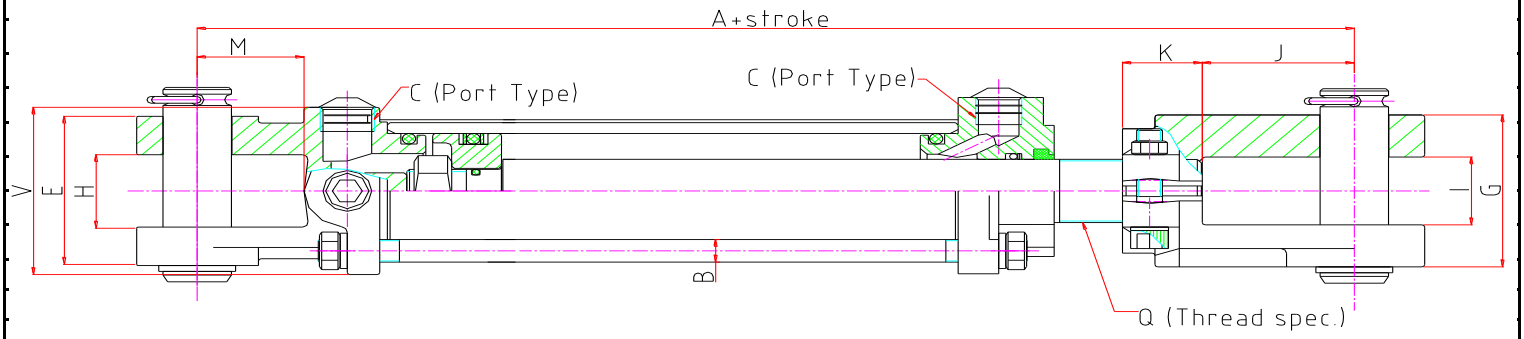
	BUCKLING LOADS		STROKE		
	Bore 3"	Shaft 1-1/4"	6" TO 16"	18" TO 20"	24" TO 36"
	Bore 3"	Shaft 1-1/2"	6" TO 24"	28" TO 36"	
			Stable Region Safety 3:1	Safety 2:1	Safety 1:1

4" CYLINDER

	BUCKLING LOADS		STROKE		
	Bore 4"	Shaft 2"	8" TO 36"		
			Stable Region Safety 3:1	Safety 2:1	Safety 1:1

CYLINDER DIMENSIONS

BORE	A***	B	C	E & G	H & I	J	M	Q	V
2"	10.25"	0.188"	3/8"	2.441"	1.125"	2.125"	2"	1-1/16"	2.874"
50.8 mm	260.4 mm	4.8 mm	NPT	62 mm	29 mm	54 mm	50.8 mm	UNF	73 mm
3"	10.25"	0.188"	1/2"	2.717"	1.125"	2.125"	2"	1-1/4"	3.78"
76.2 mm	260.4 mm	4.8 mm	NPT	69 mm	29 mm	54 mm	50.8 mm	UNF	96mm
4"	10.25"	0.25"	1/2"	2.717"	1.125"	2.125"	2.118"	1-1/2"	5.039"
101.6 mm	260.4 mm	6.35 mm	NPT	69 mm	29 mm	54 mm	53.8 mm	UNF	128 mm



