

WEIR CONCEPTS INC.

PRODUCT GUIDE

- WC-YS HYDRAULIC ACTUATOR SERIES -



EXPECT QUALITY AND RELIABILITY

using our brand name YS SERIES HYDRAULIC ACTUATORS



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MADE IN ALBERTA, CANADA PRODUCTS

Manufactured and assembled at our Edmonton based facility

DETAILS ARE THE DIFFERENCE BETWEEN ORDINARY AND EXCELLENCE



SYMMETRIC OR CANTED YOKE

MODULAR DESIGN

YS SERIES HYDRAULIC ACTUATOR

Weir Concepts YS Series Actuators

- Pneumatic and hydraulic options
- Creative modular design for maximizing efficiency, reducing wear and extending life

Operating Ranges

Torque Outputs (guaranteed)

Double Acting: 12,581-6,000,000 lb.in.

(1420-678,000Nm)

Operating Pressure:

Hydraulic - to 5000 psi (345 Bar)

Operating Temperatures:

Standard: -40°C to 150°C

Optional High / Low - temperatures available

**Solutions for your
company needs**

Weir Concepts at work for you

Compact Wear Resistant Corrosion Resistant

The WC YS Series actuators optimize the center of gravity, being significantly lighter and smaller than other actuators with equal or greater torque output—approximately 1/3 lighter and 1/3 smaller

The wear resistant piston rod and guide block connection along with superior surface finishes and self-lubricating bearings maximize the direct transfer of input energy to valve stem. Efficiency is further enhanced by the tension-loaded spring which minimizes radial loads on the piston rod.

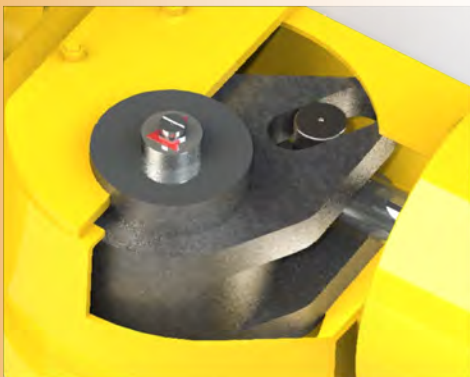
Featuring protective internal and external coatings, the WC YS Series is a reliable product in harsh environments.

WEIR CONCEPTS OFFERS TECHNICAL CONSULTING AND PROVIDES A TOTAL END TO END SOLUTION.



YS SERIES HYDRAULIC ACTUATOR - DESIGN FEATURES & CONSTRUCTION - OFFER UNIQUE BENEFITS

BODY



1. Internal O-rings to ensure water ingress protection.
2. NAMUR standard for all sizes for assembly of switch boxes and positioners.
3. Threaded parts in front and the back side of the body for easy assembly of a control panel.

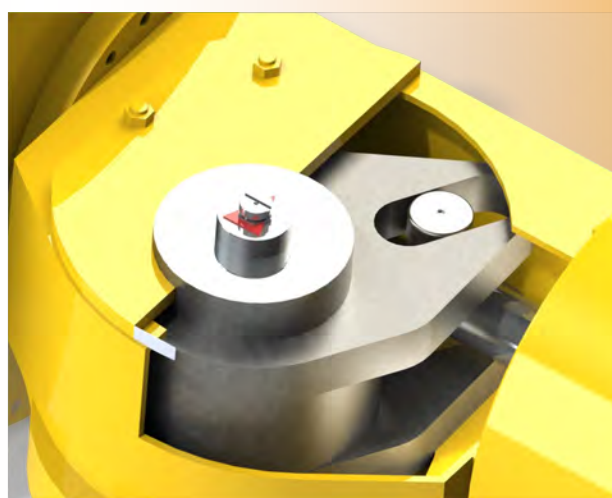
4. Round roller is used, reducing the friction between the yoke arm and pin, minimizing the wear.

5. Replaceable bearings protect the sliding and rotating components, suitable for either dry or lubricated working conditions.

6. PTFE thrust bar prevents yoke pin axial movement, transferring axial loads directly to the drive module case.

7. Connects the piston rod with the guide block, compensating for side load deflection and reducing wear on rod, bearings and seals.

