Eaton DYNAMAX™ EC850
500 Bar Spiral Hose

Raising the Bar on Ultra-High Pressure Spiral Hydraulic Hose

EATON
Powering Business Worldwide

DYNAMAX™ EC850

500 Bar Spiral Hose for Extremely Demanding Applications

New Ultra-High Pressure Hydraulic Hose

DYNAMAX™ EC850

Eaton's new DYNAMAX EC850 500 bar (7250 psi) hydraulic hose delivers dynamic performance for today's more-demanding hydraulic systems.

Designed for very demanding applications such as:

- Direct drive steering systems
- Mobile hydrostatic drive systems
- Other applications requiring extremely high system pressures

Over the years, hydraulic system pressures have steadily increased. Higher pressures provide greater power! Eaton was one of the early innovators of hydraulic hose and Eaton's corporate message is "Powering Business Worldwide" so it just makes sense that Eaton would develop this innovative and top-performing, new state-of-the-art, "high pressure" hydraulic hose incorporating the latest technologies in tube compounds, spiral wire reinforcement and abrasion resistant cover compounds.

Hydraulic pump manufacturers around the world are developing pumps that operate up to 500 bar (7250 psi) pressure.

Development of the new DYNAMAX hose was done in conjunction with development of the latest high performance pump technologies now being offered in the marketplace. Eaton's extreme test criteria closely simulate the rigorous and sometimes brutal performance and environmental requirements of real-life applications where these new systems are being used. To ensure long-lasting and effective hose performance, specific tests on EC850 were performed up to three million impulse cycles at working pressure, as compared to typical spiral hose specifications which require substantially fewer impulse cycles. Eaton's EC850 hose and hose fitting combination yielded a cool down leakage of class 0 in accordance with SAE J1176.

Higher Pressures Provide Greater Power!

Performance at the maximum pressure of demanding hydraulic systems

Eaton DYNAMAX EC850 hose far exceeds the industry requirements providing longer life resulting in lower maintenance costs over the life of the equipment

Tested up to 3 million impulse cycles (-10 & -12) at working pressure

Features

- 4-spiral wire construction in hose sizes -10, -12 & -16; 6-spiral wire construction in -20 size
- Highly abrasion resistant DURA-TUFF cover
- Up to 27% reduction in force to bend compared to standard SAE 100R15 hoses
- 10% reduced bend radius compared to standard SAE 100R15 hoses
- Size -10 (DN16): Exceeds EN856/4SP performance
- Size -12 through -20 (DN19 to DN31): Exceeds SAE 100R15 performance
- Hose materials meet global REACH requirements
- Class 0 cool down leakage in accordance with SAE J1176

Benefits

- Improved flexibility and bend radius enhance installation and routing capabilities
- 8 times better abrasion resistance as compared to standard rubber covered hoses with the DURA-TUFF cover
- Longer hose assembly life means more uptime and lower costs
- No hydraulic fluid leakage between hose and hose fitting when machine is shut off and system cools down
- Environmentally friendly materials

Applications

- High pressure hydraulic systems with petroleum based fluids
- Highly demanding applications: hydrostatic drive systems, high pressure direct steering and extremely high pressure hydraulic applications
- Critical applications in forestry, construction, agriculture, snow removal and other off-highway equipment

DYNAMAX EC850

Part Number	Hose ID			Hose OD		Maximum Working Pressure		Burst Pressure		Minimum Bend Radius		Weight	
	DN	mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lbs/ft
EC850-10	16	15,9	0.63	29,0	1.14	500	7250	2000	29000	200,0	7.87	1,23	0.82
EC850-12	19	19,1	0.75	33,3	1.31	500	7250	2000	29000	215,0	8.46	1,52	1.01
EC850-16	25	25,4	1.00	40,4	1.59	500	7250	2000	29000	270,0	10.63	2,31	1.54
EC850-20	31	31,8	1.25	50,9	2.00	500	7250	2000	29000	380,0	14.96	4,01	2.69

Construction

Synthetic rubber tube, multiple heavy spiral wire (4-spiral wire in -10, -12, -16), (6-spiral wire in -20), Highly abrasion resistant DURA-TUFF rubber cover

