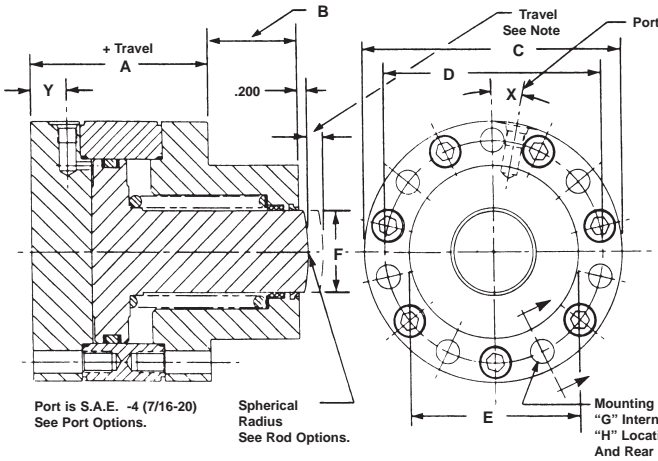


SHORT STROKE HYDRAULIC CYLINDERS, HI-ENERGY® SERIES 3000-LS-SP-FM

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



SPECIFICATIONS:

SERVICE, HYDRAULIC OIL
M.O.P., 3000 PSI
TEMPERATURE, -40 TO 275 deg. F

MATERIALS:

COVERS & BODY, STAINLESS STEEL.
BUSHING, SINTERED BRONZE.
PISTONS, STAINLESS STEEL.
SPRING, OIL TEMPERED STEEL.
FASTENERS, ALLOY STEEL, I.S.H.C.S.
PISTON HEAD SEAL, "O"RING
BACKUP RINGS, TEFLON

NOTES:

Dimensions are nominal in U.S. Customary units.

Metric versions are dimensionally equivalent except for conversion in mounting details where fasteners, threads, clearance holes & 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 modification to standard cylinders are welcome.

BASIC PART NUMBER	A	B	O.D. C	B.C. D	DIA. E	DIA. F	THD. G	NO. H	THD. J	W.F. K	DEG. X	Y	BORE DIA. (IN.)	BORE AREA (SQ. IN.)
HS3658 (-)	3.125	1.075	2.250	1.657	1.125	0.500	5/16-24	2	5/16-24	0.375	90	0.575	1.125	0.99
HS3659 (-)	3.125	1.075	2.500	1.907	1.375	0.688	5/16-24	2	3/8-24	0.500	90	0.575	1.375	1.48
HS3660 (-)	3.250	1.013	3.000	2.345	1.750	0.750	5/16-24	4	1/2-20	0.625	22-1/2	0.638	1.750	2.40
HS3661 (-)	3.375	1.200	3.500	2.782	2.125	1.000	3/8-24	4	3/4-16	0.875	22-1/2	0.700	2.125	3.54
HS3662 (-)	3.375	1.200	4.000	3.220	2.500	1.000	3/8-24	5	3/4-16	0.875	18	0.700	2.500	4.90
HS3663 (-)	3.625	1.325	4.500	3.657	2.875	1.188	7/16-20	5	7/8-14	1.000	18	0.825	2.875	6.49
HS3664 (-)	3.625	2.075	5.000	4.157	3.375	1.875	7/16-20	6	1-1/4-12	1.500	15	0.825	3.375	8.94
HS3665 (-)	3.625	2.075	5.500	4.595	3.625	1.875	1/2-20	6	1-1/4-12	1.500	15	0.825	3.750	11.04
HS3666 (-)	3.625	2.075	6.000	5.095	4.000	1.875	1/2-20	7	1-1/4-12	1.500	13	0.825	4.250	14.18

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

International Port Options:

- 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 NUMBER.
- BRITISH 1/8-28 BSPP port. Str. thd. with "O" ring sealing. Add suffix -BSPP to the BASIC PART NUMBER.
- METRIC M10 X 1 port per Spec. ISO-6149. Str. thd. with captive "O" ring sealing. Add suffix -M10 to the BASIC PART NUMBER.

Mounting Options:

- Clearance holes for thru bolts of the size shown as "G" in the table. Add suffix -CL to the BASIC PART NUMBER.
- Clearance holes and counter-bores in the cover on the side with the spring chamber for int. Sock Hd. Cap Screws of the size shown as "G" in the table. Add suffix -CBS to the BASIC PART NUMBER.
- Clearance holes with counter-bores in the cover on the side opposite to the spring chamber for Int. Sock. Hd. Cap Screws of the size shown as "G" in the table. Add suffix -CBO to the Basic PART NUMBER.

Rod End Options:

- Rod end with internal thread and wrench flats. Add suffix -ITW to the BASIC PART NUMBER. ADD5% 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 where additional load is attached to threaded rod ends. Please consult the Factory.

OPTIONAL PORTS ARE FURNISHED AT NO ADDED COST.

OPTIONAL MOUNTING IS SUPPLIED AT NO ADDED COST

Ordering Information:

HOW TO ORDER BASIC CYLINDERS

A BASIC PART NUMBER consists of two letters & 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. Please consult the Factory for longer travels.

EXAMPLE = HS3658-3
 HS3658 - BASIC PART NUMBER
 -3 - Indicates piston travel of 3/10 (0.300) inch
 Two letters & four digits from the table.

HOW TO ORDER CYLINDERS WITH OPTIONS

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

EXAMPLE = HS3658-3-CL
 HS3658 - BASIC PART NUMBER
 -3 - Indicates piston travel of 3/10 (0.300) inch
 -CL - Clearance holes for mounting

HOW TO ORDER METRIC VERSIONS

A BASIC PART NUMBER FOR METRIC MODIFICATIONS consists of two letters & four digits from the table with a prefix "M" and a suffix to indicate piston travel in millimeters. Please see inside rear cover for travel and thread conversion.

EXAMPLE = M HS3658 - 10 (mm)
 M - Metric prefix
 HS3658 - From the table
 -10 - Travel in millimeters

HOW TO ORDER SERVICE KITS

Specify the COMPLETE PART NO. followed by the suffix -SK.

EXAMPLE = HS3658-3-SK
 HS3658-3 - BASIC PART NUMBER
 -SK - Indicates service kit only