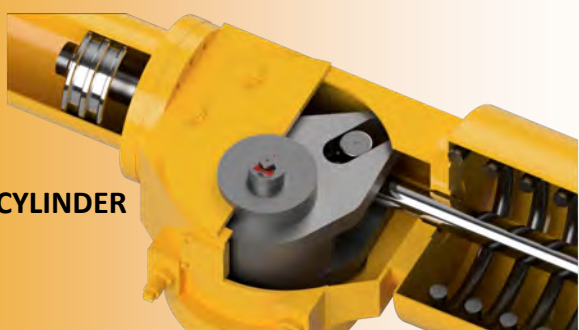
INTERNAL BODY PARTS



8. The inner surface of cylinder is coated by PTFE, to prevent resistance and self-lubricating.

9. Piston seals, double sealing, with O-ring and dynamic ring to prevent metal to metal contact between the piston and the cylinder.

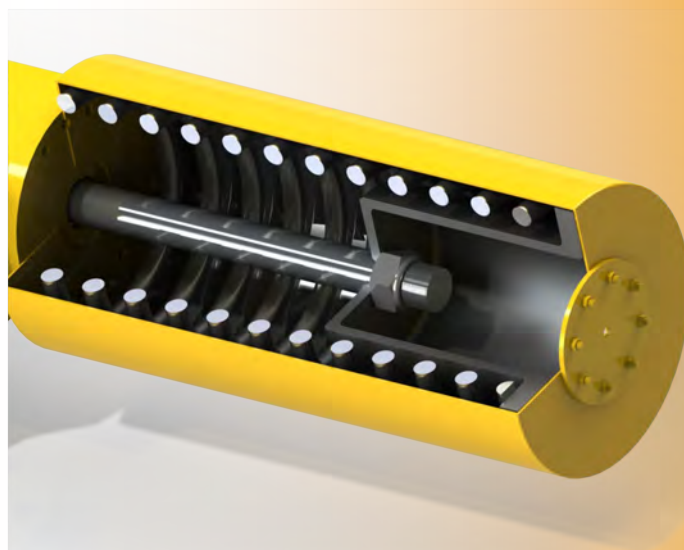
CYLINDER



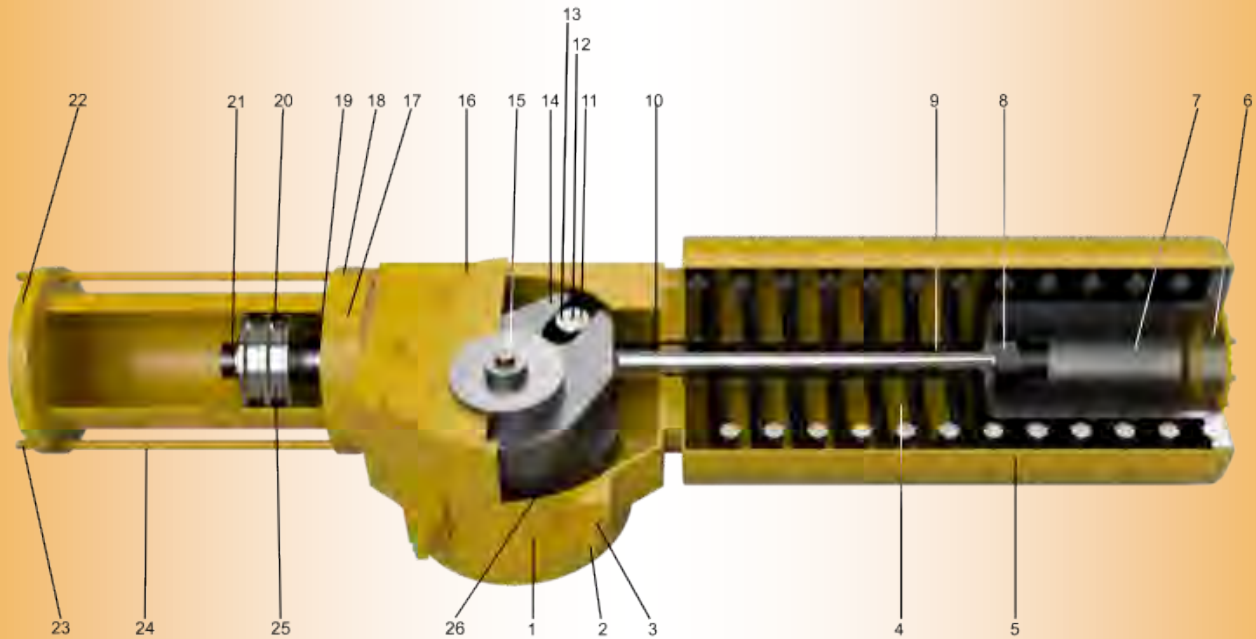
10. Spring module - safe spring lock, prevents spring module detachment from the drive module.