Operating Temperature Range

-40°C to +100°C
(-40°F to +212°F)

Agency Listings

MSHA IC-84, DIN 5510

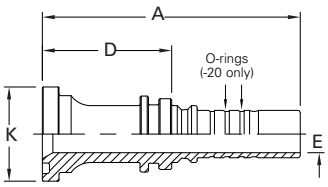
DYNAMAX EC850 and
New High Performance Fitting Designs

Hose fitting performance matches the hose performance

Eaton didn't stop with just developing the DYNAMAX EC850 hose, we also designed a high performance fitting in order to offer an engineered hose assembly system that will meet and exceed the application requirements. Noted below are the features of our new fitting designs.

1. **NEW O-ring nipple design:** Added innovative and unique new O-ring seal to the -20 size nipples. The O-ring design prevents fluid migration thus providing zero leakage as measured to SAE and EN specifications.
2. **NEW Code 62 flange design:** While meeting all Code 62 international design standards, Eaton has developed improvements on the basic connection with the EC850 Code 62 flange design that includes stress relief characteristics which are capable of withstanding the ultra-high pressures and impulsing of 500 bar hydraulic systems. Eaton Code 62 flange components have been tested and approved at the same performance level as EC850 hose. Use all Eaton components to ensure compatibility and system performance.
3. **NEW DKO S fitting connection design:** While meeting all DKO international design standards, Eaton has improved on the basic connection by developing a more robust design with a hardened swivel nut which provides outstanding performance at 500 bar.
4. **High strength one-piece nipple design:** To meet the required 500 bar pressures, only Eaton one-piece nipples machined using high strength steel are approved for use with DYNAMAX EC850.

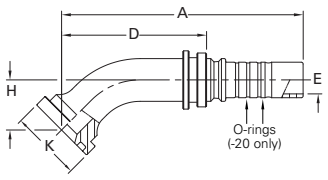
Straight SAE Code 62 Flange



Nipple Part# *	Flange Head Dia. K Ø		Hose DN	Hose Size	A		Hose CutOff Factor (D)		E Ø	
	mm	in			mm	in	mm	in	mm	in
1W12FH12	41,3	1.62	19	-12	110,6	4.35	58,6	2.31	15,1	0.59
1W16FH16	47,6	1.88	25	-16	134,0	5.28	67,4	2.65	19,6	0.77
1W20FH20*	54,0	2.13	31	-20	145,2	5.72	70,3	2.77	25,5	1.00

*** Requires separate installation of 2 ea. p/n 05.071-27.30x2.40 O-rings (must be ordered separately). O-rings must be installed with PAG oil (only) prior to crimping.**

45° SAE Code 62 Flange Elbow



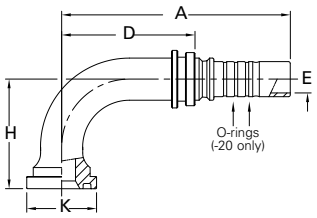
Nipple Part# *	Flange Head Dia. K Ø		Hose DN	Hose Size	A		Hose CutOff Factor (D)		E Ø		H	
	mm	in			mm	in	mm	in	mm	in	mm	in
1W12FHA12	41,3	1.62	19	-12	130,1	5.12	78,1	3.07	15,1	0.59	27,0	1.06
1W16FHA16	47,6	1.88	25	-16	160,6	6.32	94,0	3.70	19,6	0.77	31,0	1.22
1W20FHA20*	54,0	2.13	31	-20	190,0	7.48	115,1	4.53	25,5	1.00	39,0	1.54

*** Requires separate installation of 2 ea. p/n 05.071-27.30x2.40 O-rings (must be ordered separately). O-rings must be installed with PAG oil (only) prior to crimping.**

IMPORTANT INFORMATION: Only the listed Eaton Nipples and Sockets are approved and tested to meet the EC850 pressure requirements. Code 62 flange nipples are only qualified with Eaton manufactured flange halves and 4 bolt flanges. For additional configurations, contact Eaton.

