

Sarangamath Hydraulics Pvt Ltd.

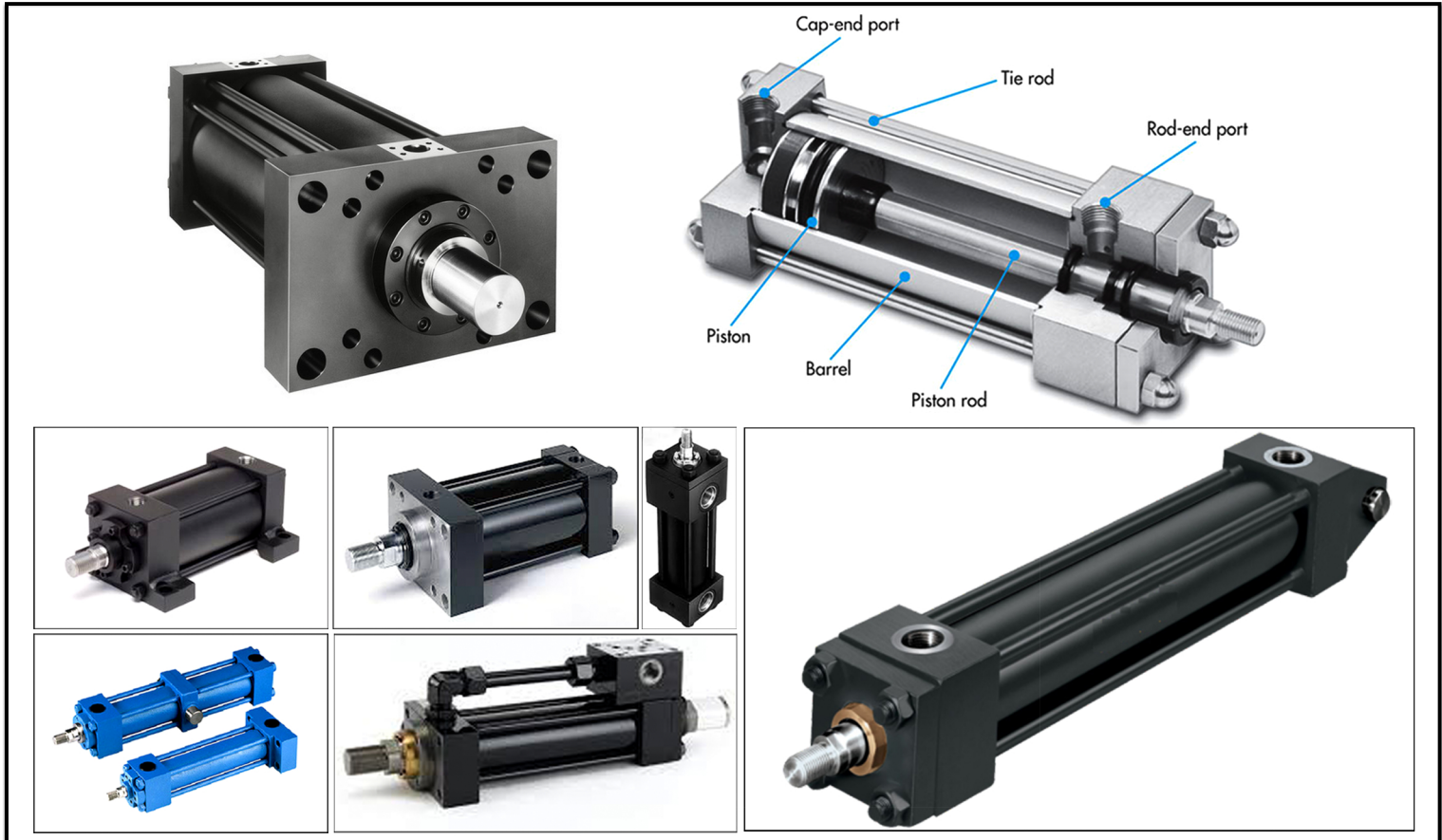
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Series - TR210