11. Spring module - internal hydraulic cylinder for manual pump override.

SPRING MODULE

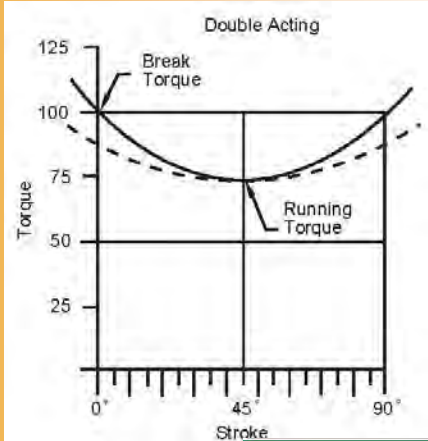


YS SERIES HYDRAULIC ACTUATOR - PARTS AND MATERIAL



No.	Name	Material
1	Body	Ductile Iron
2	Adjust Stud	Alloy Steel
3	Nut	2H
4	Spring	Alloy Steel
5	Spring Case	Carbon Steel
6	Cover Plate	Carbon Steel
7	Spring Seat	Carbon Steel
8	Nut	2H
9	Tension Rod	Alloy Steel
10	Sliding Bearing	Metal +TFE
11	Roller	Alloy Steel
12	Slider Bearing	Metal +TFE
13	Pin	Alloy Steel
14	Yoke	Carbon Steel
15	Drive Shaft	Alloy Steel
16	Body Cap	Ductile Iron
17	Bolting	Carbon Steel
18	Adapter plate	Ductile Iron
19	O ring	NBR
20	Piston	Ductile Iron
21	Nut	2H
22	End Cap	Ductile Iron
23	Nut	2H
24	Body Screw	Alloy Steel
25	Oring seals	NBR
26	Guide Block	Ductile Iron

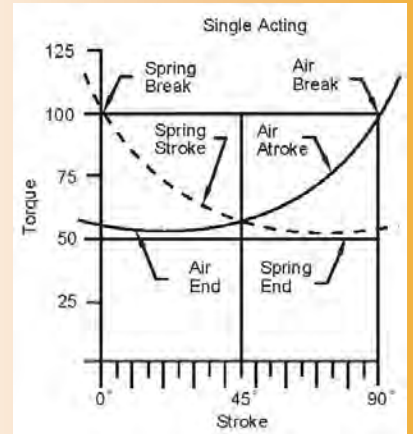
YS SERIES HYDRAULIC ACTUATOR - OUTPUT TORQUE (Table: double acting) Unit: in-lb



MODEL	HYDRAULIC TORQUE					
	1000psig		1450psig		1960psig	
	START/END	RUN	START/END	RUN	START/END	RUN
YS10-40DA	2788	1673	3983	2390	5372	3222
YS12-40DA	3478	2089	4974	2983	6709	4027
YS12-50DA	6691	4018	9568	5744		
YS14-60DA	12072	7240	17250	10346	23286	13966
YS14-70DA	17648	10585	25216	15126		
YS16-70DA	20773	12462	29685	17808	40067	24039
YS16-80DA	28818	17285	41173	24702		
YS25-90DA	42820	25685	61176	36704	82586	49546
YS25-100DA	55043	34261	78638	47183		
YS25-110DA	68558	41138				
YS30-110DA	79223	47537	113183	67911	152790	91676
YS30-120DA	97313	58379	139027	83409	187679	112599
YS30-130DA	116971	70177	167110	100261		
YS35-130DA	138867	83320	198388	119033	267822	160693
YS35-150DA	194919	116944	278461			
YS35-170DA	258980	155383				
YS40-170DA	291684	175005	416700	250015	562542	337521
YS40-190DA	379191	227516	541707	325024		
YS40-220DA	528688	317209				
YS48-190DA	435747	261441	622496	373491	840365	504216
YS48-220DA	611619	366968	873741	524245	1179550	707729
YS48-245DA	777835	466697	1111197	666714		
YS48-270DA	961929	577154				
YS60-245DA	1002306	601379	1431866	859120	1933019	1159805
YS60-270DA	1250834	750495	1786912	1072138	243465	
YS60-320DA	1820270	10827929	2600398	1560237		

