

## Quarter turn actuators DFPD-HD

**FESTO**



## Key features

### Function

The quarter turn actuator DFPD-HD is suitable for open and closed-loop control of ball valves, air valves and butterfly valves. Its VDI/VDE 3845-compliant interface enables direct mounting of sensor boxes or positioners.

The DFPD-HD series, designed with a Scotch yoke system, have a non-linear torque characteristic as a function of the swivelling position.

Grouped into three sizes – 9000, 18000 and 32000 – it is possible to achieve a torque of 9000 ... 32000 Nm.

Typical applications:

- For butterfly valves: canted (asymmetrical yoke)
- For ball valves: symmetrical (symmetrical yoke)

Typical applications include:

- Controlling heating in different power station processes
- Controlling gas ventilation flaps
- Controlling compressed air valves on furnaces
- Treatment of drinking water, industrial water and wastewater
- Controlling valves in chemical processes

Double-acting actuator	Max. torque [Nm]	Piston diameter [mm]	Flange pattern	Shaft connection	Shaft connection depth [mm]	Pneumatic connection
DFPD-HD ... D	9000	235	F25	V60	160	G1/2
DFPD-HD ... D	9000	280	F25	V60	160	G1/2
DFPD-HD ... D	9000	335	F25	V60	160	G1/2
DFPD-HD ... D	9000	385	F25	V60	160	G1
DFPD-HD ... D	9000	435	F25	V60	160	G1
DFPD-HD ... D	18000	335	F30	V72	200	G1/2
DFPD-HD ... D	18000	385	F30	V72	200	G1
DFPD-HD ... D	18000	435	F30	V72	200	G1
DFPD-HD ... D	18000	485	F30	V72	200	G1
DFPD-HD ... D	18000	535	F30	V72	200	G1
DFPD-HD ... D	18000	585	F30	V72	200	G1
DFPD-HD ... D	32000	385	F35	V120	230	G1
DFPD-HD ... D	32000	435	F35	V120	230	G1
DFPD-HD ... D	32000	485	F35	V120	230	G1
DFPD-HD ... D	32000	535	F35	V120	230	G1
DFPD-HD ... D	32000	585	F35	V120	230	G1
DFPD-HD ... D	32000	635	F35	V120	230	G1

## Key features

Single-acting actuator	Max. torque [Nm]	Piston diameter [mm]	Flange pattern	Shaft connection	Shaft connection depth [mm]	Pneumatic connection
DFPD-HD ... S	9000	280	F25	V60	160	G1/2
DFPD-HD ... S	9000	335	F25	V60	160	G1/2
DFPD-HD ... S	9000	385	F25	V60	160	G1
DFPD-HD ... S	9000	435	F25	V60	160	G1
DFPD-HD ... S	18000	385	F30	V72	200	G1
DFPD-HD ... S	18000	435	F30	V72	200	G1
DFPD-HD ... S	18000	485	F30	V72	200	G1
DFPD-HD ... S	18000	535	F30	V72	200	G1
DFPD-HD ... S	18000	585	F30	V72	200	G1
DFPD-HD ... S	32000	435	F35	V120	230	G1
DFPD-HD ... S	32000	485	F35	V120	230	G1
DFPD-HD ... S	32000	535	F35	V120	230	G1
DFPD-HD ... S	32000	585	F35	V120	230	G1
DFPD-HD ... S	32000	635	F35	V120	230	G1
DFPD-HD ... S	32000	685	F35	V120	230	G1
DFPD-HD ... S	32000	735	F35	V120	230	G1

Key features of the different variants

Quarter turn actuator DFPD-HD  
 • Double-acting



Quarter turn actuator DFPD-HD (S)  
 • Single-acting



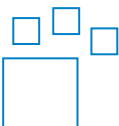
Quarter turn actuator DFPD-HD (-MW)  
 • With manual override with handwheel



Quarter turn actuator DFPD-HD (HP)  
 • With manual override with hydraulic support



Ordering data – Product options



Configurable product  
 This product and all its product options can be ordered using the configurator.

The configurator can be found at  
 → [www.festo.com/catalogue/...](http://www.festo.com/catalogue/...)  
 Enter the part number or the type.

