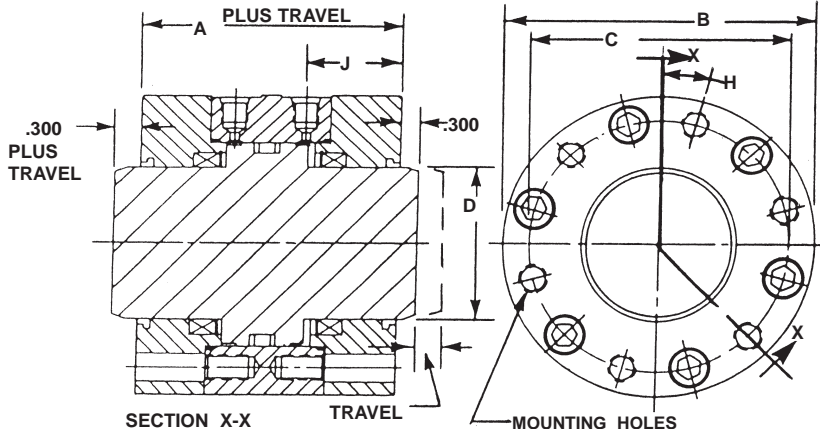


**SHORT STROKE HYDRAULIC CYLINDERS, HI-ENERGY® SERIES 3000-LS-DA-DE-C-LH-SP-FM**  
 Double Acting-Double Ended Pistons-Cylindrical Configuration-Large Hub-Side Ported-Face Mounted



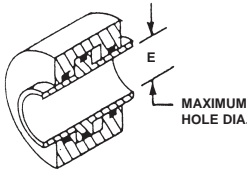
**NOTES:**  
 DIMENSIONS ARE NOMINAL IN U.S. CUSTOMARY UNITS. METRIC UNITS ARE DIMENSIONALLY EQUIVALENT EXCEPT FOR CONVERSION IN MOUNTING DETAILS WHERE FASTENERS, THREADS, CLEARANCE HOLES AND COUNTER-BORES ARE TO METRIC STANDARDS. PLEASE SEE INSIDE REAR COVER FOR A TABLE OF U.S. CUSTOMARY TO METRIC FASTENER CONVERSION, THERE IS NO ADDED COST FOR THIS METRIC MODIFICATION. ALL INQUIRIES REGARDING OTHER MODIFICATIONS TO STANDARD CYLINDERS ARE WELCOME.

**SPECIFICATIONS:**  
 SERVICE, HYDRAULIC OIL  
 M.O.P., 3000 PSI  
 TEMPERATURE, -40 TO 275 deg. F  
**MATERIALS:**  
 BODY, STAINLESS STEEL  
 COVERS, BEARING BRONZE  
 PISTON, STAINLESS STEEL  
 FASTENERS, ALLOY STEEL -I.S.H.C.S.  
 ROD SEALS, LIP STYLE  
 PISTON HEAD SEAL, "O" RING  
 BACKUP RINGS, TEFLON

NOTE: PORTS ARE S.A.E. -4 (7/16-20) SEE PORT OPTIONS.

MOUNTING HOLES  
 "F" INTERNAL THD. "G" LOCATIONS  
 FRONT & REAR FACES  
 SEE MOUNTING OPTIONS

BASIC PART NUMBER	A	O.D. B	B.C. C	DIA. D	DIA. E	THD. F	NO. G	Deg. H	J	BORE DIA. (in.)	NET PIST. AREA (sq.in.)
HS6290(-)-LS	3.726	3.000	2.345	1.125	0.750	5/16-24	4	22.5	1.338	1.750	1.18
HS6291(-)-LS	3.850	4.000	3.220	1.750	1.375	3/8-24	5	18	1.400	2.500	2.50
HS6292(-)-LS	4.100	5.000	4.157	2.500	2.000	7/16-20	6	15	1.525	3.375	4.04
HS6293(-)-LS	4.100	6.000	5.095	3.250	2.750	1/2-20	7	12.86	1.525	4.250	5.89

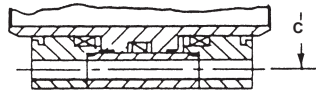


**OPTIONAL PISTON MODIFICATION:**  
 OFFERED WITH LARGE THRU HOLES IN PISTONS. ADD SUFFIX -TH TO THE COMPLETE PART NO; FOLLOWED BY THE NOMINAL HOLE DIAMETER WITH TOLERANCE.