HYDRAULIC CYLINDER - PRESSURE 210 BAR

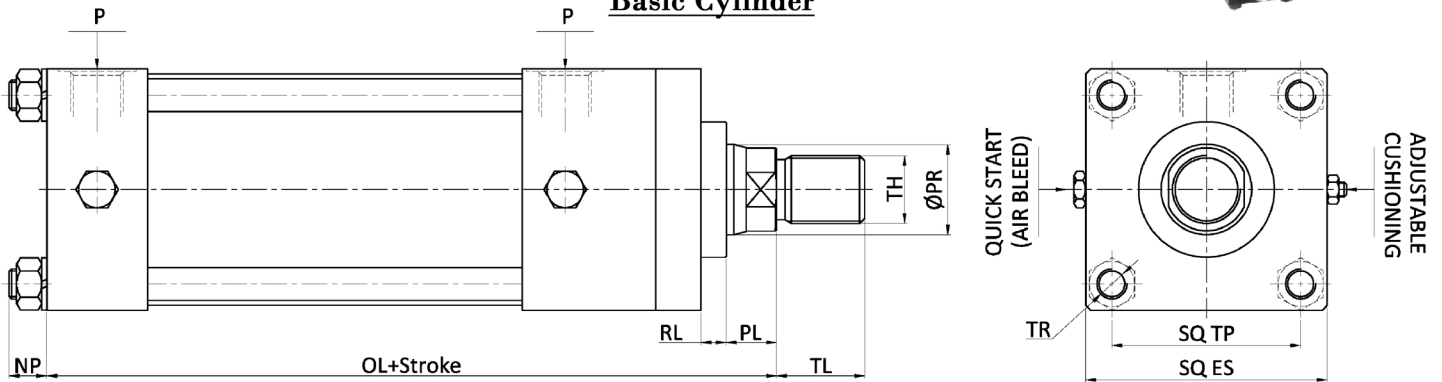
- * Cylinder Bore Dia. 25 to 250 mm.
- * Rated Pressure 210 Kg/Cm²
- * Standard construction, square head, tie rod design
- * Tie-rod type, Medium Pressure hydraulic cylinders, available with a wide range of mounting arrangements.
- * Strokes available in any practical stroke length
- * With/ Without Cushioning.
- * Temperature range: -20°C to 100°C.
(Optional sealing systems for temperatures up to 180°C)
- * We offer a wide range of custom built Tie-Rod Hydraulic Cylinders

Hydraulic Cylinders - TR210 Series

- * Rated Pressure 210 kg/Cm²
- * Test Pressure 315 kg/Cm²



Basic Cylinder



BORE DIA	PR DIA	ES (SQ)	TH	P (BSP)	OL	RL	PL	TL	TR	NP	TP	CUSHIONING LENGTH
25	16	46	M12x1.25	1/4"BSP	153	4	10	16	M8x1.25	12	32	12
32	22	56	M16x1.5	3/8"BSP	163	6	12	18	M8x1.25	12	38	15
40	25/28	66	M20x1.5/M22x1.5	3/8"BSP	192	8	14	25/28	M10x1.5	14	46	20
50	28/36	76	M22x1.5/M27x2	1/2"BSP	215	10	16	28/36	M12x1.75	16	54	20
63	36/45	85	M27x2/M33x2	1/2"BSP	231	12	18	36/45	M12x1.75	16	60	20
80	45/56	110	M33x2/M42x2	3/4"BSP	259	15	20	45/56	M16x2	20	75	25
100	56/70	130	M42x2/M48x2	3/4"BSP	286	20	25	56/63	M16x2	20	96	25
125	70/90	170	M48x2/M64x3	1"BSP	323	24	30	63/85	M24x2	30	124	30
160	90/110	220	M63x3/M80x3	1"BSP	360	28	35	85/95	M30x2	38	156	30
200	110/140	254	M80x3/M100x3	1 1/2"BSP	407	32	40	95/112	M30x2	38	192	35
250	140/160	310	M100x3/M125x4	1 1/2"BSP	459	35	45	112/125	M30x2	38	240	35