Part no.	Type
8042201	DFPD-HD-9000
8042202	DFPD-HD-18000
8042203	DFPD-HD-32000

## Type codes

001	Series
DFPD	Semi-rotary drive

002	Version
HD	Heavy duty guide

003	Size
9000	9000
18000	18000
32000	32000

004	Piston diameter [mm]
235	235
280	280
335	335
385	385
435	435
485	485
535	535
585	585
635	635
685	685
735	735

005	Design
SY	Scotch yoke system

006	Yoke type
	None
A	Asymmetrical
Y	Symmetrical

007	Swivel angle [°]
90	90

008	Swivel direction
L	Left
R	Right

009	Function
D	Double-acting
S	Single-acting

010	Spring force HD
	None
1	Spring package 1
2	Spring package 2
3	Spring package 3
4	Spring package 4

011	Flange pattern 1
F25	Hole pattern F25
F30	Hole pattern F30
F35	Hole pattern F35

012	Manual override
	None
MW	Handwheel
HP	Hydraulic pump

Datasheet



Swivel angle  
90°

Size  
9000, 18000, 32000

Torque  
9000 ... 32000 Nm



General technical data		9000	18000	32000
Size		9000	18000	32000
Flange hole pattern		F25	F30	F35
Shaft connection		V60	V72	V120
Shaft connection depth	[mm]	160	200	230
Pneumatic connection		G1/2, G1	G1/2, G1	G1
Design		Scotch yoke system		
Mode of operation		Double-acting		
Cushioning		None		
Process valve connection to standard		ISO 5211		
Note about the torque		Increasing the operating pressure above the limit given in the table is not permitted; doing so will cause the actuator to overload.		
Swivel angle	[°]	90		
End-position adjusting range at 0°	[°]	-5 ... +5		
End-position adjusting range at 90°	[°]	-5 ... +5		
Position sensing		Optical		

Operating and environmental conditions		9000	18000	32000
Operating pressure	[bar]	1 ... +8.5		
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]		
Note on the operating/ pilot medium	[K]	Dew point at least 10°C below the ambient temperature and temperature of the medium		
Degree of protection		IP66M IP67M		
Note on the operating/ pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)		
Ambient temperature	[°C]	-20 ... +80		
CE marking (see declaration of conformity) → www.festo.com		To EU Explosion Protection Directive (ATEX) To EU Machinery Directive		
UKCA marking (see declaration of conformity)		UK regs EX		
Certified for safety function to ISO 13849 and IEC 61508 (SIL)		Product can be used in SRP/CS up to SIL 2 (Low Demand)		
Certificate-issuing authority		German Technical Control Board North (TÜV Nord) 212170802		
ATEX category for gas		II 2G		
Type of (ignition) protection for gas		Ex h IIB T6...T4 Gb X		
ATEX category for dust		II 2D		
Type of (ignition) protection for dust		Ex h IIC T85°C...T105°C Db X		
Explosion ambient temperature	[°C]	-20°C ≤ Ta ≤ +80°C		

## Datasheet – Torque

Materials	
Housing	Steel
End cap	Steel
Piston	Steel
Piston rod	Hard-chrome-plated steel
Tie rods	Steel
Cylinder barrel	Steel, nickel-plated
Stop screws	Steel
Spring	Spring steel
Spring rod	Hard-chrome-plated steel
Socket	Bronze
	PTFE
Seals	NBR
	TPE-U(PU)

**Terminology:**

Actuator torque at defined positions (0, 45, 90°) and actuation direction (opening, closing)

Abbreviation	Meaning of abbreviation	Torque at different movements	Position specification
<b>Actuation direction → Opening</b>			
BTO	Break to open	Breakaway torque to open	Moving out of the 0° (closed) position
RTO	Run to open	Torque during actuation in the open direction	Position during travel at ~45°
ETO	End to open	Torque to get to the open position	Entering the 90° (open) position
<b>Actuation direction → Closing</b>			
BTC	Break to close	Breakaway torque to close	Moving out of the 90° (open) position
RTC	Run to close	Torque during actuation in the closed direction	Position during travel at ~45°
ETC	End to close	Torque to get to the closed position	Entering the 0° (closed) position

**Note**

When connecting quarter turn actuators, you must observe ISO 5211!