YS SERIES HYDRAULIC ACTUATOR - OUTPUT TORQUE (Table: single acting) Unit: in-lb

MODEL	SPRING TORQUE			HYDRAULIC TORQUE								
				1000psig			1450psig			1980psig		
	START	RUN	END	START	RUN	END	START	RUN	END	START	RUN	END
YS10-40-S1	1655	805	1044	1735	859	1124	2930	1575	2319	4319	2407	3717
YS10-40-S2	2593	1310	1779							3593	1912	2726
YS10-50-S2	2593	1310	1779	3576	1894	2761	5877	3275	5054			
YS10-50-S3	4328	2142	2823				4824	2443	3319	7505	4054	6001
YS10-60-S3	4328	2142	2823	5673	2947	4169						
YS12-50-S1	4655	2363	3222							8904	3062	6727
YS12-60-S1	4655	2363	3222	6611	3310	4434	11170	6045	8992			
YS12-50-S2	7240	3602	4788							8134	4142	5673
YS12-60-S2	7240	3602	4788				10400	5496	7939			
YS12-70-S2	7240	3602	4788	10488	5558	8028						
YS14-60-S1	9550	4806	5965				11293	5797	8028	17330	9417	14081
YS14-70-S1	9550	4806	5965	11692	6036	8435						
YS14-60-S2	13072	6656	8390							14825	7505	10214
YS14-70-S2	13072	6656	8390	15621	7983	11001	16754	8665	12134			
YS14-70-S3	20277	10285	12904							20852	10249	13329
YS14-80-S3	20277	10285	12904				21215	10470	13692			
YS14-100-S3	20277	10285	12904	26340	13542	18808						
YS16-70-S1	22968	11594	14418							25348	18631	16852
YS16-80-S1	22968	11594	14418				26446	13320	17949			
YS16-90-S1	22968	11594	14418	23207	11373	14710						
YS16-80-S2	28269	14489	18454							36784	18896	26207
YS16-90-S2	28269	14489	18454				35394	18064	24817			
YS16-100-S2	28269	14489	18454	29322	14418	18737						
YS16-80-S3	34146	17294	21649							33588	16321	20817
YS16-100-S3	34146	17294	21649				46767	24216	33978			
YS16-110-S3	34146	17294	21649	37385	18595	24614						
YS25-90-S1	43855	21826	26543							56999	29632	41784
YS25-100-S1	43855	21826	26543				53051	27269	37837			
YS25-110-S1	43855	21826	26543	43059	21658	25782						
YS25-100-S2	55990	27588	32978							72797	37890	53511
YS25-110-S2	55990	27588	32978				64575	32960	45289			
YS25-120-S2	55990	27588	32978	49989	24207	30703						
YS25-100-S3	67513	33190	41775							63035	30508	38651
YS25-120-S3	67513	33190	41775				75948	38253	51573			
YS25-140-S3	67513	33190	41775	73682	36890	49307						
YS30-110-S1	82975	41704	51546							102349	51617	69708
YS30-120-S1	82975	41704	51546				88578	4328	55936			
YS30-140-S1	82975	41704	51546	87764	42864	55122						
YS30-120-S2	101128	50812	62769							123414	62256	84099
YS30-130-S2	101128	50812	62769				102845	52564	63521			
YS30-150-S2	101128	50812	62769	96747	46254	57432						
YS30-130-S3	124618	61530	73850							150046	76913	106323
YS30-150-S3	124618	61530	73850				154471	79568	110749			
YS30-170-S3	124618	61530	73850	135796	68354	92074						
YS35-130-S1	160950	79391	95163							171960	87268	118953
YS35-150-S1	160950	79391	95163				182599	93649	129583			
YS35-170-S1	160950	79391	95163	163118	81966	110103						
YS35-150-S2	211213	104190	124875							256830	133566	188396
YS35-170-S2	211213	104190	124875				250873	129999	182448			
YS35-190-S2	211213	104190	124875	211948	106633	143514						
YS35-170-S3	256254	126875	153011							339849	175554	245350
YS35-190-S3	256254	126875	153011				313306	159631	218807			
YS35-220-S3	256254	126875	153011	294534	148373	200035						



