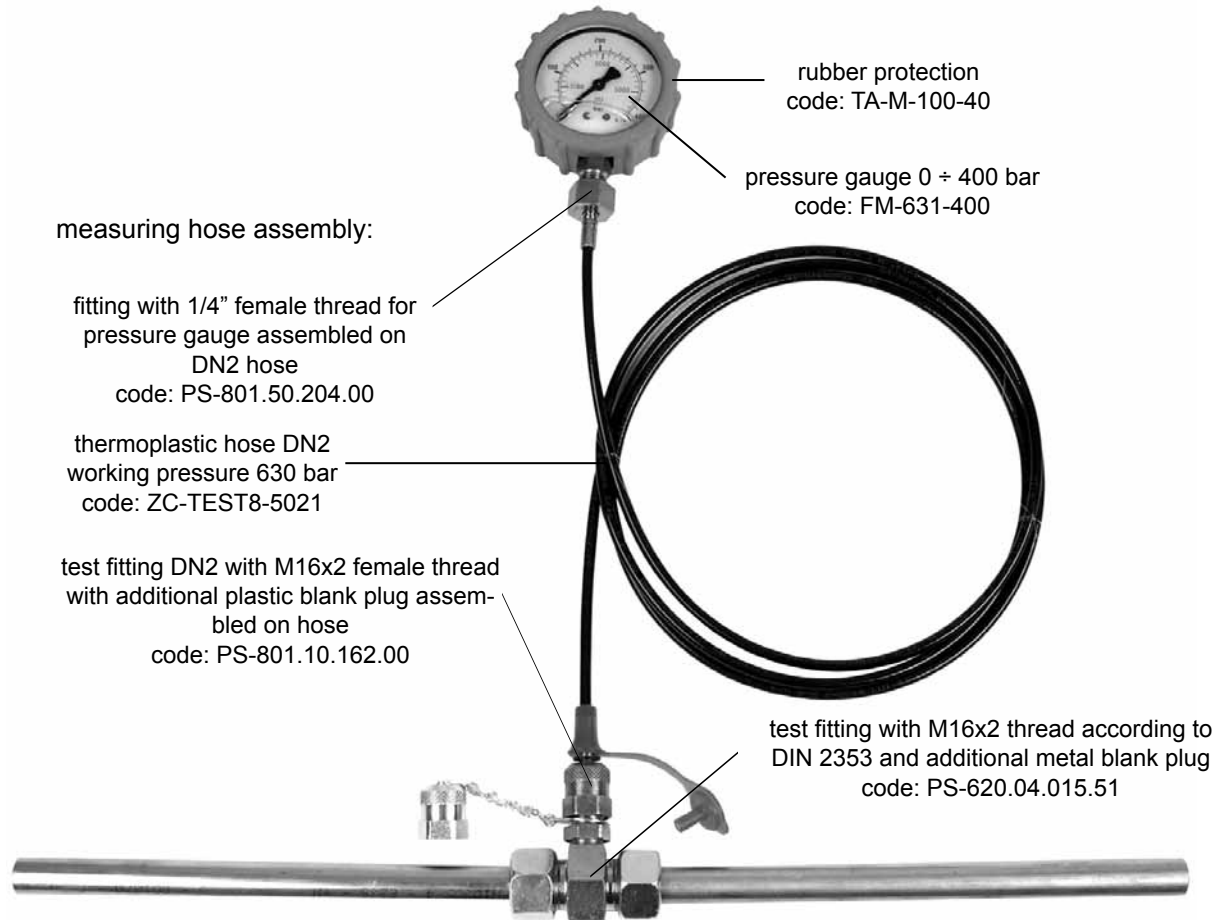


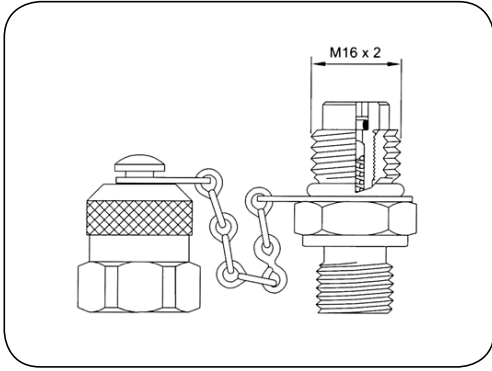
MEASURING SYSTEMS - measuring couplings

MCS (Mini Control System) allows to build simple measuring sets to check pressure in hydraulic systems. The measurement can be performed even if the hydraulic system is working at the maximum pressure (up to 630 bar). Connecting elements are designed to allow connection without leaks and without additional tools. To be connected permanently or for the time of measurement. A wide range of measuring connectors, adapters, hoses and other accessories helps to manage any connection.

Example of a simple measuring set connected to hydraulic installation



MEASURING SYSTEMS - measuring couplings



MCS miniature couplings 620 series

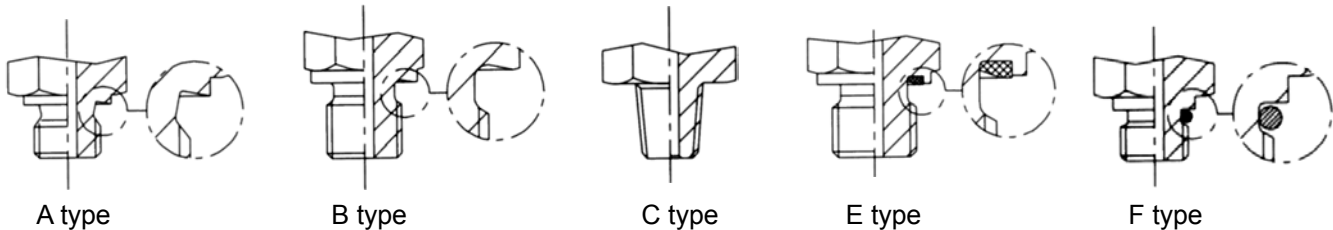
Material: Galvanized steel
(AISI 316 available on request)

Working press.: Up to 630 bar

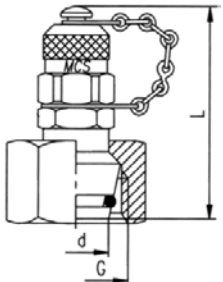
Working temp.: From -30°C up to +120°C (NBR seal)
From -20°C up to +200°C (Viton seal)
From -30°C up to +100°C (with PVC blank cap)