Datasheet – Swivel direction right, asymmetrical yoke

Theoretical torque [Nm] as a function of operating pressure

DFPD-HD-...	Max. torque [kNm]	Transferable torque [kNm] at operating pressure [bar]											
		3.0						3.5					
		BTO	RTO	ETO	BTC	RTC	ETC	BTO	RTO	ETO	BTC	RTC	ETC
9000-235-SY-A-90-RD-F25	9	2.3	0.9	1.2	1.2	0.8	2.5	2.7	1.1	1.5	1.4	1.0	2.9
9000-280-SY-A-90-RD-F25	9	3.3	1.2	1.8	1.7	1.2	3.6	3.8	1.5	2.1	2.0	1.4	4.2
9000-335-SY-A-90-RD-F25	9	4.7	1.8	2.6	2.5	1.8	5.1	5.5	2.1	3.1	2.9	2.1	6.0
18000-335-SY-A-90-RD-F30	18	5.6	2.2	3.1	2.9	2.2	6.1	6.5	2.5	3.6	3.4	2.5	7.1
18000-385-SY-A-90-RD-F30	18	7.4	2.9	4.1	3.9	2.9	8.1	8.7	3.4	4.8	4.6	3.3	9.5
18000-435-SY-A-90-RD-F30	18	9.5	3.7	5.3	5.1	3.8	10.5	11.1	4.3	6.1	5.9	4.3	12.2
18000-485-SY-A-90-RD-F30	18	11.8	4.7	6.5	6.3	4.7	13.1	13.8	5.4	7.6	7.4	5.5	15.2
32000-385-SY-A-90-RD-F35	32	9.8	3.8	5.4	5.2	3.7	10.7	11.4	4.4	6.3	6.1	4.4	12.5
32000-435-SY-A-90-RD-F35	32	12.5	4.9	6.9	6.6	4.8	13.7	14.6	5.7	8.1	7.8	5.6	16.1
32000-485-SY-A-90-RD-F35	32	15.6	6.0	8.6	8.3	6.1	17.1	18.2	7.1	10.1	9.7	7.1	20.0
32000-535-SY-A-90-RD-F35	32	19.1	7.4	10.5	10.1	7.4	20.9	22.2	8.7	12.3	11.8	8.6	24.4

Theoretical torque [Nm] as a function of operating pressure

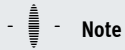
DFPD-HD-...	Max. torque [kNm]	Transferable torque [kNm] at operating pressure [bar]											
		4.0						4.5					
		BTO	RTO	ETO	BTC	RTC	ETC	BTO	RTO	ETO	BTC	RTC	ETC
9000-235-SY-A-90-RD-F25	9	3.1	1.2	1.7	1.6	1.2	3.3	3.5	1.3	1.9	1.8	1.3	3.8
9000-280-SY-A-90-RD-F25	9	4.4	1.7	2.4	2.3	1.7	4.8	5.0	1.9	2.7	2.6	1.9	5.4
9000-335-SY-A-90-RD-F25	9	6.3	2.4	3.5	3.3	2.4	6.9	7.2	2.8	3.9	3.8	2.8	7.8
18000-335-SY-A-90-RD-F30	18	7.5	2.9	4.1	4.0	3.0	8.2	8.4	3.3	4.6	4.4	3.2	9.2
18000-385-SY-A-90-RD-F30	18	10.0	3.9	5.5	5.3	3.9	10.9	11.2	4.4	6.1	5.9	4.3	12.2
18000-435-SY-A-90-RD-F30	18	12.8	5.1	7.1	6.8	5.1	14.1	14.3	5.6	7.8	7.5	5.5	15.6
18000-485-SY-A-90-RD-F30	18	15.9	6.2	8.8	8.5	6.3	17.5	–	–	–	–	–	–
32000-385-SY-A-90-RD-F35	32	13.1	5.1	7.2	6.9	5.1	14.3	14.8	5.7	8.2	7.8	5.7	16.2
32000-435-SY-A-90-RD-F35	32	16.8	6.5	9.3	8.9	6.5	18.3	18.9	7.4	10.5	10.1	7.3	20.7
32000-485-SY-A-90-RD-F35	32	20.9	8.1	11.5	11.1	8.1	22.9	23.5	9.2	13.1	12.5	9.1	25.8
32000-535-SY-A-90-RD-F35	32	25.5	9.9	14.1	13.6	9.9	27.9	28.7	11.2	15.8	15.3	11.1	31.4