Material Specification

- * **BARREL:** Made from cold drawn seamless tubes and honed to a surface finish of 0.4 micron and higher.
- * **PISTON ROD:** Made from medium carbon steel, accurately ground, hard chrome plated super finished.
- * **COVER PLATES:** Fine machined from steel, and constructed with a sturdy design to withstand high pressure loads.
- * **GLAND:** Phosphor bronze / Cast Iron bush inserted for smooth operation of the piston rod and for provided suitable guiding action.
- * **TIE RODS:** Made from high tensile steel rod tightened with hexagonal nut for easy maintenance.
- * **MOUNTING:** Various type of mounting are available according to the requirement ensuring complete interchangeability with other ISO standard cylinder.
- * **CUSHIONING:** Self aligning cushioning boss ensures alignment of the rod movement inside the cushioning chamber, providing accurate damping action at end of stroke.
- * **CUSHIONING SCREW:** For fine adjustment of cushioning movement.
- * **AIR BLEED:** Screw provided for releasing the air trapped in the cylinder.

SEALLING ELEMENTS:

- * **PISTON SEAL:** Provided with one turcon Glydring for low friction, Stick / Slip free movement along with two turcite Slydring for conforms to ISO 7245/1.
- * **GLAND SEAL:** Polyurethane RU3 U-Cup seal is used, which has primary and secondary lip for maximum flexibility. Conforms to ISO 5597.
- * **WIPER SEAL:** DA-22 Double Acting Polyurethane scraper is used conforming to ISO 6195 Type C groove dimensions. This wears resistant seal has a scraper lip which scrapes off the dirt completely from the Piston Rod, but leaves a residual oil film which is required for proper lubrication.
- * **STATIC SEALS:** Nitrile Rubber 'O' ring are used for static sealing purposes. They are used for the end seals, piston locking and cushioning seals.



STANDARD MOUNTINGS

FRONT FLANGE (FF)		DIMENSION DETAILS										
	BORE DIA	25	32	40	50	63	80	100	125	160	200	250
	F1	85	96	110	130	147	180	196	250	303	375	470
	F2	66	76	90	105	122	150	164	210	253	315	394
	F3	30	38	42	54	66	84	100	130	156	192	252
	FH	9	9	11	14	14	18	18	26	33	33	33
	MF	12	12	14	16	18	20	22	25	28	30	34
	RL	4	6	8	10	12	15	20	24	28	32	35
	RD	30	38	42	50	60	74	88	110	134	166	186
	PR	14	18	22	26	30	35	45	54	63	72	80
	DR	165	175	206	231	249	279	308	348	394	437	493
	SL	6	6	6	6	6	6	6	6	8	8	8
CD	16	16	25	32	36	42	50	60	70	80	100	
CT	10	10	14	16	18	22	30	36	40	40	45	
CH	12	12	16	20	20	30	40	50	60	70	90	
CP	22	22	26	32	36	42	58	60	70	86	110	
RC	175	185	218	247	267	301	344	383	430	493	569	
EP	15	16	19	21	23	25	27	30	32	35	40	
FP	20	22	25	27	30	32	35	37	40	42	45	
MA	92	95	112	125	130	147	157	177	203	228	260	
MI	10	12	16	20	26	30	32	36	40	46	56	
MH	9	9	11	14	17	17	22	22	26	34	40	
ML	94	106	122	136	170	190	222	262	316	386	486	
LP	76	88	104	114	140	158	184	224	266	326	410	
MD	26	32	37	42	47	60	70	92	116	134	163	
MB	49	53	61	70	78	88	102	117	131	145	159	
TT	30	30	32	40	40	50	50	50	75	95	110	
TP	20	20	25	35	35	45	45	45	50	76	90	
PD	90	110	120	155	165	210	230	275	335	422	530	
TD	50	60	70	85	95	120	140	185	235	270	330	
TC	TO BE SPECIFIED BY CUSTOMER											