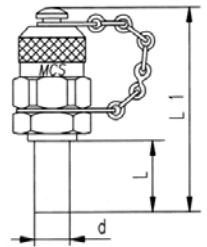
description	press. [bar]	code (with PVC cap)	code (with steel cap)	type of sealing	L [mm]	J [mm]	thread size G	
Test fitting M16x2 	400	PS-620-01-010-50	PS-620-01-010-51	A	38	8	M10x1	
		PS-620-01-204-50	PS-620-01-204-51			12	1/4" BSP	
		PS-620-01-012-10	PS-620-01-012-11	B		8	1/8" BSP	
		PS-620-01-202-10	PS-620-01-202-11			12	1/4" BSP	
		PS-620-01-010-30	PS-620-01-010-31	C		36	8	M10x1
		PS-620-01-202-30	PS-620-01-202-31				12	1/8" BSPT
	PS-620-01-204-30	PS-620-01-204-31	12		1/4" BSPT			
	PS-620-01-206-30	PS-620-01-206-31	9.5		3/8" BSPT			
	PS-620-01-302-30	PS-620-01-302-31	14		1/8"-27 NPTF			
	PS-620-01-304-30	PS-620-01-304-31	14.2		1/4"-18 NPTF			
	PS-620-01-306-30	PS-620-01-306-31	E	38	14.2	3/8"-18 NPTF		
	PS-620-01-010-20	PS-620-01-010-21			8	M10x1		
	PS-620-01-012-20	PS-620-01-012-21			12	M12x1.5		
	PS-620-01-014-20	PS-620-01-014-21			12	M14x1.5		
	PS-620-01-016-20	PS-620-01-016-21			8	M16x1.5		
	PS-620-01-202-20	PS-620-01-202-21			8	1/8" BSP		
	PS-620-01-204-20	PS-620-01-204-21	12	1/4" BSP				
	PS-620-01-206-20	PS-620-01-206-21		3/8" BSP				
	PS-620-01-008-00	PS-620-01-008-01	630	F	60° cone	8.5	M8x1	
	PS-620-01-010-00	PS-620-01-010-01				9.5	M10x1	
	PS-620-01-014-00	PS-620-01-014-01				12	M14x1.5	
	PS-620-01-404-00	PS-620-01-404-01				11	7/16"-20 UNF	
	PS-620-01-405-00	PS-620-01-405-01				12	1/2"-20 UNF	
	PS-620-01-406-00	PS-620-01-406-01				12	9/16"-18 UNF	
	PS-620-01-408-00	PS-620-01-408-01				14	3/4"-16 UNF	
	PS-620-01-204-00	PS-620-01-204-01				12	1/4" JIS	
	PS-620-01-204-80	PS-620-01-204-81					1/4" BSP	

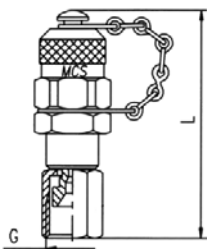
Types of connection seals



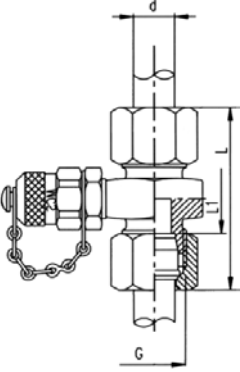
MEASURING SYSTEMS - measuring couplings

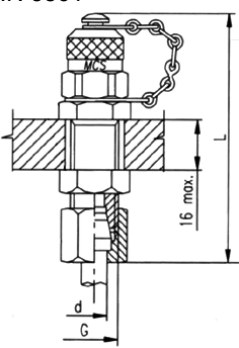
description	press. [bar]	code (with PVC cap)	code (with steel cap)	series	pipe d diameter [mm]	L [mm]	thread size G
Test fitting M16x2 according to DIN 3865. 24° cone 	315	PS-620-02-006-60	PS-620-02-006-61	L	6	65	M12x1.5
		PS-620-02-008-60	PS-620-02-008-61		8	66.5	M14x1.5
		PS-620-02-010-60	PS-620-02-010-61		10	67	M16x1.5
		PS-620-02-012-60	PS-620-02-012-61		12	58	M18x1.5
		PS-620-02-015-60	PS-620-02-015-61		15	60	M22x1.5
		PS-620-02-018-60	PS-620-02-018-61		18	61	M26x1.5
	160	PS-620-02-022-60	PS-620-02-022-61	L	22	59.5	M30x2
		PS-620-02-028-60	PS-620-02-028-61		28	66	M36x2
		PS-620-02-035-60	PS-620-02-035-61		35	71.5	M45x2
		PS-620-02-042-60	PS-620-02-042-61		42	74.5	M52x2
	630	PS-620-02-106-60	PS-620-02-106-61	S	6	65	M14x1.5
		PS-620-02-108-60	PS-620-02-108-61		8	66.5	M16x1.5
		PS-620-02-110-60	PS-620-02-110-61		10	67	M18x1.5
		PS-620-02-112-60	PS-620-02-112-61		12	58	M20x1.5
		PS-620-02-114-60	PS-620-02-114-61		14	58.5	M22x1.5
	400	PS-620-02-116-60	PS-620-02-116-61	S	16	61.5	M24x1.5
		PS-620-02-120-60	PS-620-02-120-61		20	60.5	M30x2
		PS-620-02-125-60	PS-620-02-125-61		25	65.5	M36x2
	315	PS-620-02-130-60	PS-620-02-130-61	S	30	67.5	M42x2
		PS-620-02-138-60	PS-620-02-138-61		38	69.5	M52x2

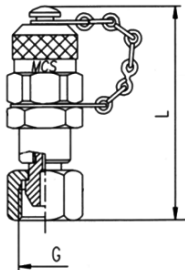
description	press. [bar]	code (with PVC cap)	code (with steel cap)	pipe d diameter [mm]	L [mm]	L1 [mm]
Test fitting M16x2 and pipe connection 	630	PS-620-03-006-50	PS-620-03-006-51	6	20	57
		PS-620-03-008-50	PS-620-03-008-51	8		
		PS-620-03-010-50	PS-620-03-010-51	10		
		PS-620-03-012-50	PS-620-03-012-51	12	26	60

description	press. [bar]	code (with PVC cap)	code (with steel cap)	L [mm]	thread size G
Test fitting M16x2 	450	PS-620-05-404-00	PS-620-05-404-01	64	7/16"-20 UNF
	420	PS-620-05-405-00	PS-620-05-405-01	67	1/2"-20 UNF
	350	PS-620-05-406-00	PS-620-05-406-01	69	9/16"-18 UNF
		PS-620-05-408-00	PS-620-05-408-01	71	3/4"-16 UNF