YS SERIES HYDRAULIC ACTUATOR - OUTPUT TORQUE (Table: single acting) Unit: in-lb

MODEL	SPRING TORQUE			HYDRAULIC TORQUE								
	START	RUN	END	1000psig			1450psig			1960psig		
				START	RUN	END	START	RUN	END	START	RUN	END
YS40-170-S1	313536	156675	191874							368402	184980	248200
YS40-190-S1	313536	156675	191874				347567	172482	227366			
YS40-220-S1	313536	156675	191874	334548	164667	214346						
YS40-190-S2	422550	211381	259326							490417	245527	328016
YS40-220-S2	422550	211381	259326				514314	259901	351975			
YS40-245-S2	422550	211381	259326	429082	208726	266680						
YS48-190-S1	507570	253927	311545							540123	264025	339964
YS48-220-S1	507570	253927	311545				573499	284054	373340			
YS48-245-S1	507570	253927	311545	477593	226507	277434						
YS48-220-S2	616026	307898	377199							787341	406814	568711
YS48-245-S2	616026	307898	377199				718995	365799	500357			
YS48-270-S2	616026	307898	377199	569728	276239	351090						
YS48-245-S3	731776	369455	460024							1029788	538539	765347
YS48-270-S3	731776	369455	460024				903860	462980	639419			
YS48-290-S3	731776	369455	460024	651748	311713	387307						
YS60-220-S1	848702	422718	514907							1012361	520439	722430
YS60-245-S1	848702	422718	514907				902391	452881	607238			
YS60-270-S1	848702	422718	514907	762939	370782	472999						
YS60-245-S2	994544	505207	635162							1294742	662864	914808
YS60-270-S2	994544	505207	635162				1148626	575189	794970			
YS60-320-S2	994544	505207	635162	1181984	595210	802050						

Hydraulic Pressure

Up to 1950psi (135 bar)

Torque Output

Double acting up to 2,598,429ibf-in (293,807 N.m)

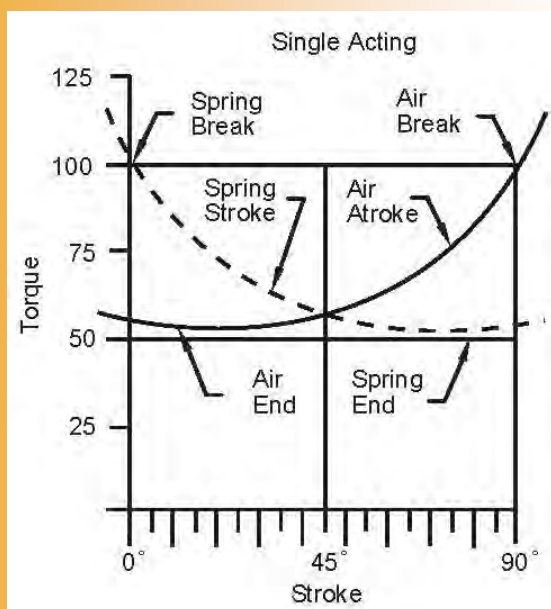
Single acting up to 634,680ibf-in (71,764 N.m)

Temperature Ranges

Standard -20°C / -80°C (-4°F / -176°F)

Low Temperature -40°C / -80°C (-40°F / -176°F)

High Temperature -20°C / -120°C (-4°F / -392°F)



YS SERIES HYDRAULIC ACTUATOR - SPRING RETURN ACTING DIMENSION Unit:mm

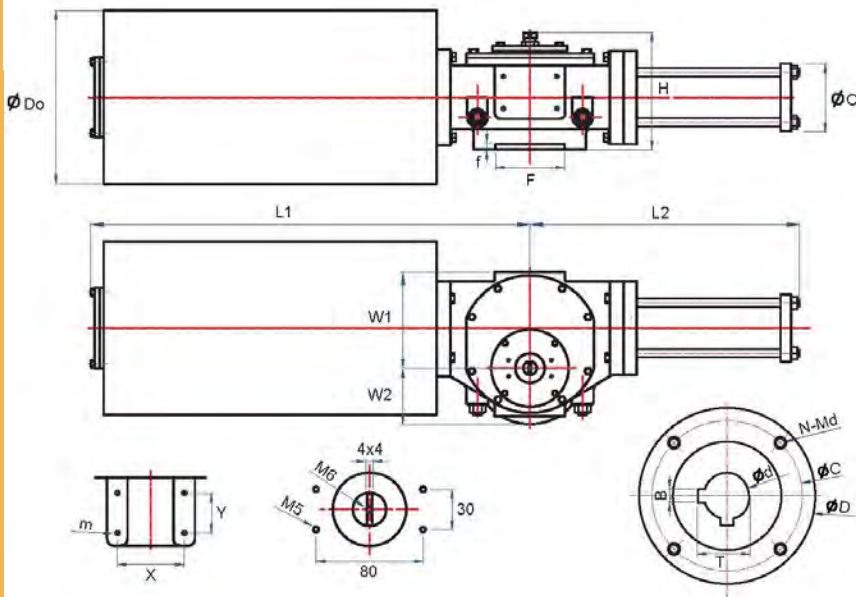
Model	D	C	d	f	F	N	Md	T	B	m	X	Y	L1	L2	H	W1	W2
YS10	□100	102	28			4	M10	31.3	8				465	345	184	123	82
YS12	□115	125	36			4	M12	39.3	10				515	398	190	143	87
YS14	□130	140	48	4	100	4	M16	51.8	14	M6	100	60	619	455	201	155	89
YS16	210	165	60	4	130	4	M20	64.4	18	M6	100	60	775	530	217	180	105
YS25	300	254	72	5	200	8	M16	76.9	20	M6	100	60	940	610	250	222	150
YS30	350	298	98	5	230	8	M20	104.4	28	M8	140	70	1165	730	302	262	175
YS35	415	356	160	6	260	8	M30	169.4	40	M8	140	70	1511	855	357	320	208
YS40	475	406	180	6	300	8	M36	190.4	45	M8	140	70	1760	990	392	377	238
YS48	560	483	200	8	370	12	M36	210.4	45	M8	140	70	2305	1150	465	450	280
YS60	686	603	280	8	470	20	M36	292.4	63	M8	140	70	3100	1420	465	545	343