## Datasheet – Swivel direction right, asymmetrical yoke

Theoretical torque [Nm] as a function of operating pressure													
DFPD-HD-...	Max. torque [kNm]	Transferable torque [kNm] at operating pressure [bar]											
		5.0						5.5					
		BTO	RTO	ETO	BTC	RTC	ETC	BTO	RTO	ETO	BTC	RTC	ETC
9000-235-SY-A-90-RD-F25	9	3.9	1.5	2.1	2.1	1.5	4.2	4.3	1.7	2.3	2.2	1.6	4.6
9000-280-SY-A-90-RD-F25	9	5.5	2.1	3.1	2.9	2.1	6.1	6.1	2.4	3.3	3.2	2.3	6.6
9000-335-SY-A-90-RD-F25	9	7.9	3.1	4.4	4.2	3.1	8.6	–	–	–	–	–	–
18000-335-SY-A-90-RD-F30	18	9.4	3.6	5.2	5.0	3.6	10.3	10.3	4.1	5.6	5.4	4.0	11.3
18000-385-SY-A-90-RD-F30	18	12.5	4.8	6.9	6.6	4.8	13.6	13.7	5.3	7.5	7.2	5.3	14.9
18000-435-SY-A-90-RD-F30	18	15.9	6.2	8.8	8.5	6.1	17.4	–	–	–	–	–	–
18000-485-SY-A-90-RD-F30	18	–	–	–	–	–	–	–	–	–	–	–	–
32000-385-SY-A-90-RD-F35	32	16.4	6.5	9.1	8.7	6.3	18.0	18.1	7.1	10.1	9.6	7.0	19.8
32000-435-SY-A-90-RD-F35	32	21.1	8.2	11.6	11.2	8.1	23.0	23.2	9.1	12.8	12.3	8.9	25.3
32000-485-SY-A-90-RD-F35	32	26.2	10.2	14.5	13.9	10.1	28.6	28.8	11.2	15.9	15.3	11.1	31.5
32000-535-SY-A-90-RD-F35	32	–	–	–	–	–	–	–	–	–	–	–	–

Theoretical torque [Nm] as a function of operating pressure													
DFPD-HD-...	Max. torque [kNm]	Transferable torque [kNm] at operating pressure [bar]											
		6.0						7.0					
		BTO	RTO	ETO	BTC	RTC	ETC	BTO	RTO	ETO	BTC	RTC	ETC
9000-235-SY-A-90-RD-F25	9	4.7	1.8	2.6	2.4	1.8	5.1	5.5	2.1	3.0	2.9	2.1	5.9
9000-280-SY-A-90-RD-F25	9	6.6	2.6	3.7	3.5	2.5	7.3	7.8	3.1	4.3	4.1	3.0	8.5
9000-335-SY-A-90-RD-F25	9	–	–	–	–	–	–	–	–	–	–	–	–
18000-335-SY-A-90-RD-F30	18	11.3	4.4	6.3	6.0	4.3	12.4	13.3	5.2	7.3	7.1	5.2	14.5
18000-385-SY-A-90-RD-F30	18	15.0	5.8	8.3	7.9	5.8	16.4	–	–	–	–	–	–
18000-435-SY-A-90-RD-F30	18	–	–	–	–	–	–	–	–	–	–	–	–
18000-485-SY-A-90-RD-F30	18	–	–	–	–	–	–	–	–	–	–	–	–
32000-385-SY-A-90-RD-F35	32	19.8	7.7	10.9	10.5	7.6	21.6	23.1	9.0	12.8	12.3	8.9	25.2
32000-435-SY-A-90-RD-F35	32	25.3	9.8	14.0	13.4	9.8	27.6	29.6	11.5	16.3	15.7	11.4	32.3
32000-485-SY-A-90-RD-F35	32	–	–	–	–	–	–	–	–	–	–	–	–
32000-535-SY-A-90-RD-F35	32	–	–	–	–	–	–	–	–	–	–	–	–

**Note**

Torque at higher operating pressure is possible on request.