TAK - BOK

1 1/4" Bore Cylinders

WELDED TYPE

Part Number	Bore x Stroke inch plus minus	Port Size Bsp	Clevis Pin Dia. mm	Barrel ID mm	Barrel OD mm	Shaft O/D mm	Shaft stroke mm	Closed Centre mm	Open Centre mm	Force Rod 250 bar Tons	Force Piston 250 bar Tons	Swept Volume Rod Litres	Swept Volume Piston Litres	Wt. Kgs +/-	RETAIL: 01-01-2025
81H-WC30-100-19	1-1/4" X 4"	1/4"	12	30	40	19	100	300	400	1	1.7	0.04	0.07	2	
81H-WC30-150-19	1-1/4 X 6"	1/4"	12	30	40	19	150	350	500	1	1.7	0.06	0.10	2	
81H-WC30-250-19	1-1/4" X 10"	1/4"	12	30	40	19	250	450	400	1	1.7	0.10	0.17	3	
81H-WC30-350-19	1-1/4" X 14"	1/4"	12	30	40	19	350	550	700	1	1.7	0.14	0.24	4	
81H-WC30-450-19	1-1/4" X 18"	1/4"	12	30	40	19	450	650	1100	1	1.7	0.19	0.31	5	
81H-WC30-600-19	1-1/4" X 24"	1/4"	12	30	40	19	600	800	1400	1	1.7	0.25	0.42	6	
81H-WC30-750-19	1-1/4" X 30"	1/4"	12	30	40	19	750	950	1700	1	1.7	0.31	0.53	7	
81H-WC30-900-19	1-1/4" X 36"	1/4"	12	30	40	19	900	1100	2000	1	1.7	0.38	0.64	8	

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TAK - BOK

2" Bore Cylinders

WELDED TYPE

Part Number	Bore x Stroke inch	Rod Dia. inch	Port Size Bsp	Clevis Pin Dia.	Barrel Bore mm	Shaft stroke mm	Shaft O/D mm	Barrel Length mm	Closed Centre mm	Open Centre mm	Force Rod 250 bar Tons	Force Piston 250 bar Tons	Swept Volume Rod Litres	Swept Volume Piston Litres	Wt. Kgs +/-	RETAIL: 01-01-2025
81H-WC20006-113	2" x 6"	1-1/8"	3/8"	1"	50.8	152	28.7	242	413	565	3.4	5	0.21	0.31	6.1	
81H-WC20008-113	2" x 8"	1-1/8"	3/8"	1"	50.8	203	28.7	293	464	667	3.4	5	0.28	0.41	6.7	
81H-WC20010-113	2" x 10"	1-1/8"	3/8"	1"	50.8	254	28.7	344	514	768	3.4	5	0.35	0.51	7.3	
81H-WC20012-113	2" x 12"	1-1/8"	3/8"	1"	50.8	305	28.7	395	565	870	3.4	5	0.42	0.62	7.9	
81H-WC20014-113	2" x 14"	1-1/8"	3/8"	1"	50.8	356	28.7	446	616	972	3.4	5	0.49	0.72	8.5	
81H-WC20016-113	2" x 16"	1-1/8"	3/8"	1"	50.8	406	28.7	496	667	1073	3.4	5	0.56	0.82	9.1	
81H-WC20018-113	2" x 18"	1-1/8"	3/8"	1"	50.8	457	28.7	547	718	1175	3.4	5	0.63	0.93	9.7	
81H-WC20020-113	2" x 20"	1-1/8"	3/8"	1"	50.8	508	28.7	598	768	1276	3.4	5	0.70	1.03	10.3	
81H-WC20024-113	2" x 24"	1-1/8"	3/8"	1"	50.8	610	28.7	700	870	1480	3.4	5	0.84	1.24	11.4	
81H-WC20030-113	2" x 30"	1-1/8"	3/8"	1"	50.8	762	28.7	852	1022	1784	3.4	5	1.05	1.54	13.2	
81H-WC20036-113	2" x 36"	1-1/8"	3/8"	1"	50.8	914	28.7	1004	1175	2089	3.4	5	1.26	1.85	14.9	

