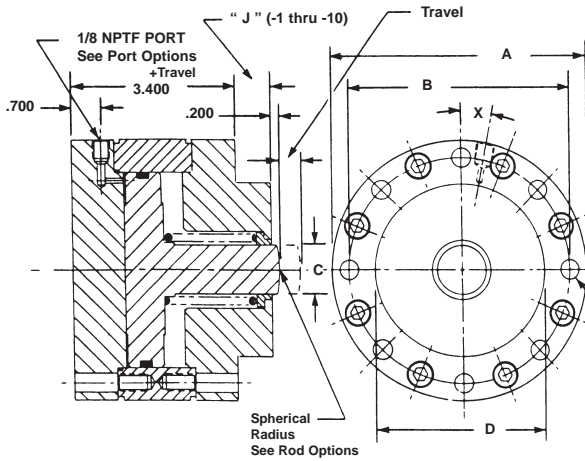


SHORT STROKE HYDRAULIC CYLINDERS, HI-ENERGY® SERIES 1500-LS-SP-FM

Single Acting-Spring Retracted-Single Ended Pistons-Side Ported-Either Face Mounted



Mounting Holes
 "E" Internal Threads
 "F" Locations, Equally Spaced On
 Front & Rear Faces.
 See Mounting Options.

SPECIFICATIONS:

SERVICE: HYDRAULIC OIL
 M.O.P. 1500 PSI.
 TEMPERATURE: -40 TO + 200 DEG. F.

MATERIALS:

COVER, BODY & PISTON, STAINLESS STEEL
 BUSHINGS, SINTERED BRONZE
 SPRING OIL TEMPERED STEEL WIRE
 SEALS, "O" RINGS
 FASTENERS, ALLOY STEEL I.S.H.C.S

NOTES:

Dimensions are nominal in U.S. Customary units.
 Metric cylinders are dimensionally equivalent except for
 conversion in mounting details where threads, fasteners,
 clearance holes & counter-bores are to metric standards.
 See inside rear cover for a table of metric fastener and
 travel conversion.
 There is no added cost for this metric modification.

BASIC PART NUMBER	O.D. A	BOLT CIRCLE B	ROD DIA. C	BOSS DIA. D	THD. E	NO. F	THD. G	WRENCH FLATS H	BOSS LENGTH J	PISTON DEG. X	PISTON DIA. (IN.)	PISTON AREA (SQ. IN.)
S-2361 - ()	3.000	2.375	0.750	1.750	1/4-28	4	1/2-20	0.625	0.725	22-1/2	1.750	2.405
S-2362 - ()	4.000	3.188	0.875	2.500	5/16-24	5	5/8-18	0.750	0.725	18	2.500	4.908
S-2363 - ()	5.000	4.188	1.125	3.250	3/8-24	6	3/4-16	0.875	0.875	15	3.500	9.621
S-2364 - ()	6.000	5.188	1.125	4.000	3/8-24	8	3/4-16	0.875	0.875	11-1/4	4.500	15.904

Nom. Force (lbs) = Pressure (psi) times Area (sq. in)

International Port Options:



U.S.A. - S.A.E. - 4 (7/16-20 Thd.)
 Straight thread with "O" ring sealing.
 Add suffix -SAE to the BASIC PART NUMBER.



BRITISH 1/8 - 28 BSPT port.
 Tapered thread sealing.
 Add suffix -BSPT to the BASIC PART NUMBER.



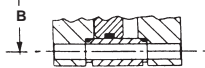
BRITISH 1/8-28 BSPP port.
 Straight thread with "O" ring sealing.
 Add suffix -BSPP to the BASIC PART NUMBER.



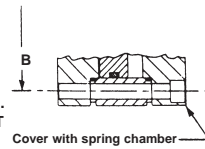
METRIC M10 X 1 port per ISO6149
 Straight thread with captive "O" ring sealing.
 Add suffix -M10 to the BASIC PART NUMBER.

OPTIONAL PORTS ARE FURNISHED AT NO ADDED COST.

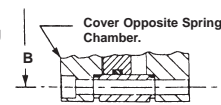
Mounting Options:



Clearance holes for thru bolts of the size shown as "E" in the table.
 Add suffix -CL to the BASIC PART NUMBER.



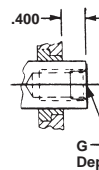
Clearance holes with counterbores in the cover on the side with the spring chamber for internal socket head cap screws of size shown as "E" in the table.
 Add suffix -CBS to the BASIC PART NUMBER.



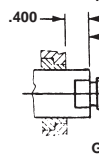
Clearance holes with counterbores in the cover on the side opposite the spring chamber for internal socket head cap screws of size shown as "E" in the table.
 Add suffix -CBO to the BASIC PART NUMBER.

OPTIONAL MOUNTING IS SUPPLIED AT NO ADDED COST

Rod End Options:



Rod end with internal thread and wrench flats.
 Add suffix -ITW to the BASIC PART NUMBER.
 Add 5% to the BASE PRICE.



Rod end with external thread and wrench flats.
 Add suffix -ETW to the BASIC PART NUMBER.
 Add 8% to the BASE PRICE.

SPRING FORCE FOR BASIC CYLINDERS IS SUFFICIENT TO FULLY RETRACT PISTONS. HIGHER SPRING FORCE MAY BE REQUIRED FOR RETRACTION WHERE ADDITIONAL LOAD IS ATTACHED TO THREADED ROD ENDS.

Ordering Information:

HOW TO ORDER BASIC CYLINDERS:

A BASIC PART NUMBER consists of the letter and four digits followed by a dash number to indicate piston travel in increments of 1/10 (0.100) inch. Travel to -10 (1.000) is standard. Consult Factory for longer travel.

EXAMPLE = S2361 - 3
 S2361 - BASIC PART NUMBER
 3 - Indicates piston travel Of 3/10 (0.300) inch.
 Letter & four digits from the table.

HOW TO ORDER A METRIC CYLINDER VERSION

A BASIC PART NUMBER FOR THE METRIC VERSION consists of a letter and four digits from the table with a prefix "M" and a suffix to indicate travel in millimeters. See inside rear cover for thread and travel conversion.

EXAMPLE = M-S2361- 10mm
 M - Metric prefix.
 S2361 - From table.
 10mm - Travel in millimeters.

HOW TO ORDER SERVICE KITS

Specify the complete part number followed by the suffix -SK.

EXAMPLE = S2361 - 3 - SK
 S2361 - 3 - Complete part number.
 SK - Indicates service kit only.

HOW TO ORDER CYLINDERS WITH OPTIONS:

Add options to the BASIC PART NUMBER as suffixes in any order.

EXAMPLE = S2361 - 3 - CL
 CL - Clearance holes for mounting.
 S2361 - 3 - BASIC PART NUMBER.

HOW TO ORDER CYLINDERS FOR OPERATING AT TEMPERATURES TO 275 deg. F.

Upgrading springs to stainless steel and converting seals to a fluorocarbon compound will permit operating at higher temperatures. Please contact the Factory.