## Datasheet – Swivel direction right, symmetrical yoke


Theoretical torque [Nm] as a function of operating pressure													
DFPD-HD-...	Max. torque [kNm]	Transferable torque [kNm] at operating pressure [bar]											
		3.0						3.5					
		BTO	RTO	ETO	BTC	RTC	ETC	BTO	RTO	ETO	BTC	RTC	ETC
9000-235-SY-Y-90-RD-F25	9	1.4	0.9	1.6	1.4	0.9	1.5	1.7	1.1	1.8	1.7	1.1	1.8
9000-280-SY-Y-90-RD-F25	9	2.1	1.3	2.3	2.1	1.2	2.2	2.4	1.5	2.6	2.4	1.5	2.6
9000-335-SY-Y-90-RD-F25	9	3.0	1.8	3.2	2.9	1.8	3.2	3.5	2.1	3.8	3.4	2.1	3.8
9000-385-SY-Y-90-RD-F25	9	3.9	2.4	4.3	3.9	2.4	4.3	4.6	2.9	5.1	4.6	2.8	5.1
9000-435-SY-Y-90-RD-F25	9	5.1	3.1	5.5	5.1	3.1	5.5	5.9	3.7	6.5	5.9	3.6	6.4
18000-335-SY-Y-90-RD-F30	18	3.5	2.2	3.9	3.5	2.1	3.8	4.1	2.6	4.5	4.1	2.5	4.5
18000-385-SY-Y-90-RD-F30	18	4.7	2.9	5.1	4.6	2.9	5.1	5.5	3.4	6.1	5.4	3.4	6.0
18000-435-SY-Y-90-RD-F30	18	6.1	3.7	6.6	6.0	3.7	6.5	7.1	4.41	7.7	7.0	4.3	7.6
18000-485-SY-Y-90-RD-F30	18	7.5	4.6	8.2	7.4	4.6	8.1	8.8	5.4	9.6	8.7	5.4	9.5
18000-535-SY-Y-90-RD-F30	18	9.1	5.7	10.1	9.1	5.6	10.0	10.7	6.6	11.8	10.6	6.6	11.7
18000-585-SY-Y-90-RD-F30	18	10.9	6.8	12.1	10.9	6.8	12.0	12.7	7.9	14.1	12.7	7.9	14.0
32000-385-SY-Y-90-RD-F35	32	6.2	3.8	6.8	6.1	3.8	6.7	7.3	4.5	7.9	7.2	4.4	7.9
32000-435-SY-Y-90-RD-F35	32	8.0	4.9	8.7	7.9	4.9	8.6	9.3	5.8	10.2	9.2	5.7	10.1
32000-485-SY-Y-90-RD-F35	32	9.9	6.1	10.8	9.8	6.1	10.7	11.6	7.2	12.7	11.5	7.1	12.6
32000-535-SY-Y-90-RD-F35	32	12.1	7.5	13.2	12.1	7.4	13.1	14.1	8.8	15.5	14.1	8.7	15.4
32000-585-SY-Y-90-RD-F35	32	14.5	9.0	15.9	14.4	9.0	15.8	17.0	10.5	18.6	16.9	10.5	18.4
32000-635-SY-Y-90-RD-F35	32	17.2	10.6	18.8	17.1	10.6	18.7	20.1	12.4	21.9	20.0	12.4	21.8

Theoretical torque [Nm] as a function of operating pressure													
DFPD-HD-...	Max. torque [kNm]	Transferable torque [kNm] at operating pressure [bar]											
		4.0						4.5					
		BTO	RTO	ETO	BTC	RTC	ETC	BTO	RTO	ETO	BTC	RTC	ETC
9000-235-SY-Y-90-RD-F25	9	1.9	1.2	2.1	1.9	1.2	2.1	2.2	1.4	2.4	2.2	1.4	2.4
9000-280-SY-Y-90-RD-F25	9	2.8	1.7	3.1	2.7	1.7	3.0	3.2	2.0	3.5	3.2	1.9	3.5
9000-335-SY-Y-90-RD-F25	9	4.0	2.5	4.4	3.9	2.4	4.3	4.5	2.8	5.1	4.5	2.8	5.0
9000-385-SY-Y-90-RD-F25	9	5.3	3.3	5.8	5.3	3.3	5.7	6.1	3.7	6.7	6.0	3.8	6.6
9000-435-SY-Y-90-RD-F25	9	6.8	4.2	7.4	6.8	4.2	7.4	7.7	4.8	8.5	7.7	4.8	8.5
18000-335-SY-Y-90-RD-F30	18	4.8	2.9	5.2	4.7	2.9	5.1	5.3	3.3	5.9	5.3	3.3	5.9
18000-385-SY-Y-90-RD-F30	18	6.3	3.9	6.9	6.2	3.9	6.8	7.1	4.4	7.9	7.1	4.4	7.8
18000-435-SY-Y-90-RD-F30	18	8.1	5.1	8.9	8.1	5.0	8.8	9.1	5.6	10.0	8.9	5.6	9.9
18000-485-SY-Y-90-RD-F30	18	10.1	6.2	11.1	10.0	6.2	10.9	11.3	7.1	12.5	11.2	7.0	12.4
18000-535-SY-Y-90-RD-F30	18	12.2	7.6	13.4	12.1	7.5	13.3	13.7	8.5	15.2	13.7	8.5	15.1
18000-585-SY-Y-90-RD-F30	18	14.6	9.1	16.1	14.5	9.1	16.0	-	-	-	-	-	-
32000-385-SY-Y-90-RD-F35	32	8.3	5.1	9.1	8.2	5.1	9.1	9.4	5.8	10.3	9.3	5.8	10.2
32000-435-SY-Y-90-RD-F35	32	10.7	6.6	11.7	10.5	6.5	11.5	12.1	7.5	13.2	11.9	7.4	13.1
32000-485-SY-Y-90-RD-F35	32	13.3	8.2	14.5	13.2	8.2	14.4	15.0	9.3	16.4	14.9	9.3	16.3
32000-535-SY-Y-90-RD-F35	32	16.2	10.1	17.7	16.1	10.0	17.6	18.3	11.3	20.0	18.2	11.3	19.9
32000-585-SY-Y-90-RD-F35	32	19.4	12.1	21.2	19.3	12.0	21.1	21.9	13.6	23.9	21.8	13.6	23.8
32000-635-SY-Y-90-RD-F35	32	23.0	14.2	25.1	22.8	14.2	25.0	25.9	16.1	28.3	25.8	16.0	28.2