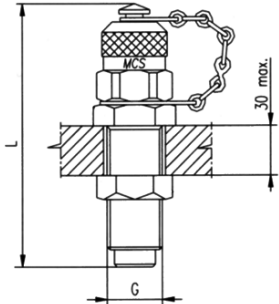
MEASURING SYSTEMS - measuring couplings

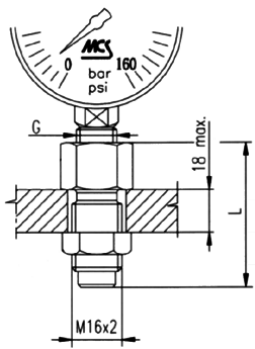
description	press. [bar]	code (with PVC cap)	code (with steel cap)	series	pipe d diameter [mm]	L [mm]	L1 [mm]	thread size G
Test fitting M16x2 and pipe connection according to DIN 2353 	315	PS-620-04-006-50	PS-620-04-006-51	L	6	54	20	M12x1.5
		PS-620-04-008-50	PS-620-04-008-51		8			M14x1.5
		PS-620-04-010-50	PS-620-04-010-51		10	59	M16x1.5	
		PS-620-04-012-50	PS-620-04-012-51		12		M18x1.5	
		PS-620-04-015-50	PS-620-04-015-51		15	64	M22x1.5	
		PS-620-04-018-50	PS-620-04-018-51		18		M26x1.5	
	160	PS-620-04-022-50	PS-620-04-022-51	22	71	25	M30x2	
		PS-620-04-028-50	PS-620-04-028-51	28	69		M36x2	
		PS-620-04-035-50	PS-620-04-035-51	35	80	25	M45x2	
		PS-620-04-042-50	PS-620-04-042-51	42		27	M52x2	
	630	PS-620-04-106-50	PS-620-04-106-51	6	58	24	M14x1.5	
		PS-620-04-108-50	PS-620-04-108-51	8	59		M16x1.5	
		PS-620-04-110-50	PS-620-04-110-51	10	63		M18x1.5	
		PS-620-04-112-50	PS-620-04-112-51	12			M20x1.5	
		PS-620-04-114-50	PS-620-04-114-51	14	71		M22x1.5	
	400	PS-620-04-116-50	PS-620-04-116-51	16	71	25.5	M24x1.5	
		PS-620-04-120-50	PS-620-04-120-51	20	78		M30x2	
		PS-620-04-125-50	PS-620-04-125-51	25	82		M36x2	
	315	PS-620-04-130-50	PS-620-04-130-51	30	91	27	M42x2	
	315	PS-620-04-138-50	PS-620-04-138-51	38	100	29	M52x2	

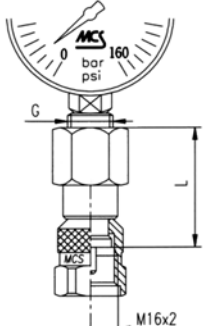
description	press. [bar]	code (with PVC cap)	code (with steel cap)	pipe d diameter [mm]	L [mm]	thread size G
Test fitting M16x2 for bulk-head connector according to DIN 3861 	630	PS-620-06-108-50	PS-620-06-108-51	8	82	M16x1.5
		PS-620-06-110-50	PS-620-06-110-51	10	84	M18x1.5

description	press. [bar]	code (with PVC cap)	code (with steel cap)	L [mm]	thread size G
Test fitting with M16x2 and female thread according to BS 5200 	630	PS-620-07-204-80	PS-620-07-204-81	62	1/4" BSP

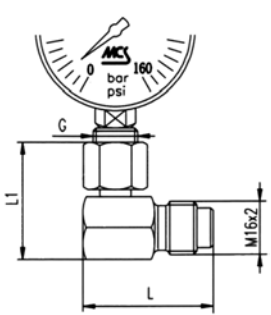
MEASURING SYSTEMS - measuring couplings

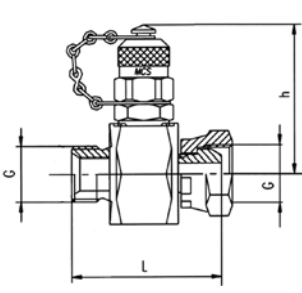
description	press. [bar]	code (with PVC cap)	code (with steel cap)	L [mm]	thread size G
Bulkhead test fitting M16x2 	630	PS-620-11-000-70	PS-620-11-000-71	81	M16x2


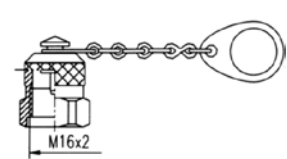
description	press. [bar]	code (free flow)	code (with pressure damper)	L [mm]	thread size G
Pressure gauge M16x2 (bulkhead) 	630	PS-620-08-204-00	PS-620-08-204-00-1	50	1/4" BSP
		PS-620-08-208-00	PS-620-08-208-00-1	58	1/2" BSP
		PS-620-08-304-00	PS-620-08-304-00-1	50	1/4" NPTF
		PS-620-08-308-00	PS-620-08-308-00-1	58	1/2" NPTF

description	press. [bar]	code (free flow)	code (with pressure damper)	L [mm]	thread size G
Pressure gauge M16x2 	630	PS-620-09-204-00	PS-620-09-204-00-1	34	1/4" BSP
		PS-620-09-208-00	PS-620-09-208-00-1	39	1/2" BSP
		PS-620-09-304-00	PS-620-09-304-00-1	34	1/4" NPTF

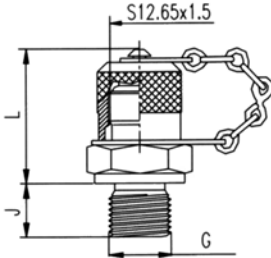
MEASURING SYSTEMS - measuring couplings

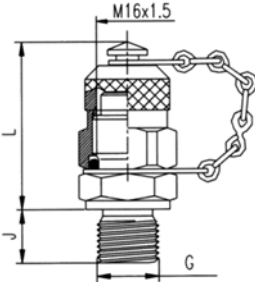
description	press. [bar]	code (free flow)	code (with pressure damper)	L [mm]	L1 [mm]	thread size G
90° pressure gauge M16x2 swivel connection 	630	PS-620-10-204-00	PS-620-10-204-00-1	40	40	1/4" BSP
		PS-620-10-208-00	PS-620-10-208-00-1	40	42.7	1/2" BSP

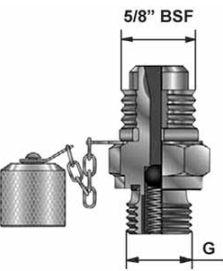
description	press. [bar]	code (with PVC cap)	code (with steel cap)	L [mm]	h [mm]		thread size G
					PVC	met.	
Test fitting M16x2 	400	PS-620-16-204-80	PS-620-16-204-81	53	55	51.5	1/4" BSP
		PS-620-16-206-80	PS-620-16-206-81	60			3/8" BSP
		PS-620-16-208-80	PS-620-16-208-81	60			1/2" BSP
		PS-620-16-212-80	PS-620-16-212-81	68			3/4" BSP
	345	PS-620-16-216-80	PS-620-16-216-81	74	59.5	59.5	1" BSP

description	code	description	code
PVC blank cap 	PS-630-03-620-00	Steel blank cap 	PS-630.03.162.03