Model	Do	O	Port
YS10-40-S1	168	85	1/4"
YS10-50-S2	168	92	1/4"
YS10-60-S3	219	100	1/4"
YS12-50-S1	219	92	1/4"
YS12-60-S1	219	100	1/4"
YS12-50-S2	273	92	1/4"
YS12-60-S2	273	100	1/4"
YS12-70-S2	273	110	1/4"
YS14-60-S1	273	100	1/4"
YS14-70-S1	273	110	1/4"
YS14-60-S2	273	100	1/4"
YS14-70-S2	273	110	1/4"
YS14-70-S3	325	110	1/4"
YS14-80-S3	325	130	1/4"
YS14-100-S3	325	145	3/8"

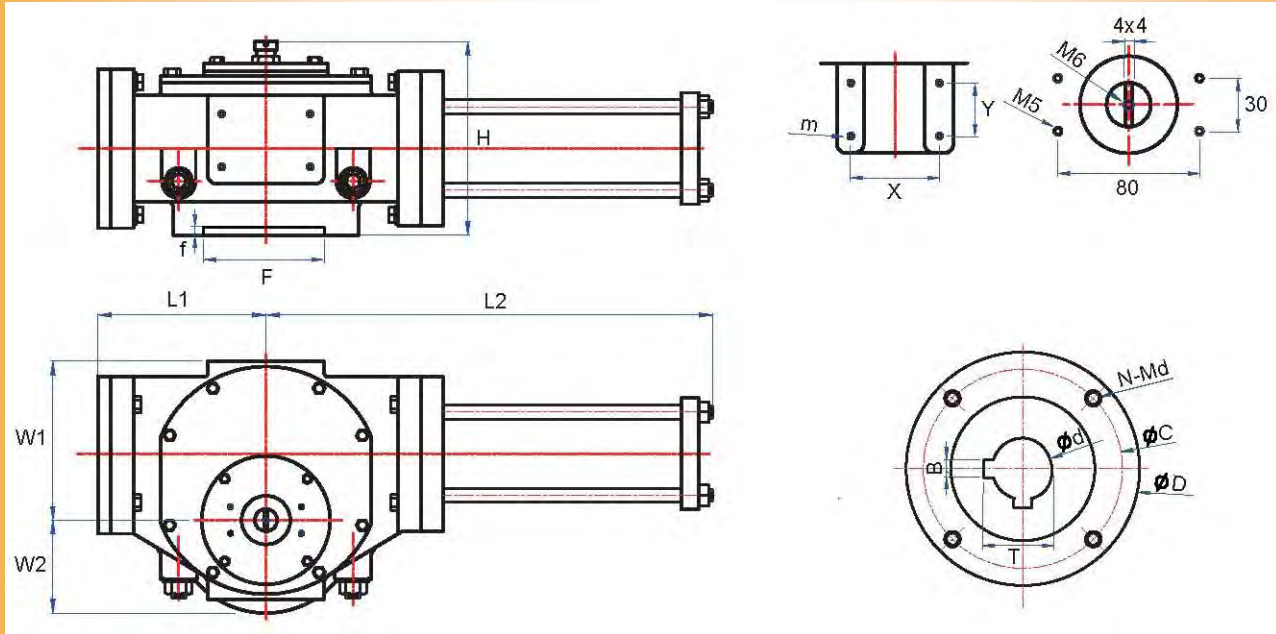
Model	Do	O	Port
YS16-70-S1	273	110	1/4"
YS16-80-S1	273	130	1/4"
YS16-90-S1	273	138	3/8"
YS16-80-S2	325	130	1/4"
YS16-90-S2	325	138	3/8"
YS16-100-S2	325	145	3/8"
YS16-80-S3	325	130	1/4"
YS16-100-S3	325	145	3/8"
YS16-110-S3	273	155	3/8"
YS25-90-S1	325	110	3/8"
YS25-100-S1	325	130	3/8"
YS25-110-S1	325	138	3/8"
YS25-100-S2	377	130	3/8"
YS25-110-S2	377	138	3/8"
YS25-120-S2	377	145	3/8"
YS25-100-S3	426	130	3/8"
YS25-120-S3	426	145	3/8"
YS25-140-S3	426	155	3/8"