## Datasheet – Swivel direction right, symmetrical yoke

Theoretical torque [Nm] as a function of operating pressure													
DFPD-HD-...	Max. torque [kNm]	Transferable torque [kNm] at operating pressure [bar]											
		5.0						5.5					
		BTO	RTO	ETO	BTC	RTC	ETC	BTO	RTO	ETO	BTC	RTC	ETC
9000-235-SY-Y-90-RD-F25	9	2.5	1.5	2.7	2.5	1.5	2.7	2.7	1.7	3.0	2.7	1.7	2.9
9000-280-SY-Y-90-RD-F25	9	3.5	2.2	3.9	3.5	2.2	3.8	3.9	2.4	4.3	3.9	2.4	4.2
9000-335-SY-Y-90-RD-F25	9	5.1	3.1	5.5	5.0	3.1	5.5	5.6	3.5	6.1	5.5	3.4	6.0
9000-385-SY-Y-90-RD-F25	9	6.7	4.2	7.3	6.7	4.1	7.3	7.4	4.6	8.1	7.3	4.6	8.0
9000-435-SY-Y-90-RD-F25	9	–	–	–	–	–	–	–	–	–	–	–	–
18000-335-SY-Y-90-RD-F30	18	6.0	3.7	6.6	5.9	3.7	6.5	6.6	4.1	7.3	6.5	4.1	7.2
18000-385-SY-Y-90-RD-F30	18	7.9	4.9	8.7	7.9	4.9	8.6	8.8	5.5	9.6	8.7	5.4	9.5
18000-435-SY-Y-90-RD-F30	18	10.2	6.3	11.2	10.1	6.3	11.0	11.2	6.9	12.3	11.1	6.9	12.2
18000-485-SY-Y-90-RD-F30	18	12.7	7.9	13.9	12.6	7.8	13.8	–	–	–	–	–	–
18000-535-SY-Y-90-RD-F30	18	15.3	9.6	16.9	15.2	9.5	16.7	–	–	–	–	–	–
18000-585-SY-Y-90-RD-F30	18	–	–	–	–	–	–	–	–	–	–	–	–
32000-385-SY-Y-90-RD-F35	32	10.5	6.5	11.5	10.4	6.5	11.3	11.6	7.2	12.6	11.4	7.1	12.5
32000-435-SY-Y-90-RD-F35	32	13.4	8.3	14.7	13.3	8.3	14.5	14.8	9.2	16.2	14.6	9.1	15.9
32000-485-SY-Y-90-RD-F35	32	16.7	10.4	18.2	16.5	10.3	18.1	18.4	11.4	20.1	18.2	11.3	19.9
32000-535-SY-Y-90-RD-F35	32	20.4	12.6	22.2	20.2	12.6	22.1	22.4	13.9	24.5	22.2	13.8	24.3
32000-585-SY-Y-90-RD-F35	32	24.4	15.1	26.7	24.2	15.1	26.5	26.8	16.7	29.3	26.7	16.6	29.2
32000-635-SY-Y-90-RD-F35	32	28.8	17.9	31.5	28.6	17.8	31.3	–	–	–	–	–	–