DYNAMAX EC850 and
New High Performance Fitting Designs

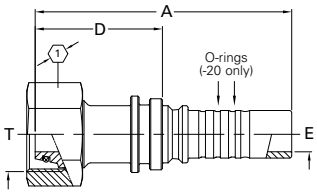
90° SAE Code 62 Flange Elbow



Nipple Part# *	Flange Head Dia. K Ø		Hose DN	Hose Size	A		Hose CutOff Factor (D)		E Ø		H	
	mm	in			mm	in	mm	in	mm	in	mm	in
1W12FHB12	41,3	1.62	19	-12	124,8	4.91	72,8	2.87	15,1	0.59	59,0	2.32
1W16FHB16	47,6	1.88	25	-16	155,6	6.13	89,0	3.50	19,6	0.77	71,0	2.80
1W20FHB20*	54,0	2.13	31	-20	185,0	7.28	110,1	4.33	25,5	1.00	89,0	3.50

*** Requires separate installation of 2 ea. p/n 05.071-27.30x2.40 O-rings (must be ordered separately). O-rings must be installed with PAG oil (only) prior to crimping.**

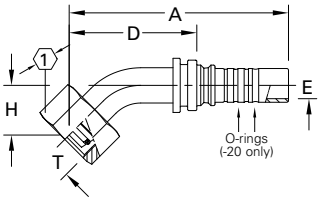
Straight DKO Female Swivel, Heavy Duty



Nipple Part# *	Thread T	Tube O.D.	Hose DN	Hose Size	A		Hose CutOff Factor (D)		EØ		①	
		mm			mm	in	mm	in	mm	in	mm	in
1W16DH10	M30x2,0	20	16	-10	80,5	3.17	35,6	1.40	12,1	0.48	36,0	1.42
1W20DH12	M36x2,0	25	19	-12	103,2	4.06	51,2	2.02	15.1	0.59	46,0	1.81
1W25DH16	M42x2,0	30	25	-16	120,6	4.75	54,0	2.13	19,6	0.77	50,0	1.97
1W32DH20*	M52x2,0	38	31	-20	134,9	5.31	60,0	2.36	25,5	1.00	60,0	2.36

*** Requires separate installation of 2 ea. p/n 05.071-27.30x2.40 O-rings (must be ordered separately). O-rings must be installed with PAG oil (only) prior to crimping.**

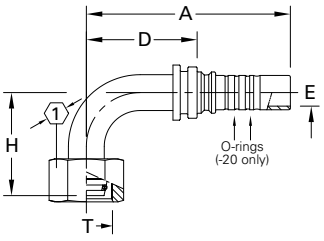
45° DKO Female Swivel, Heavy Duty



Nipple Part# *	Thread T	Tube O.D.	Hose DN	Hose Size	A		Hose CutOff Factor (D)		EØ		H		①	
		mm			mm	in	mm	in	mm	in	mm	in	mm	in
1W16DHA10	M30x2,0	20	16	-10	112,8	4.44	67,9	2.67	12,1	0.48	31,0	1.21	36,0	1.42
1W20DHA12	M36x2,0	25	19	-12	135,1	5.32	83,1	3.27	15,1	0.59	32,0	1.26	46,0	1.81
1W25DHA16	M42x2,0	30	25	-16	163,6	6.44	97,0	3.82	19,6	0.77	35,0	1.38	50,0	1.97
1W32DHA20*	M52x2,0	38	31	-20	190,0	7.48	115,1	4.53	25,5	1.00	39,0	1.54	60,0	2.36

*** Requires separate installation of 2 ea. p/n 05.071-27.30x2.40 O-rings (must be ordered separately). O-rings must be installed with PAG oil (only) prior to crimping.**