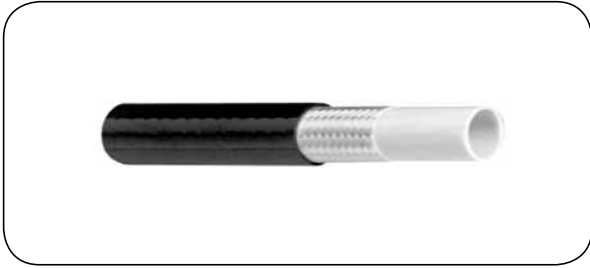
MEASURING SYSTEMS - measuring couplings

description	press. [bar]	code (with PVC cap)	code (with steel cap)	type of sealing	L [mm]	J [mm]	thread size G
Test fitting S12.65x1.5 	630	PS-612-01-204-20	-	E	32	10	1/4" BSP
		-	PS-612-01-204-21		29		1/4" BSP

description	press. [bar]	code (with PVC cap)	code (with steel cap)	type of sealing	L [mm]	J [mm]	thread size G
Test fitting M16x1.5 	630	-	PS-615-01-204-21	E	38	10	1/4" BSP

description	press. [bar]	code (with PVC cap)	code (with steel cap)	type of sealing	L [mm]	J [mm]	thread size G
Test fitting 5/8" BSF (JCB) 	420	-	PS-616-01-202-21	E	-	-	1/8" BSP
		-	PS-616-01-204-21		-		1/4" BSP

MEASURING SYSTEMS - hoses



089

Internal layer: Polyester
Reinforcement: Aramid braid
External layer: Polyurethane, resistant to abrasion
Working temp.: From -40°C up to +100°C
 (for water and air up to +70°C)

Lightweight, flexible hose designed for water-based liquids, hydraulic oil systems. Used in control and measuring systems. Pinpricked as a standard.

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
TO-089A-02	2	5	630	1900	20	2.00
TO-089C-04	4	8	630	1900	40	4.50



TEST 7

Internal layer: Polyester
Reinforcement: Polyester braid
External layer: Polyurethane, resistant to abrasion
Working temp.: From -40°C up to +100°C
 (for water and air up to +70°C)

Lightweight, flexible hose designed for water-based liquids, hydraulic oil. Used in hydraulic control and measuring systems. Pinpricked version available on request (for gases and air).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-TEST7-5021	2.1	5	265	800	20	2.10
ZC-TEST7-5521	2.1	5.5	265	800	20	2.20
ZC-TEST7-5526	2.6	5.5	265	800	20	2.20



TEST 8

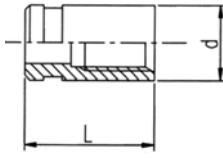
Internal layer: Polyester
Reinforcement: Aramid braid
External layer: Polyurethane, resistant to abrasion
Working temp.: From -40°C up to +100°C
 (for water and air up to +70°C)

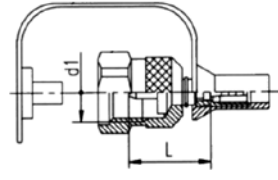
Lightweight, flexible hose designed for water based liquids, hydraulic oil. Used in hydraulic control and measuring systems. Pinpricked version available on request (for gases and air).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-TEST8-5021	2.1	5	630	1890	20	1.90
ZC-TEST8-8040	4	8	550	1650	35	4.40

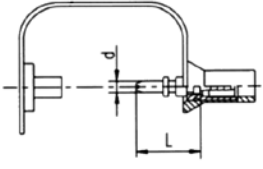
MEASURING SYSTEMS - hose fittings

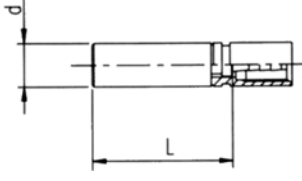
Fittings described below are designed for 2x5 mm hose (801 type) and 4x8 mm (804 type). To select proper fittings for hoses with different diameters, please contact TUBES INTERNATIONAL® Technical Department.

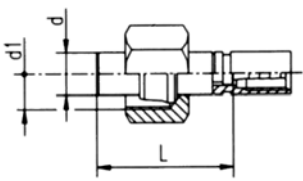
Crimping ferrule			
			
800.00			
press. [bar]	code	L [mm]	d [mm]
-	PS-800-00-002-00	14	8
	PS-800-00-004-00	17	11.5

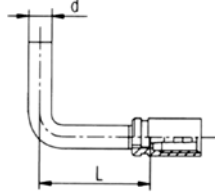
Test fitting. female thread			
			
801.10 804.10			
press. [bar]	code	L [mm]	thread size d1
630	PS-801-10-161-00	22	M16x1.5
	PS-801-10-162-00	22	M16x2
	PS-810-10-162-00*	22	M16x2
500	PS-804-10-162-00	22	M16x2

* - AISI 316 steel

Test fitting. push-in connection			
			
801.20			
press. [bar]	code	L [mm]	d [mm]
400	PS-801-20-000-00	19	3.3

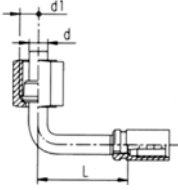
Pipe fitting			
			
801.30 804.30			
press. [bar]	code	L [mm]	d [mm]
-	PS-801-30-004-00	26	4
	PS-801-30-006-00	25	6
	PS-801-30-008-00	25	8
	PS-804-30-004-00	29	4
	PS-804-30-006-00	29	6
	PS-804-30-008-00	29	8

Pipe fitting, female thread (with cutting ring), 24° cone				
				
801.31 801.32				
press. [bar]	code	L [mm]	d [mm]	thread size d1
315	PS-801-31-006-00	26	6	M12x1.5
630	PS-801-32-006-00	26	6	M14x1.5
315	PS-801-31-008-00	26	8	M14x1.5
630	PS-801-32-008-00	26	8	M16x1.5

90° elbow pipe fitting			
			
801.35			
press. [bar]	code	L [mm]	d [mm]
-	PS-801-35-004-00	23	4
	PS-801-35-006-00	22	6
	PS-801-35-008-00	31	8

MEASURING SYSTEMS - hose fittings

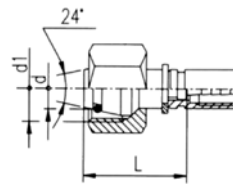
90° elbow. female thread (with cutting ring). 24° cone



801.36
801.37

press. [bar]	code	L [mm]	d [mm]	thread size d1
315	PS-801-36-006-00	28	6	M12x1.5
630	PS-801-37-006-00	28	6	M14x1.5
315	PS-801-36-008-00	30	8	M14x1.5
630	PS-801-37-008-00	30	8	M16x1.5

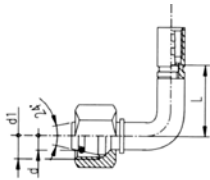
Female thread. 24° cone. O-ring. DKOL / DKOS