Theoretical torque [Nm] as a function of operating pressure													
DFPD-HD-...	Max. torque [kNm]	Transferable torque [kNm] at operating pressure [bar]											
		6.0						7.0					
		BTO	RTO	ETO	BTC	RTC	ETC	BTO	RTO	ETO	BTC	RTC	ETC
9000-235-SY-Y-90-RD-F25	9	3.0	1.9	3.3	2.9	1.8	3.2	3.5	2.2	3.8	3.4	2.1	3.8
9000-280-SY-Y-90-RD-F25	9	4.3	2.6	4.7	4.2	2.6	4.6	4.9	3.1	5.4	4.9	3.1	5.4
9000-335-SY-Y-90-RD-F25	9	6.1	3.8	6.7	6.0	3.8	6.6	7.1	4.4	7.8	7.0	4.4	7.7
9000-385-SY-Y-90-RD-F25	9	–	–	–	–	–	–	–	–	–	–	–	–
9000-435-SY-Y-90-RD-F25	9	–	–	–	–	–	–	–	–	–	–	–	–
18000-335-SY-Y-90-RD-F30	18	7.3	4.5	7.9	7.2	4.4	7.8	8.5	5.3	9.3	8.4	5.2	9.1
18000-385-SY-Y-90-RD-F30	18	9.6	5.9	10.5	9.5	5.9	10.4	11.2	6.9	12.3	11.1	6.9	12.1
18000-435-SY-Y-90-RD-F30	18	12.3	7.6	13.4	12.1	7.6	13.3	14.1	8.8	15.6	13.9	8.7	15.4
18000-485-SY-Y-90-RD-F30	18	–	–	–	–	–	–	–	–	–	–	–	–
18000-535-SY-Y-90-RD-F30	18	–	–	–	–	–	–	–	–	–	–	–	–
18000-585-SY-Y-90-RD-F30	18	–	–	–	–	–	–	–	–	–	–	–	–
32000-385-SY-Y-90-RD-F35	32	12.6	7.8	13.8	12.5	7.8	13.6	14.7	9.2	16.1	14.6	9.1	15.9
32000-435-SY-Y-90-RD-F35	32	16.1	10.0	17.6	15.9	9.9	17.5	18.9	11.7	20.6	18.6	11.6	20.4
32000-485-SY-Y-90-RD-F35	32	20.1	12.5	21.9	19.9	12.4	21.7	23.4	14.5	25.6	23.2	14.4	25.4
32000-535-SY-Y-90-RD-F35	32	24.5	15.2	26.7	24.3	15.1	26.5	28.6	17.7	31.2	28.4	17.6	30.9
32000-585-SY-Y-90-RD-F35	32	29.3	18.2	32.0	29.1	18.1	31.8	–	–	–	–	–	–
32000-635-SY-Y-90-RD-F35	32	–	–	–	–	–	–	–	–	–	–	–	–