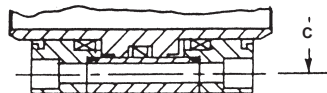
EXAMPLE = HS6290-8-LS-TH .700 +.005-.005  
 TOLERANCE  
 NOMINAL DIA.  
 THRU HOLE SUFFIX  
 BASIC PART NUMBER

ADD 5% TO THE BASE PRICE FOR ANY HOLE DIAMETER WITH A TOLERANCE OF PLUS OR MINUS .005 OR GREATER. IF CLOSER TOLERANCE OR SPECIAL BORE CONFIGURATION IS REQUIRED, PLEASE CONSULT THE FACTORY.

**OPTIONAL MOUNTINGS:**  
 SUPPLIED AT NO ADDED COST.



CLEARANCE HOLES FOR THRU BOLTS OF THE SIZE SHOWN AS "F" IN THE TABLE. ADD SUFFIX -CL TO THE BASIC PART NO.



CLEARANCE HOLES WITH COUNTER-BORES IN BOTH COVERS FOR INT. SOCK. HD. CAP SCREWS OF THE SIZE SHOWN AS "F" IN THE TABLE. ADD SUFFIX -CBC TO THE BASIC PART NO.

**OPTIONAL PORTS:**  
 AT NO ADDED COST.

U.S.A. 1/8 NPTF port. Tapered thread sealing. Add suffix -1/8 NPTF to the BASIC PART NO.

BRITISH 1/8-28 BSPT port. Tapered thread sealing. Add suffix -BSPT to the BASIC PART NO.

BRITISH 1/8-28 BSPP port. Str. Thd. with "O" ring seal. Add suffix -BSPP to the BASIC PART NO.

METRIC M10 X 1 port per Spec. ISO-6149 - Str. Thd. with captive "O" ring seal. Add suffix -M10 to the BASIC PART NO.

**HOW TO ORDER BASIC CYLINDERS**  
 A BASIC PART NUMBER CONSISTS OF A TWO LETTERS & FOUR DIGITS FOLLOWED BY A DASH NUMBER TO INDICATE PISTON TRAVEL IN INCREMENTS OF 1/10 (0.100) INCH FOLLOWED BY THE SUFFIX -LS. TRAVEL TO -40 (4.000) IS STANDARD.

EXAMPLE = HS6290 - 8 - LS  
 BASIC PART NUMBER  
 LIP SEAL SUFFIX  
 PISTON TRAVEL OF 8/10 INCH NUMBER FROM THE TABLE

**HOW TO ORDER CYLINDERS WITH OPTIONS**  
 ADD OPTIONS TO THE BASIC PART NUMBER AS SUFFIXES IN ANY ORDER.

EXAMPLE = HS6290 - 8 - LS - CL  
 THRU MOUNTING HOLES  
 BASIC PART NUMBER

**HOW TO ORDER METRIC VERSIONS**  
 A BASIC PART NUMBER FOR METRIC VERSIONS CONSIST OF TWO LETTERS AND FOUR DIGITS FROM THE TABLE WITH A PREFIX "M" AND A SUFFIX TO INDICATE PISTON TRAVEL IN MILLIMETERS FOLLOWED BY THE -LS SUFFIX. SEE INSIDE REAR COVER FOR TRAVEL AND THREAD CONVERSIONS. THERE IS NO ADDED COST FOR THIS METRIC VERSION.

EXAMPLE = M - HS6290 - 10 - LS  
 Metric Prefix  
 LIP SEAL SUFFIX  
 Travel in Millimeters  
 From the Table

**HOW TO ORDER SERVICE KITS**  
 SPECIFY THE COMPLETE PART NUMBER FOLLOWED BY THE SUFFIX -SK.

EXAMPLE = HS6290 - 8 - LS - SK  
 SERVICE KIT ONLY  
 BASIC PART NUMBER