90° DKO Female Swivel, Heavy Duty



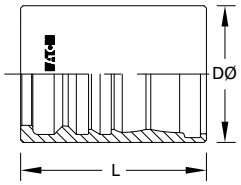
Nipple Part# *	Thread T	Tube O.D.	Hose DN	Hose Size	A		Hose CutOff Factor (D)		EØ		H		①	
		mm			mm	in	mm	in	mm	in	mm	in	mm	in
1W16DHB10	M30x2,0	20	16	-10	99,2	3.91	54,3	2.14	12,1	0.48	61,5	2.42	36,0	1.42
1W20DHB12	M36x2,0	25	19	-12	124,8	4.91	72,8	2.87	15,1	0.59	76,5	3.01	46,0	1.81
1W25DHB16	M42x2,0	30	25	-16	155,6	6.13	89,0	3.50	19,6	1.77	76,0	2.99	50,0	1.97
1W32DHB20*	M52x2,0	38	31	-20	185,0	7.28	110,1	4.33	25,5	1.00	89,0	3.50	60,0	2.36

*** Requires separate installation of 2 ea. p/n 05.071-27.30x2.40 O-rings (must be ordered separately). O-rings must be installed with PAG oil (only) prior to crimping.**

IMPORTANT INFORMATION: Only the listed Eaton Nipples and Sockets are approved and tested to meet the EC850 pressure requirements. Code 62 flange nipples are only qualified with Eaton manufactured flange halves and 4 bolt flanges. For additional configurations, contact Eaton.

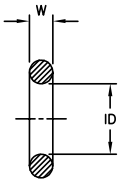
DYNAMAX EC850
Approved for High Pressure Applications

Socket



Part #	Hose Size DN	Dash Size	Length (L) mm	in	DØ mm	in
1WD10	16	-10	49,1	1.93	35,9	1.41
1WD12	19	-12	57,0	2.24	42,1	1.66
1WD16	25	-16	67,5	2.66	51,4	2.02
1WE20	31	-20	78,7	3.10	63,5	2.50

O-ring* (-20 Nipple)

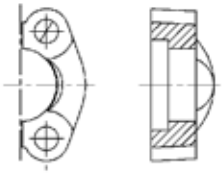


Part #	Hose Size DN	Dash Size	Width (W) mm	in	ID mm	in
05.071-27.30x2.40	31	-20	2,4	0.094	27,3	1.07

Two (2) each required for -20 size nipples only.

O-rings must be installed with PAG oil (only) prior to crimping.

Split Flange



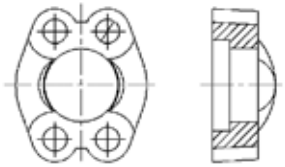
Part #	Hose Size DN	Dash Size
FC3425-12-449* GC3425-12**	19 19	-12 -12
FC3425-16-449* GC3425-16.1**	25 25	-16 -16
FC3425-20-449* GC3425-20.1**	31 31	-20 -20

Two (2) each split flange halves required per code 62 flange nipple.

* Flange halves only available in North America. Use "GC" Series P/N outside NA

** Eaton recommends use of metric bolts with a strength class 10.9 according to ISO 898-1

4 Bolt Flange



Part #	Hose Size DN	Dash Size
GC2453-12**	19	-12
GC2453-16.1**	25	-16
GC2453-20.1**	31	-20

** Eaton recommends use of metric bolts with a strength class 10.9 according to ISO 898-1

Approved Skive Tooling

FT1240–150–Size

Internal Skive Tooling Part Numbers

Part #	Hose Size DN	Dash Size	Internal Skive Length mm	in
121502755-10	16	-10	10,7	0.421
FT1240-150-12 *** 12150506-12	19	-12	10,0	0.394
FT1240-150-16 *** 12150506-16	25	-16	13,5	0.531
FT1240-150-20 *** 12150466-20	31	-20	14,0	0.551

FT1231–Size
Black Oxide Mandrel

External Skive Tooling Part Numbers

Part #	Hose Size DN	Dash Size	External Skive Length mm	in
GT2282-10	16	-10	38,5	1.52
FT1231-12 *** GT2282-12	19	-12	43,5	1.71
FT1231-16 *** GT2282-16	25	-16	48,5	1.91
FT1231-20 *** GT2282-20	31	-20	56,5	2.22

*** Tooling only available in North America. Use other P/N outside NA. Follow Eaton assembly procedures for internal and external skiving.

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