PISTON AREA, ACTION FORCE, VELOCITIES & FLOWS

BORE DIA (MM)	ØPR IN (MM)	PISTON AREA (MM ²)	ROD AREA (MM ²)	ANNULUR AREA (MM ²)	ACTION FORCE AT PRESSURE						PISTON VELOCITY In m/s at FLOW=1ltr/min		REQUISITE FLOW in ltr/min at VELOCITY=0.1m/s	
					70 kg/cm ²		160 kg/cm ²		210 kg/cm ²		Piston	Rod	Piston	Rod
					Force(Piston)	Force(Rod)	Force(Piston)	Force(Rod)	Force(Piston)	Force(Rod)				
25	16	490.94	201.09	289.85	344	203	786	464	1031	609	0.03395	0.05750	2.95	1.74
32	22	804.35	380.18	424.17	563	297	1287	679	1689	891	0.02072	0.03929	4.83	2.55
40	25	1256.8	490.94	765.86	880	536	2011	1225	2639	1608	0.01326	0.02176	7.54	4.60
	28		615.83	640.97		449		1026		1346		0.02600		3.85
50	28	1963.75	615.83	1347.92	1375	944	3142	2157	4124	2831	0.00849	0.01236	11.78	8.09
	36		1018.01	945.74		662		1513		1986		0.01762		5.67
63	36	3117.6495	1018.01	2099.64	2182	1470	4988	3359	6547	4409	0.00535	0.00794	18.71	12.60
	45		1590.64	1527.01		1069		2443		3207		0.01091		9.16
80	45	5027.2	1590.64	3436.56	3519	2406	8044	5499	10557	7217	0.00332	0.00485	30.16	20.62
	56		2463.33	2563.87		1795		4102		5384		0.00650		15.38
100	56	7855	2463.33	5391.67	5499	3774	12568	8627	16496	11323	0.00212	0.00309	47.13	32.35
	70		3848.95	4006.05		2804		6410		8413		0.00416		24.04
125	70	12273.438	3848.95	8424.49	8591	5897	19638	13479	25774	17691	0.00136	0.00198	73.64	50.55
	90		6362.55	5910.89		4138		9457		12413		0.00282		35.47
160	90	20108.8	6362.55	13746.25	14076	9622	32174	21994	42228	28867	0.00083	0.00121	120.65	82.48
	110		9504.55	10604.25		7423		16967		22269		0.00157		63.63
200	110	31420	9504.55	21915.45	21994	15341	50272	35065	65982	46022	0.00053	0.00076	188.52	131.49
	140		15395.80	16024.20		11217		25639		33651		0.00104		96.15
250	140	49093.75	15395.80	33697.95	34366	23589	78550	53917	103097	70766	0.00034	0.00049	294.56	202.19
	160		20108.80	28984.95		20289		46376		60868		0.00058		173.91

ORDERING CODE

TR210 - 25 / 16 - 100 - 01 - FF - CB - (X)

Series	Bore Size	Piston Rod Size	Stroke	Functions	Mountings	Cushioning	Accessories
Rated Pressure Upto 210 Bar	Ø25-Ø250 mm Standard Sizes	Ø16-Ø140 mm Standard Sizes	To be specified in MM	1.Double Acting 2.Single Acting 3.Double Ended (Rod at Both Ends) 4.Spring Return (Single Acting)	FF - Front Flange RF - Rear Flange RC - Rear Clevis RE - Rear Eye FL - Foot Lug CT - Central Trunnion	CB - Cushioned at Both Ends CR - Cushioned at Rear End CF - Cushioned at Front End NC - Non Cushioned	PRE - Piston Rod End PRB - Piston Rod Bracket Special :- * Read Switch Cylinder * Swing Cylinder

WE ALSO OFFER

- * Design and Reverse Engineering of Hydraulic Cylinder.
- * Capability in Handling Special Electrohydraulic Actuators (With Valves and Electronic Sectors).
- * Also carry out Servicing of Pneumatic and Hydro-Pneumatic cylinders.