801.40
801.41
804.40
804.41

press. [bar]	code	L [mm]	d [mm]	thread size d1
315	PS-801-40-006-00	21	6	M12x1.5
630	PS-801-41-006-00	21	6	M14x1.5
315	PS-801-40-008-00	21	8	M14x1.5
630	PS-801-41-008-00	21	8	M16x1.5
315	PS-801-40-010-00	21	10	M16x1.5
630	PS-801-41-010-00	21	10	M18x1.5
315	PS-804-40-006-00	21	6	M12x1.5
500	PS-804-41-006-00	21	6	M14x1.5
315	PS-804-40-008-00	21	8	M14x1.5
500	PS-804-41-008-00	21	8	M16x1.5
315	PS-804-40-010-00	21	10	M16x1.5
500	PS-804-41-010-00	21	10	M18x1.5

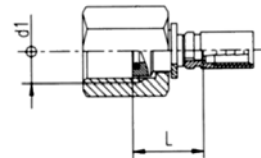
90° elbow. female thread. 24° cone. O-ring. DKOL / DKOS



801.42
801.43

press. [bar]	code	L [mm]	d [mm]	thread size d1
315	PS-801-42-006-00	32	6	M12x1.5
630	PS-801-43-006-00	32	6	M14x1.5
315	PS-801-42-008-00	30	8	M14x1.5
630	PS-801-43-008-00	30	8	M16x1.5
315	PS-801-42-010-00	30	10	M16x1.5
630	PS-801-43-010-00	30	10	M18x1.5

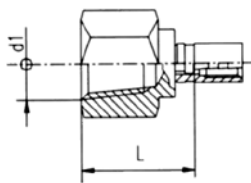
Pressure gauge fitting



801.50
804.50

press. [bar]	code	L [mm]	thread size d1
630	PS-801-50-204-00	15	1/4" BSP
	PS-801-50-208-00	17	1/2" BSP
	PS-801-50-112-00	17	M20x1.5
500	PS-804-50-204-00	15	1/4" BSP

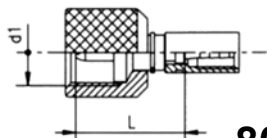
Pressure gauge fitting



801.50

press. [bar]	code	L [mm]	thread size d1
630	PS-801-50-304-00	23	1/4"-18 NPTF

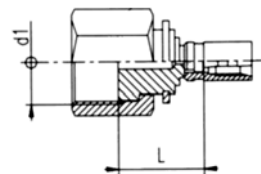
Test fitting with female thread



801.10.125

press. [bar]	code	L [mm]	thread size d1
630	PS-801-10-125-00	22	S12.65x1.5

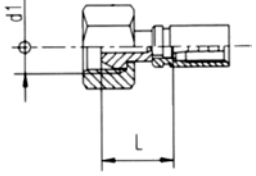
ORFS female thread

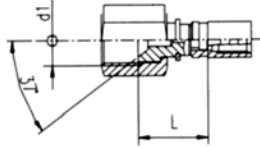


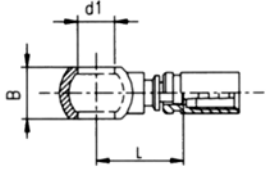
801.53


press. [bar]	code	L [mm]	thread size d1
400	PS-801-53-506-00	18	11/16"-16 UN

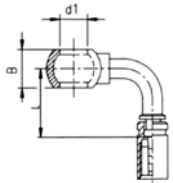
MEASURING SYSTEMS - hose fittings

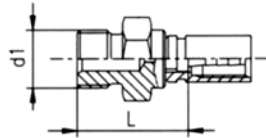
DKL female thread			
			
801.60 804.60			
press. [bar]	code	L [mm]	thread size d1
400	PS-801-60-202-00	14	1/8" BSP
630	PS-801-60-204-00	18	1/4" BSP
	PS-801-60-141-00	18	M14x1.5
500	PS-804-60-204-00	18	1/4" BSP

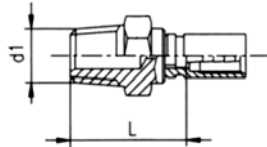
JIC female thread			
			
801.60 804.60			
press. [bar]	code	L [mm]	thread size d1
450	PS-801-60-404-00	15	7/16"-20 UNF
420	PS-801-60-405-00	17	1/2"-20 UNF
450	PS-804-60-404-00	15	7/16"-20 UNF

BANJO straight fitting				
				
801-70 804-70				
press. [bar]	code	L [mm]	d1	B [mm]
200	PS-801-70-008-00	19	8 mm	8
	PS-801-70-010-00	21	10 mm	10
	PS-801-70-202-00	21	1/8"	10
	PS-804-70-008-00	19	8 mm	8
	PS-804-70-010-00	21	10 mm	10
	PS-804-70-202-00	21	1/8"	10

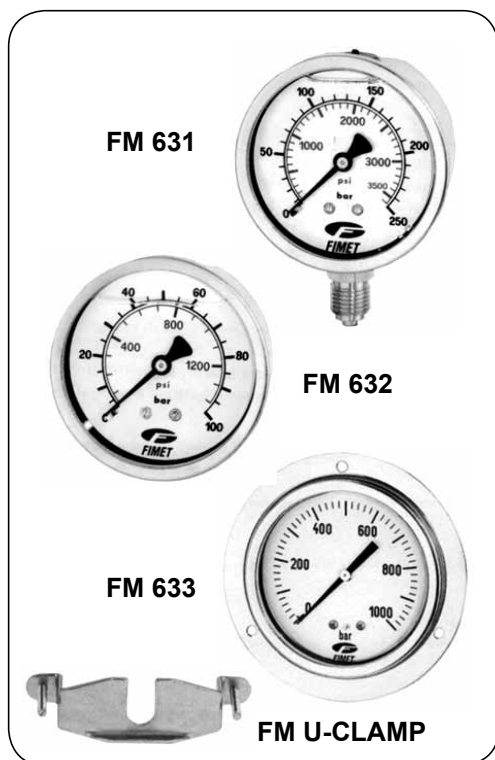
BSF female thread (JCB)			
			
801.10			
press. [bar]	code	L [mm]	thread size d1
420	PS-801-10-145-00	-	5/8" BSF

BANJO (90° elbow) fitting				
				
801.72				
press. [bar]	code	L [mm]	d1	B [mm]
200	PS-801-72-008-00	25	8 mm	8
	PS-801-72-010-00	22	10 mm	10
	PS-801-72-202-00	22	1/8"	10

BSP male thread			
			
801.80			
press. [bar]	code	L [mm]	thread size d1
400	PS-801-80-202-00	19	1/8" BSP
	PS-801-80-204-00	24.5	1/4" BSP

NPTF male thread			
			
801.80 804.80			
press. [bar]	code	L [mm]	thread size d1
400	PS-801-80-302-00	21	1/8"-27 NPTF
	PS-804-80-302-00	21	1/8"-27 NPTF

MEASURING SYSTEMS - pressure gauge



FM 631 / 632 / 633

Diameter:	63 mm
Case:	Stainless steel
Window:	Polycarbonate
Sensing element:	Copper alloy Bourdon tube
Connection:	Brass
Fill:	Glycerol 86.5%
Working temp.:	From -10°C up to +60°C
Internal protection:	1.6
Operational position:	Vertical (+/-5%)
Versions:	FM 631 - bottom connection FM 632 - back connection FM 633 - for panel mounting