PLEASE NOTE: ALL O.E.M. NAMES OR NUMBERS ARE FOR REFERENCE USE ONLY

TAK - BOK

3" Bore Cylinders

WELDED TYPE

Part Number	Bore x Stroke inch	Rod Dia. inch	Port Size Bsp	Clevis Pin Dia.	Barrel Bore mm	Shaft stroke mm	Shaft O/D mm	Barrel Length mm	Closed Centre mm	Open Centre mm	Force Rod 250 bar Tons	Force Piston 250 bar Tons	Swept Volume Rod Litres	Swept Volume Piston Litres	Wt. Kgs +/-	RETAIL: 01-01-2025
81H-WC30006-150	3" x 6"	1-1/2"	1/2"	1"	76.2	152	38.1	252	413	565	8.5	11.5	0.52	0.69	11.1	
81H-WC30008-150	3" x 8"	1-1/2"	1/2"	1"	76.2	203	38.1	303	464	667	8.5	11.5	0.69	0.93	12.2	
81H-WC30008150A	3" x 8" A*	1-1/2"	1/2"	1"	76.2	203	38.1	303	514	717	8.5	11.5	0.69	0.93	12.7	
81H-WC30010-150	3" x 10"	1-1/2"	1/2"	1"	76.2	254	38.1	354	514	768	8.5	11.5	0.87	1.16	13.4	
81H-WC30012-150	3" x 12"	1-1/2"	1/2"	1"	76.2	305	38.1	405	565	870	8.5	11.5	1.04	1.39	14.5	
81H-WC30014-150	3" x 14"	1-1/2"	1/2"	1"	76.2	356	38.1	456	616	972	8.5	11.5	1.22	1.62	15.6	
81H-WC30016-150	3" x 16"	1-1/2"	1/2"	1"	76.2	406	38.1	506	667	1073	8.5	11.5	1.39	1.85	16.6	
81H-WC30018-150	3" x 18"	1-1/2"	1/2"	1"	76.2	457	38.1	557	718	1175	8.5	11.5	1.56	2.08	17.7	
81H-WC30020-150	3" x 20"	1-1/2"	1/2"	1"	76.2	508	38.1	608	768	1276	8.5	11.5	1.74	2.32	18.8	
81H-WC30024-150	3" x 24"	1-1/2"	1/2"	1"	76.2	610	38.1	710	870	1480	8.5	11.5	2.09	2.78	21.1	
81H-WC30028-150	3" x 28"	1-1/2"	1/2"	1"	76.2	711	38.1	811	972	1683	8.5	11.5	2.43	3.24	23.1	
81H-WC30030-150	3" x 30"	1-1/2"	1/2"	1"	76.2	762	38.1	862	1022	1784	8.5	11.5	2.60	3.47	24.3	
81H-WC30036-150	3" x 36"	1-1/2"	1/2"	1"	76.2	914	38.1	1014	1175	2089	8.5	11.5	3.12	4.17	27.6	
81H-WC30048-150	3" x 48"	1-1/2"	1/2"	1"	76.2	1219	38.1	1319	1480	2699	8.5	11.5	4.17	5.56	34.1	
81H-WC30120-150	3" x 120"	1-1/2"	1/2"	1"	76.2	3048	38.1	3148	3308	6356	8.5	11.5	10.42	13.89	73.8	