Model	Do	O	Port
YS30-110-S1	426	155	3/8"
YS30-120-S1	426	170	3/8"
YS30-140-S1	426	185	3/8"
YS30-120-S2	508	170	3/8"
YS30-130-S2	508	180	3/8"
YS30-150-S2	508	195	3/8"
YS30-130-S3	508	180	3/8"
YS30-150-S3	508	195	3/8"
YS30-170-S3	508	270	1/2"
YS35-130-S1	508	180	3/8"
YS35-150-S1	508	195	3/8"
YS35-170-S1	508	270	1/2"
YS35-150-S2	630	195	1/2"
YS35-170-S2	630	270	1/2"
YS35-190-S2	630	290	1/2"
YS35-170-S3	630	270	1/2"
YS35-190-S3	630	290	1/2"
YS35-220-S3	630	320	1/2"

Model	Do	O	Port
YS40-170-S1	630	270	1/2"
YS40-190-S1	630	290	1/2"
YS40-220-S1	630	320	1/2"
YS40-190-S2	730	290	1/2"
YS40-220-S2	730	320	1/2"
YS40-245-S2	730	345	1/2"
YS48-190-S1	730	290	1/2"
YS48-220-S1	730	320	1/2"
YS48-245-S1	730	345	1/2"
YS48-220-S2	730	320	1/2"
YS48-245-S2	730	345	1/2"
YS48-270-S2	730	370	1/2"
YS48-245-S3	730	345	1/2"
YS48-270-S3	730	370	1/2"
YS48-290-S3	730	390	1/2"
YS60-220-S1	730	345	1/2"
YS60-245-S1	730	370	1/2"
YS60-270-S1	730	420	1/2"
YS60-245-S2	730	320	1/2"
YS60-270-S2	730	345	1/2"
YS60-320-S2	730	370	1/2"



YS SERIES HYDRAULIC ACTUATOR - DOUBLE ACTING DIMENSION Unit:mm

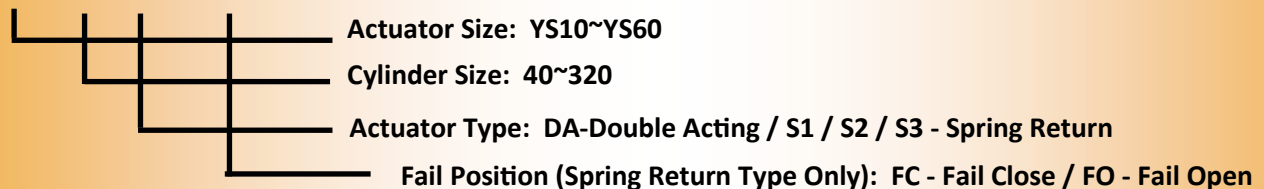


Mode	D	C	d	f	F	N	Md	T	B	m	X	Y	L1	L2	H	W1	W2	Port
YS10	□100	102	28			4	M10	31.3	8				124	345	184	123	82	1/4"
YS12	□115	125	36			4	M12	39.3	10				140	398	190	143	87	1/4"
YS14	□130	140	48	4	100	4	M16	51.8	14	M6	100	60	170	455	201	155	89	1/4"
YS16	210	165	60	4	130	4	M20	64.4	18	M6	100	60	194	530	217	180	105	1/4"
YS25	300	254	72	5	200	8	M16	76.9	20	M6	100	60	226	610	250	222	150	3/8"
YS30	350	298	98	5	230	8	M20	104.4	28	M8	140	70	275	730	302	262	175	3/8"
YS35	415	356	160	6	260	8	M30	169.4	40	M8	140	70	332	855	357	320	208	3/8"
YS40	475	406	180	6	300	8	M36	190.4	45	M8	140	70	402	990	392	377	238	1/2"
YS48	560	483	200	8	370	12	M36	210.4	45	M8	140	70	475	1150	465	450	280	1/2"
YS60	686	603	280	8	470	20	M36	292.4	63	M8	140	70	568	1420	465	545	343	1/2"