Standard pressure gauge intended for application in industry. A measuring range must be chosen according to working pressure, so that:

- constant or slowly fluctuating pressure does not exceed 75% of measuring range,
- pulsating pressure does not exceed 60% of measuring range,
- dynamic pressure impulses do not exceed the maximum measuring range,

For appropriate choice of pressure gauges for gases above 25 bar and for welding gases (oxygen, acetylene) please contact TUBES INTERNATIONAL® Sales or Technical Department. Because of the material used to make the measuring parts of pressure gauges, they must not be used for application with viscous, caustic and crystallisable fluids.

code	code	code	measuring range [bar]	male thread connection [inch]
FM-631-000	FM-632-000	FM-633-000	-1 ÷ 0	1/4
FM-631-001	FM-632-001	FM-633-001	0 ÷ 1	1/4
FM-631-002	FM-632-002	FM-633-002	0 ÷ 2.5	1/4
FM-631-004	FM-632-004	FM-633-004	0 ÷ 4	1/4
FM-631-006	FM-632-006	FM-633-006	0 ÷ 6	1/4
FM-631-010	FM-632-010	FM-633-010	0 ÷ 10	1/4
FM-631-012	FM-632-012	FM-633-012	0 ÷ 12	1/4
FM-631-016	FM-632-016	FM-633-016	0 ÷ 16	1/4
FM-631-020	FM-632-020	FM-633-020	0 ÷ 20	1/4
FM-631-025	FM-632-025	FM-633-025	0 ÷ 25	1/4
FM-631-040	FM-632-040	FM-633-040	0 ÷ 40	1/4
FM-631-060	FM-632-060	FM-633-060	0 ÷ 60	1/4
FM-631-100	FM-632-100	FM-633-100	0 ÷ 100	1/4
FM-631-160	FM-632-160	FM-633-160	0 ÷ 160	1/4
FM-631-250	FM-632-250	FM-633-250	0 ÷ 250	1/4
FM-631-315	FM-632-315	FM-633-315	0 ÷ 315	1/4
FM-631-400	FM-632-400	FM-633-400	0 ÷ 400	1/4
FM-631-600	FM-632-600	FM-633-600	0 ÷ 600	1/4
FM-U-CLAMP	clamp for panel mounting of pressure gauges FM 632 type			

MEASURING SYSTEMS - pressure gauge



Pressure gauge adaptor

Material: Brass or AISI 316Ti steel

Seal: Flat

Adaptors designed for the connection of pressure measuring equipment, pressure gauge valves, pressure gauge cocks and other accessories.

picture	code	thread size	
		female	male
	FM-RD-04B-02B	1/4 BSP	1/8 BSP
	FM-RD-04B-06B	1/4 BSP	3/8 BSP
	FM-RD-04B-08B	1/4 BSP	1/2 BSP
	FM-RD-04B-M10	1/4 BSP	M10x1
	FM-RD-04B-M12	1/4 BSP	M12x1.5
	FM-RD-08B-04N	1/2 BSP	1/4 NPT
	FM-RD-08B-04B	1/2 BSP	1/4 BSP
	FM-RD-08B-06B	1/2 BSP	3/8 BSP
	FM-RD-08B-M20	1/2 BSP	M20x1.5
	FM-RD-M20-08B	M20x1.5	1/2 BSP

Code example of AISI 316 Ti steel adaptor: FM-RD-04B-02B-SS.
Working pressure depends on thread size and adaptor material.



Pressure gauge nipple adaptor

Material: Brass or AISI 316Ti steel

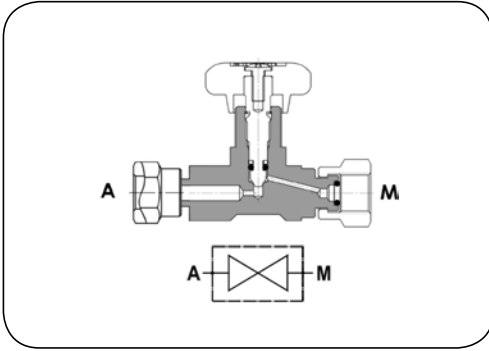
Seal: Flat

Adaptors designed for the connection of pressure measuring equipment, pressure gauge valves, pressure gauge cocks and other accessories.

picture	code	thread size	
		female	male
	FM-RDN-04B-06B	1/4 BSP	3/8 BSP
	FM-RDN-04B-08B	1/4 BSP	1/2 BSP
	FM-RDN-04B-06N	1/4 BSP	3/8 NPT
	FM-RDN-04B-08N	1/4 BSP	1/2 NPT
	FM-RDN-04B-M20	1/4 BSP	M 20x1.5

Code example of AISI 316 Ti steel adaptor: FM-RDN-04B-06B-SS.
Working pressure depends on thread size and adaptor material.

MEASURING SYSTEMS - pressure gauge



Shut-off valve FPE

Material: Body - nickel plated brass
Wheel - plastic

Seal: NBR

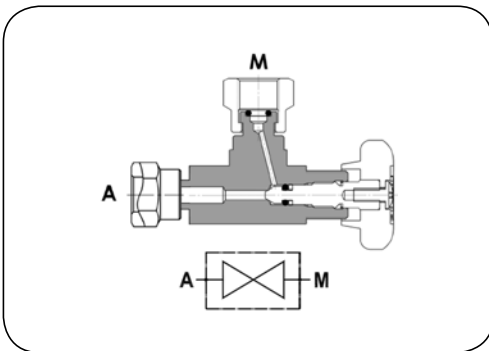
Connection: BSP female thread

Working temp.: From -20°C up to +90°C

FPE type valve with M connection for a pressure gauge, used in hydraulic systems to shut off a pressure gauge from installation.

The valve must be connected with an adapter FPE/FPEA.

code	thread size [inch]	working pressure [bar]	weight [kg]
DC-FPE-04	1/4	350	0.17



Shut-off valve FPEA

Material: Body - nickel plated brass
Wheel - plastic

Seal: NBR

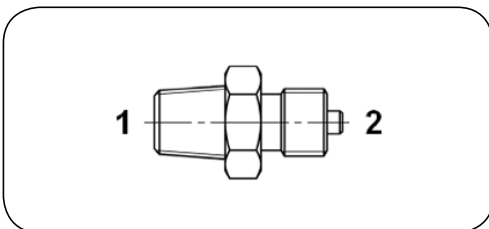
Connection: BSP female thread

Working temp.: From -20°C up to +90°C

FPEA type valve with M connection for a pressure gauge, used in hydraulic systems to shut off a pressure gauge from installation.