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TAK - BOK

CYLINDER SPARES

WELDED TYPE

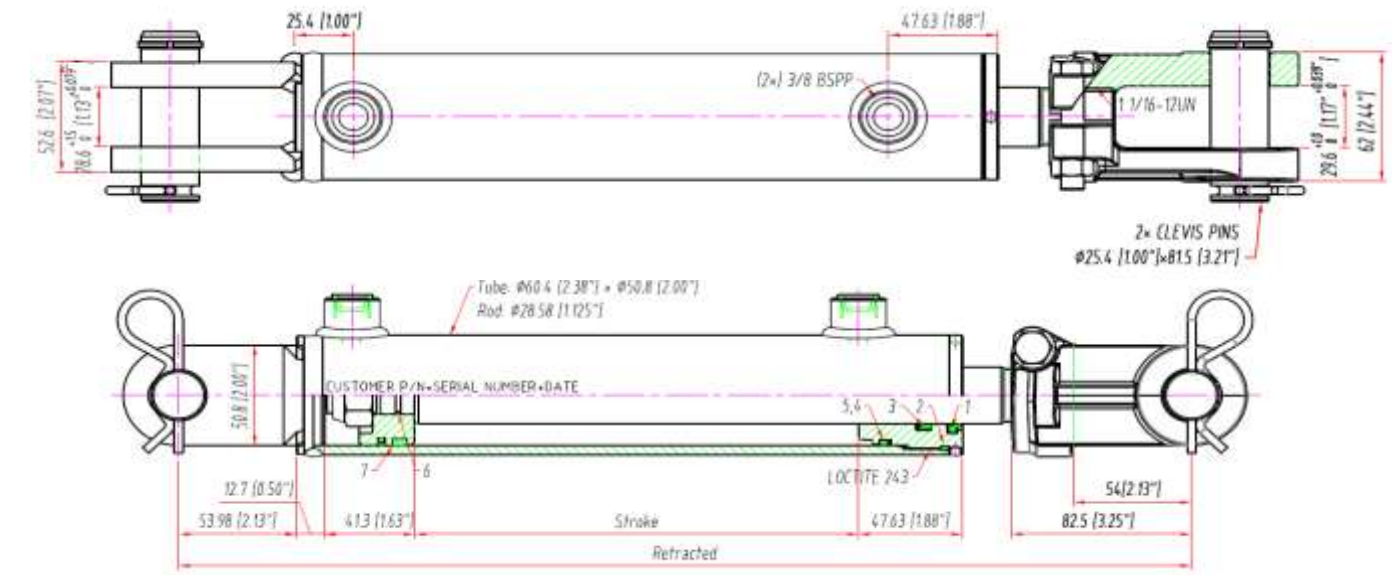
Part Number		RETAIL:
	DESCRIPTION FOR ; 2" SPARES	01-01-2025
81H-20-SKIT-W	2" SEAL KIT	
81H-20-CLV2001	MALE ROD END CLEVIS 2"	
81H-20-WBC2003	MALE BASE BOTTOM CLEVIS 2"	

	DESCRIPTION FOR ; 3" SPARES	
81H-30-SKIT-W	3" SEAL KIT	
81H-30-CLV3001	MALE ROD END CLEVIS 3"	
81H-30-WBC3002	MALE BASE BOTTOM CLEVIS 3"	