*YS35-170-DA Pressure Port 1/2"

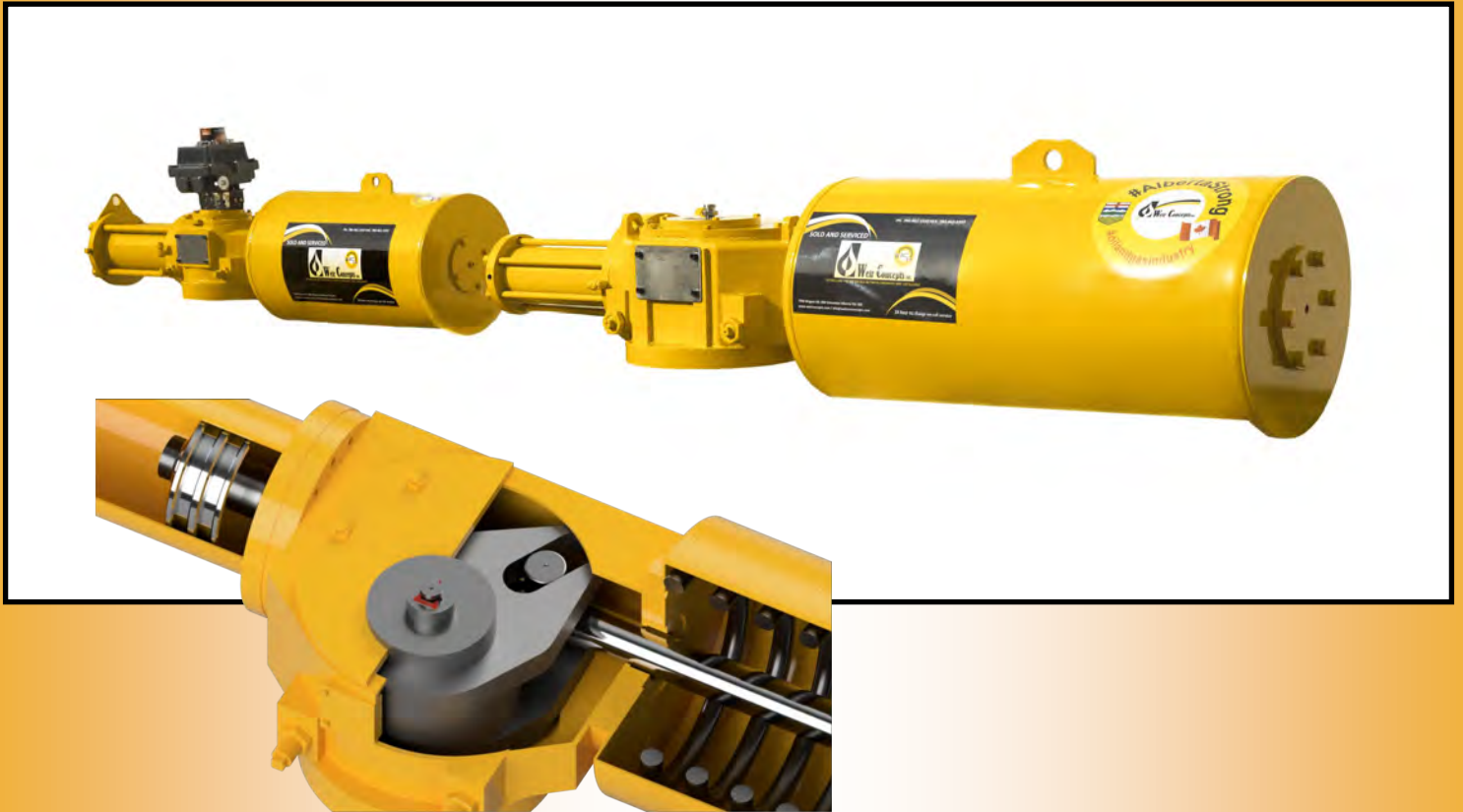
Order Information

YS14 - 60 - S1 - FC



PRODUCT GUIDE

WEIR CONCEPTS WC-YS SERIES HYDRAULIC ACTUATOR



SOLUTIONS FOR YOUR COMPANY NEEDS

- HELP DESK -

FOR YOUR SUPPORT AND SERVICE

24 hours a day, 7 days a week

NO CHARGE ON CALLS SERVICE

We offer technical assistance, product knowledge, and reliable trouble shooting

Brochures/Maintenance info available online www.weirconcepts.com

HELP DESK EXPERTISE PROVIDED AT WEIR CONCEPTS

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Version 3.0