The valve must be connected with an adapter FPE/FPEA.

code	thread size [inch]	working pressure [bar]	weight [kg]
DC-FPEA-04	1/4	350	0.16



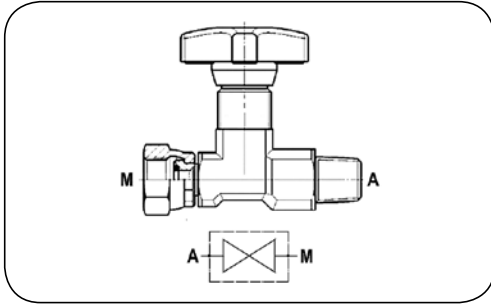
Adapter FPE / FPEA

Material: Galvanized steel

Adapter for optional use with shut-off valves, both FPE and FPEA types. Allows to assemble the valve in any position.

code	thread size 1 [inch]	thread size 2 [inch]	working pressure [bar]
DC-FPE-FPEA	1/4 BSPT	1/4 BSP	350

MEASURING SYSTEMS - pressure gauge



Shut-off valve FT 290

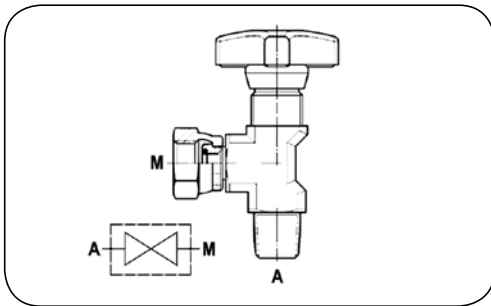
Material: Body - zinc-plated steel
Wheel - plastic

Seal: NBR

Working temp.: From -20°C up to +90°C

A valve with M connection for a pressure gauge. Used in hydraulic systems to shut a pressure gauge from the system.

code	thread size M [inch]	thread size A [inch]	working pressure [bar]
DC-FT290-04	1/4 BSP	1/4 BSPT	350



Shut-off valve FT 291

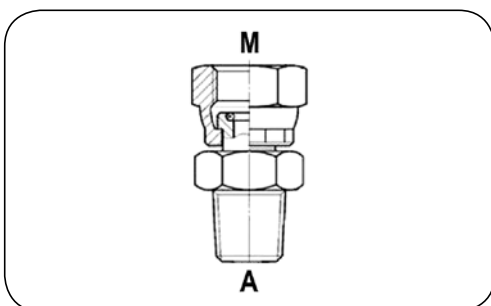
Material: Body - zinc-plated steel
Wheel - plastic

Seal: NBR

Working temp.: From -20°C up to +90°C

A valve with M connection for a pressure gauge. Used in hydraulic systems to shut a pressure gauge from the system.

code	thread size M [inch]	thread size A [inch]	working pressure [bar]
DC-FT291-04	1/4 BSP	1/4 BSPT	350



Adapter FT 299

Material: Zinc-plated steel

Seal: NBR

Working temp.: From -20°C up to +90°C

An adapter with M connection for a pressure gauge. Used in hydraulic systems to connect a pressure gauge with the system.

code	thread size M [inch]	thread size A [inch]	working pressure [bar]
DC-FT299-04	1/4 BSP	1/4 BSPT	400
DC-FT299-08	1/4 BSP	1/2 BSPT	400

MEASURING SYSTEMS - measuring sets



TEMA 100

Measuring system designed to monitor static, dynamic pressure as well as vacuum in hydraulic and pneumatic applications. The measuring system consists of a basic set and such accessories as: additional measuring nipples, hoses and adapters that facilitate measurement in hardly accessible places. A self-venting device guarantees accurate readings. A quick release coupling designed to be connected with a measuring nipple has integrated shut-off valves that ensure spill free connection and disconnection of the measuring system.

Maximum working pressure up to 600 bar.

Standard set designed to measure pressure in hydraulic systems is supplied in a plastic case and consists of:

- measuring handle TA-M-101-2*,
- pressure gauge of your choice**,
- measuring nipple TA-M-120,
- measuring hose assembly TA-M-130 (L=2.5m),
- adapter TA-M-135 (1/4" BSP female / 1/8" BSP male thread),
- adapter TA-M-136 (1/8" BSP female / 1/4" BSP male thread),
- adapter TA-M-139 (M16x2 female thread)

There is empty space for two additional pressure gauges and TA-M-139 adapter in this plastic case.

code	type
TA-M-101	Set without pressure gauge
TA-M-105	Set with 1 press. gauge (-1 ÷ 15 bar)
TA-M-112	Set with 1 press. gauge (0 ÷ 25 bar)
TA-M-113	Set with 1 press. gauge (0 ÷ 40 bar)
TA-M-114	Set with 1 press. gauge (0 ÷ 60 bar)
TA-M-106	Set with 1 press. gauge (0 ÷ 100 bar)
TA-M-107	Set with 1 press. gauge (0 ÷ 250 bar)
TA-M-108	Set with 1 press. gauge (0 ÷ 400 bar)
TA-M-109	Set with 1 press. gauge (0 ÷ 600 bar)











* option - measuring handle TA-M-101-21A

** for a set with 2 pressure gauges, add their numbers to the code - e.g. TA-M-106-13 (a set with one pressure gauge 0÷100 bar and one pressure gauge 0÷40 bar.)

COMPONENTS AND ACCESSORIES OF TEMA 100 SYSTEM

picture	code	description
	TA-M-101-2	Measuring handle that can be connected under low pressure. Equipped with pressure gauge port, quick release coupling with shut-off valve and self-venting device.
	TA-M-101-21A	Measuring handle that can be connected under full working pressure. Equipped with pressure gauge port, quick release coupling with shut-off valve, self-venting device and valve.
	TA-M-101-3	Self-venting block with an alternative position of a venting screw.
	TA-M-120	Measuring nipple 1/8" BSP male thread, A type seal, galv. steel (PVC blank cap).
	TA-M-120-126	Measuring nipple 1/8" BSP male thread, A type seal, galv. steel.
	TA-M-120UNF	Measuring nipple 7/16" UNF male thread, galv. steel (PVC blank cap).
	TA-M-121-125	Measuring nipple 1/4" BSP male thread, A type seal, galv. steel (PVC blank cap).
	TA-M-121-126	Measuring nipple 1/4" BSP male thread, A type seal, galv. steel.
	TA-M-121R	Measuring nipple 1/4" BSP male thread, A type seal, AISI 316 steel (PVC blank cap).
	TA-M-121R-126R	Measuring nipple 1/4" BSP male thread, A type seal, AISI 316 steel
	TA-M-122-125	Measuring nipple 1/4" BSP male thread, B type seal, galv. (PVC blank cap).
TA-M-122-126	Measuring nipple 1/4" BSP male thread, B type seal, galv. steel.	