WELDED CYLINDER TECHNICAL

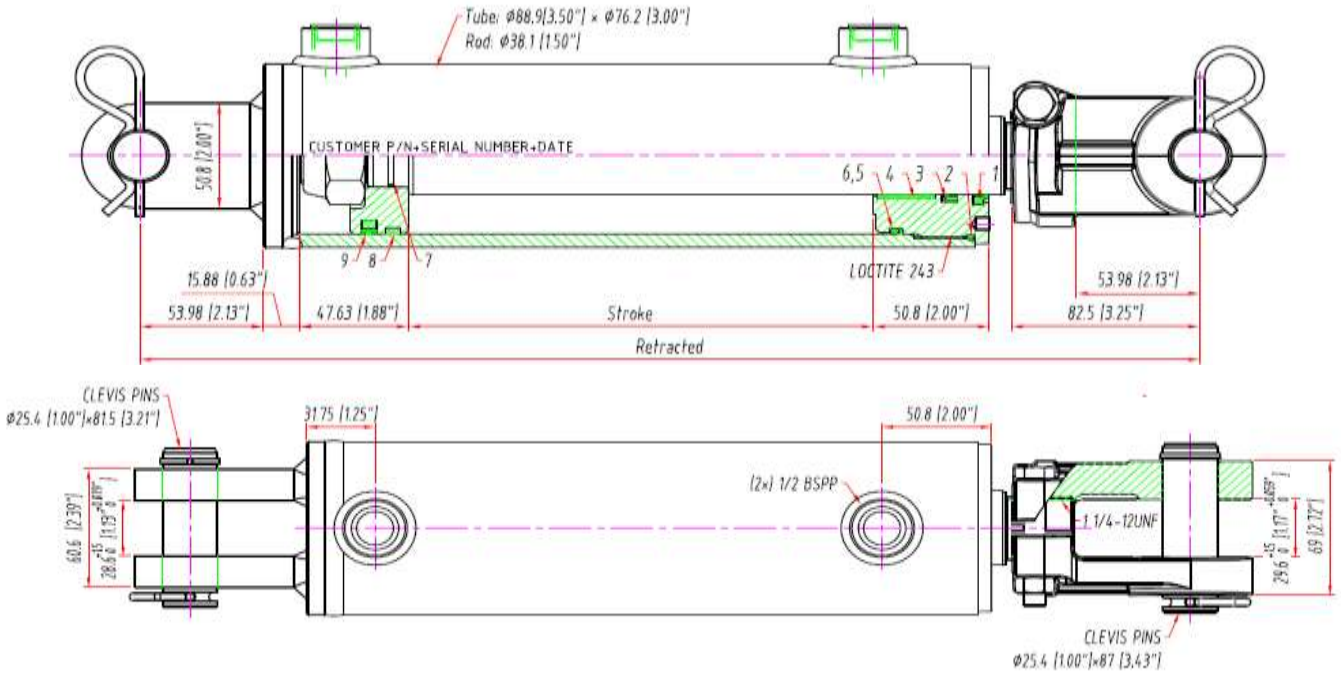
CYLINDER DIMENSIONS

PART NUMBER	STROKE	RETRACTED	PART NUMBER	STROKE	RETRACTED
81H-WC20006-113	152.4 (6.00")	412.75 (16.25")	81H-WC20018-113	457.2 (18.00")	717.55 (28.25")
81H-WC20008-113	203.2 (8.00")	463.55 (18.25")	81H-WC20020-113	508.0 (20.00")	768.35 (30.25")
81H-WC20012-113	304.8 (12.00")	565.15 (22.25")	81H-WC20024-113	609.6 (24.00")	869.95 (34.25")
81H-WC20014-113	355.6 (14.00")	615.95 (24.25")	81H-WC20030-113	762.0 (30.00")	1022.35 (40.25")
81H-WC20016-113	406.4 (16.00")	666.75 (26.25")	81H-WC20036-113	914.4 (36.00")	1174.75 (46.25")



CYLINDER DIMENSIONS

PART NUMBER	STROKE	RETRACTED	PART NUMBER	STROKE	RETRACTED
81H-WC30006-150	152.4 (6.00")	412.75 (16.25")	81H-WC30020-150	508.0 (20.00")	768.35 (30.25")
81H-WC30008-150	203.2 (8.00")	463.55 (18.25")	81H-WC30024-150	609.6 (24.00")	869.95 (34.25")
81H-WC30008-150A	203.2 (8.00")	514.35 (20.25")	81H-WC30028-150	711.2 (28.00")	971.55 (38.25")
81H-WC30010-150	355.6 (14.00")	615.95 (24.25")	81H-WC30030-150	762.0 (30.00")	1022.35 (40.25")
81H-WC30012-150	304.8 (12.00")	565.15 (22.25")	81H-WC30036-150	914.4 (36.00")	1174.75 (46.25")
81H-WC30014-150	355.6 (14.00")	615.95 (24.25")	81H-WC30048-150	1219.2 (48.00")	1479.55 (58.25")
81H-WC30016-150	406.4 (16.00")	666.75 (26.25")	81H-WC30120-150	3048.0 (120.00")	3308.35 (130.25")
81H-WC30018-150	457.2 (18.00")	717.55 (28.25")			



Part Number	HI / LOW PUMPS	RETAIL:
		01-01-2025
	CBT SERIES HI / LOW PUMPS	
72H-C-6-3-2-1	PUMP CBT 6.3 cc - 2.1 cc	
72H-C-10-9-3-6	PUMP CBT 10.9 cc - 3.6 cc	
72H-C-22-9-7-6	PUMP CBT 22.9 cc - 7.6 cc	
	TECHNICAL SPECS ON CBT SERIES 210 Bar	

SHAFT	SPIGOT	MOUNT	SUCTION	PRESSURE	ROTATION
1/2" P/Key	45.25mm	4 BOLT 50.08 X 50.08	25.4mm PIPE	1/2" NPT	C/W
5/8" P/KEY	3-1/4"	2 BOLT	1" NPT	3/4" NPT	C/W

	LOG SPLITTER VALVE
72H-LS-TW-20F	LS-TW LOG SPLITTER VALVE HAND OPERATED ONE WAY WITH DETENT PRESSURE RELEASE
	LOG SPLITTER CYLINDER
82H-TKLOG518	LOG SPLITTER CYLINDER 125 X 810 X 1267 X 75
	SPECS
	LOG SPLITTER CYLINDER 25 TONS @ 210 BAR PISTON SIDE
	BORE 125mm
	CLOSED CENTRE 810mm
	OPEN CENTRE 1267mm
	STROKE 457mm
	SHAFT OD 75mm

HYDRAULIC WORKSHOP FORMULAE

CYLINDER FORCE ; IN KILOGRAMS (KG)

Kg = AREA X PRESSURE = DIAMETER (cm) X DIAMETER (cm) X PRESSURE (bar) X 3.14 ÷ 4

Kg= 10.1 cm X 10.1 cm X 180 Bar X 3.14 ÷ 4 = 14414 Kg

tons= Kg ÷ 1000

14414 Kg ÷ 1000 = 14.41 tons

CYLINDER CAPACITY FLOW RATE ; IN LITRES PER MINUTE (L/min)

L/min = AREA X SPEED = DIAMETER (cm) X DIAMETER (cm) X SPEED (m/s) X 4.71

L/min = 10.1 cm X 10.1 cm X .02 m/s X 4.71 = 9 L/min

CYLINDER SHAFT SPEED ; IN MILLIMETERS PER SEC (M/S)

m/s = FLOW RATE ÷ AREA = FLOW RATE (L/min) ÷ DIAMETER (cm) ÷ DIAMETER (cm) X 0.21

m/s = 9 L/min ÷ 10.1 cm ÷ 10.1 cm X .21 = .02 m/s = 20 mm/s

CYLINDER STROKE TIME ; IN SECONDS PER STROKE

sec = STROKE LENGTH (cm) ÷ SPEED (m/s) ÷ 100

sec = 10 cm ÷ .02 m/s ÷ 100 = 5 sec

PUMP FLOW : IN LITRES PER MINUTE (L/min)

L/min = cc / Rev X RPM ÷ 1000

L/min = 14 cc/Rev X 1450 RPM ÷ 1000 = 20.3 L/min

PUMP INPUT POWER ; IN KILOWATTS (MILLIMETERS)

Kw = FLOW X PRESSURE ÷ 600 ÷ 0.85

Kw = 20 LITRES X 180 Bar ÷ 600 ÷ 0.85 = 7 KW (KILOWATT)

MOTOR TORQUE ; IN NEWTON METER (Nm)

Nm = PRESSURE (MPa) X FLOW (L/min) X 159 ÷ RPM

Nm = 21 MPa X 9 L/min X 159 ÷ 1450 RPM = 20.72 Nm

MOTOR TORQUE ; IN NEWTON METER (Nm)

Nm = PRESSURE (MPa) X DISPLACEMENT (cm X cm) ÷ 6.28

Nm = 21 MPa X 10 cm^2 ÷ 6.28 = 33.44 Nm

PUMP SHAFT PL FACTOR ; IN TORQUE NEWTON METER (Nm)

Nm = cc / Rev X bar/ 57.2 = Nm (NEWTON METER)

Nm = 14 cc / Rev X 140 bar ÷ 57.2 = 34 Nm

CONVERSION FACTORS

1 Kw = 1.34 HP

1 HP = 0.75 Kw

1 Kw = 1000 Watts

1000 Kg = 1 TON METRIC

1 KILOGRAM = 2.2 Lbs

1 NEWTON METER (nm) = 8.9 in-Lbs.

1 NEWTON METER (nm) = 0.74 ft-Lbs.

10 NEWTON METERS (nm) = 1 Dnm

1 US Gal = 3.79 Litre

1 Imp. Gallon = 4.5 LITRE

1 cu Inch = 16.4 cc

1 Inch = 25.4mm

1 METER = 39.4 Inch

0.01 mm = 4 thousands of an Inch

1 bar = 14.5 PSI

1 MPA = 10 bar

1 bar = 100 Kpa

HYDRAULIC FORMULA CALCULATOR

CYLINDER CALCULATIONS

NOTE; Put your amounts in where the red figures are and check out the answer where the blue figures are (click enter) !