MEASURING SYSTEMS - measuring sets

COMPONENT PARTS AND ACCESSORIES OF TEMA SYSTEM 100		
picture	code	description
	TA-M-123-125	Measuring nipple M12x1.5 male thread. A type seal. galv. steel (PVC blank cap).
	TA-M-123-126	Measuring nipple M12x1.5 male thread. A type seal. galv. steel.
	TA-M-124-125	Measuring nipple M14x1.5 male thread. A type seal. galv. steel (PVC blank cap).
	TA-M-124-126	Measuring nipple M14x1.5 male thread. A type seal. galv. steel.
	TA-M-124UNF	Measuring nipple 9/16" UNF male thread. galv. steel (PVC blank cap).
	TA-M-128-125	Measuring nipple M10x1 male thread. A type seal. galv. steel (PVC blank cap).
	TA-M-128-126	Measuring nipple M10x1 male thread. A type seal. galv. steel.
	TA-M-129R	Measuring nipple M10x1 male thread. B type seal. AISI 316 steel (PVC blank cap).
	TA-M-129R-126R	Measuring nipple M10x1 male thread. B type seal. AISI 316 steel
	TA-M-125	Blank cap of measuring nipple (PVC).
	TA-M-126K	Blank cap of measuring nipple (galv. steel).
	TA-M-126R	Blank cap of measuring nipple (AISI 316 steel).
	TA-M-150	Socket of quick release coupling with 1/8" BSP male thread for measuring nipple.
	TA-M-139	Changeover adapter for TEMA 100 system with M16 x 2 metric male thread.
	TA-M-150-137	Socket of quick release coupling with 1/4" BSP female thread for measuring nipple.
	TA-M-130	Measuring hose assembly L = 2.5 m with TA-M-120 plug and TA-M-150 socket.
	TA-M-160-1	Pipe connector for measuring nipple 6 mm x 1/8".
	TA-M-161-1	Pipe connector for measuring nipple 8 mm x 1/8".
	TA-M-162-1	Pipe connector for measuring nipple 10 mm x 1/8".
	TA-M-163-1	Pipe connector for measuring nipple 12 mm x 1/8".
	TA-M-164-1	Pipe connector for measuring nipple 14 mm x 1/8".
	TA-M-165-1	Pipe connector for measuring nipple 15 mm x 1/8".
	TA-M-135	Adapter 1/4" female thread / 1/8" male thread.
	TA-M-136	Adapter 1/8" female thread / 1/4" male thread.
	TA-M-137	Adapter 1/8" female thread / 1/4" female thread.
	TA-M-140	90° elbow adapter 1/8" female thread / 1/8" female thread.
	TA-M-100-40	Rubber protection of pressure gauge Ø 63 mm.
	TA-M-101-1	Plastic case.

MEASURING SYSTEMS - measuring sets



DC-BOX-01



DC-BOX-02

DC-BOX

Measuring sets designed to monitor static, dynamic pressure as well as vacuum in hydraulic and pneumatic installations. The sets consist of pressure gauges, measuring connectors and extension hose assemblies. The sets supplied in plastic cases contain one of the two assortments of equipment.

PARTS OF DC-BOX SETS

picture	description	DC-BOX-01	DC-BOX-02
	Pressure gauge DN 63, 1/4", 0 ÷ 100 bar	-	X
	Pressure gauge DN 63, 1/4", 0 ÷ 160 bar	X	-
	Pressure gauge DN 63, 1/4", 0 ÷ 250 bar	-	X
	Pressure gauge DN 63, 1/4", 0 ÷ 315 bar	X	-
	Pressure gauge DN 63, 1/4", 0 ÷ 400 bar	-	X
	Metric M16x2 thread measuring nipple with 1/4" BSP male thread, E seal, zinc-plated steel, (PVC dust cap)	X	X
	Metric M16x2 thread measuring nipple with 3/8" BSP male thread, E seal, zinc-plated steel, (PVC dust cap)	X	X
	Metric M16x2 thread measuring nipple with 1/4" NPT male thread, zinc-plated steel, (PVC dust cap)	X	X
	Metric M16x2 thread measuring nipple with 3/8" NPT male thread, zinc-plated steel, (PVC dust cap)	-	X
	Metric M16x2 thread measuring nipple with Metric M10x1 male thread, F seal, zinc-plated steel, (PVC dust cap)	X	X
	Metric M16x2 thread measuring nipple with 7/16" UNF male thread, F seal, zinc-plated steel, (PVC dust cap)	-	X
	Metric M16x2 thread measuring nipple with 9/16" UNF male thread, F seal, zinc-plated steel, (PVC dust cap)	-	X
	Metric M16x2 thread measuring nipple with Metric M18x1.5 female thread DIN 3865, cone 24°, 12L, zinc-plated steel, (metal dust cap)	-	X
	Metric M16x2 pressure gauge fitting with 1/4" BSP female thread, zinc-plated steel	X	X
	Metric M16x2 pressure gauge fitting with 1/2" BSP female thread, zinc-plated steel	-	X
	Metal dust cap M16x2, zinc-plated steel	X	X
	90° Metric M16x2 pressure gauge fitting with 1/4" BSP female thread, zinc-plated steel	X	-
	Metric M16x2 pressure gauge for panel mounting with 1/4" BSP female thread, zinc-plated steel	-	X
	Extension hose assembly M16x2, L = 1 m	-	X
	Extension hose assembly M16x2, L = 1.5 m	X	-
	Extension hose assembly M16x2, L = 2 m	-	X

MEASURING SYSTEMS - diagnostic quick release couplings

Quick release couplings ISO 15171-1



PERFECTING (1/8")

Standard: ISO 15171-1
Application: High pressure hydraulics (hydraulic oil)
Working press.: Up to 400 bar
Material: Zinc-plated steel
Seal: NBR (from -40°C up to +120°C)

Diagnostic quick release couplings intended to measure pressure in hydraulic systems. Disconnected plugs (as a standard permanently fixed in the hydraulic system) handle the maximum working pressure. The connection and disconnection of the quick release couplings under pressure is not allowed (permitted if the system is off and without pressure). Interchangeable with quick release couplings according to ISO 15171-1 of other producers.

Socket

picture	code	size [inch]	thread size [inch]	working pressure [bar]	bursting pressure [bar]	flow at $\Delta p = 3$ bar [l/min]
	PC-1PDF1	1/8	1/8 NPT female	400	1300	4.4
	PC-1PDF2		1/4 NPT female			
	PC-1PDM2		1/4 NPT male			

Plug

picture	code	size [inch]	thread size [inch]	working pressure [bar]	bursting pressure [bar]	flow at $\Delta p = 3$ bar [l/min]
	PC-PD1F1	1/8	1/8 NPT female	400	1300*	4.4
	PC-PD1F2		1/4 NPT female			
	PC-PD1M1		1/8 NPT male			
	PC-PD1M2	1/4 NPT male				

* - the bursting pressure of a disconnected plug: 1600 bar

Dust cap

picture	code	size [inch]	material
	PC-PH1DC	1/8	NBR