CONVERSION CYLINDER; INCH TO METRIC	2" = 5.08 cm 3" = 7.62 cm 4" = 10.16 cm 5" = 12.7
CONVERSION SHAFT; INCH TO METRIC	1.06" = 2.70 cm 1.25" = 3.2 cm 1.50" = 3.80 cm 2 = 5.08 cm
	1-1/16" = 2.70 cm 1-1/4" = 3.2 cm 1-1/2" = 3.80 cm 2"= 5.08 cm

CONVERSIONS INCH TO METRIC

TO BE USED WHEN CALCULATING INCH TO METRIC (cm) AND METRIC (cm) TO INCH

1	FORMULA				
	Metric / Inch	INCH	METRIC ANSWER	METRIC (cm)	INCH ANSWER
		8	20.32	15.24	6

FORCE

TO BE USED WHEN CALCULATING THE FORCE OF A HYDRAULIC CYLINDER (LARGE PISTON AREA)

2	FORMULA	PRESSURE	CYLINDER DIAMETER	FORCE (tons)	FORCE (kg)
	tons	ENTER (Bar)	ENTER (cm)	(click enter) !	(click enter) !
		90	16	18.0864	18086.4

SPEED

TO BE USED WHEN CALCULATING THE SPEED USING THE PISTON AREA

3	FORMULA	ENTER FLOW RATE (L/min)	ENTER PISTON DIAMETER (cm)	SPEED (m/s)	SPEED (sec/25 mm)
	m/s	12.1	12.7	0.015927845	1.569578306
				mm /sec	SECONDS / METER
				15.92784502	62.78313223

SPEED

TO BE USED WHEN CALCULATING THE SPEED USING THE SHAFT AREA

4	FORMULA	ENTER FLOW RATE (L/min)	ENTER SHAFT DIAMETER (cm)	SPEED (m/s)	SPEED (sec/25 mm)
	m/s	12.1	5.08	0.099549031	0.251132529
				mm /sec	SECONDS / METER
				99.54903137	10.04530116

TIME TAKEN TO DO FULL STROKE

TO BE USED WHEN CALCULATING THE TIME TAKEN FOR THE SHAFT TO TRAVEL OVER A SET DISTANCE

5	FORMULA	PISTON (SIDE)	SHAFT (SIDE)		
	Seconds	ENTER STROKE (mm)	ENTER STROKE (mm)		
		500	500		
		SECONDS TAKEN	SECONDS TAKEN		
		31.39156612	26.36891554		

SWEPT VOLUME OF A CYLINDER ; PISTON SIDE

TO BE USED WHEN CALCULATING THE AMOUT OF OIL NEEDED PISTON SIDE

6	FORMULA	ENTER CYL DIAMETER (cm)	ENTER STROKE (cm)	VOL OF PISTON SIDE (L)	
	liters	10.16	500	40.516048	

SWEPT VOLUME OF A CYLINDER ; SHAFT SIDE

TO BE USED WHEN CALCULATING THE AMOUT OF OIL NEEDED SHAFT SIDE

7	FORMULA	ENTER DIAM OF SHAFT (cm)	ENTER STROKE (cm)	VOLUME OF SHAFT	
	liters	6	500	14.139	

MINIMUM TANK VOLUME SIZE ;

TO BE USED WHEN CALCULATING THE MINIMUN AMOUNT OF OIL NEEDED ON A DOUBLE ACTING CYLINDER

8	FORMULA	PISTON SIDE VOLUME	SHAFT SIDE VOLUME	TANK VOLUME	
	liters	40.516048	14.139	26.377048	