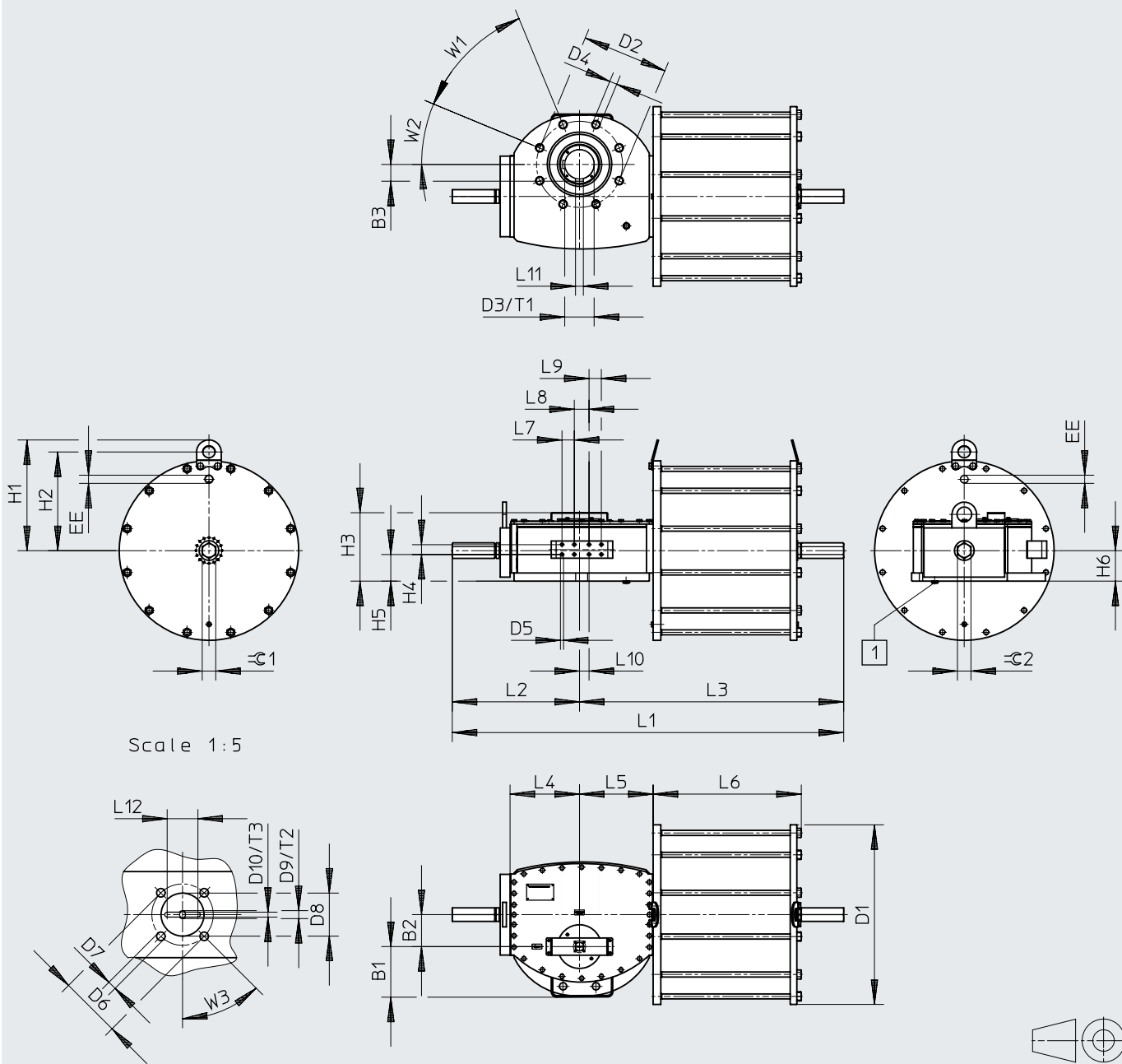
 **Note**

Torque at higher operating pressure is possible on request.

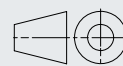
Datasheet – Swivel direction right

Dimensions  
Size 9000

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[1] Valve



## Datasheet – Swivel direction right

DFPD-HD-9000-...	B1	B2	B3 +0.1	D1 ∅	D2 ∅ F25	D3 ∅ +0.3/+0.2	D4	D5 ∅	D6 ∅ F05	D7 ∅	D8 ∅	D9	D10
DFPD-HD-9000-235-SY-A-90-RD-F25	149	85	35	310	254	60	M16	12	50	7	35	M6	4
DFPD-HD-9000-235-SY-Y-90-RD-F25													
DFPD-HD-9000-280-SY-A-90-RD-F25				355									
DFPD-HD-9000-280-SY-Y-90-RD-F25													
DFPD-HD-9000-335-SY-A-90-RD-F25				410									
DFPD-HD-9000-335-SY-Y-90-RD-F25													
DFPD-HD-9000-385-SY-Y-90-RD-F25				470									
DFPD-HD-9000-435-SY-Y-90-RD-F25				516									

DFPD-HD-9000-...	EE	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4	L5	L6
DFPD-HD-9000-235-SY-A-90-RD-F25	1/2	244	102	211	40	68	90.5	1260	414	846	185	206	461
DFPD-HD-9000-235-SY-Y-90-RD-F25													
DFPD-HD-9000-280-SY-A-90-RD-F25		266	120										
DFPD-HD-9000-280-SY-Y-90-RD-F25													
DFPD-HD-9000-335-SY-A-90-RD-F25		293	147										
DFPD-HD-9000-335-SY-Y-90-RD-F25													
DFPD-HD-9000-385-SY-Y-90-RD-F25		323	168										
DFPD-HD-9000-435-SY-Y-90-RD-F25	1	346	190										

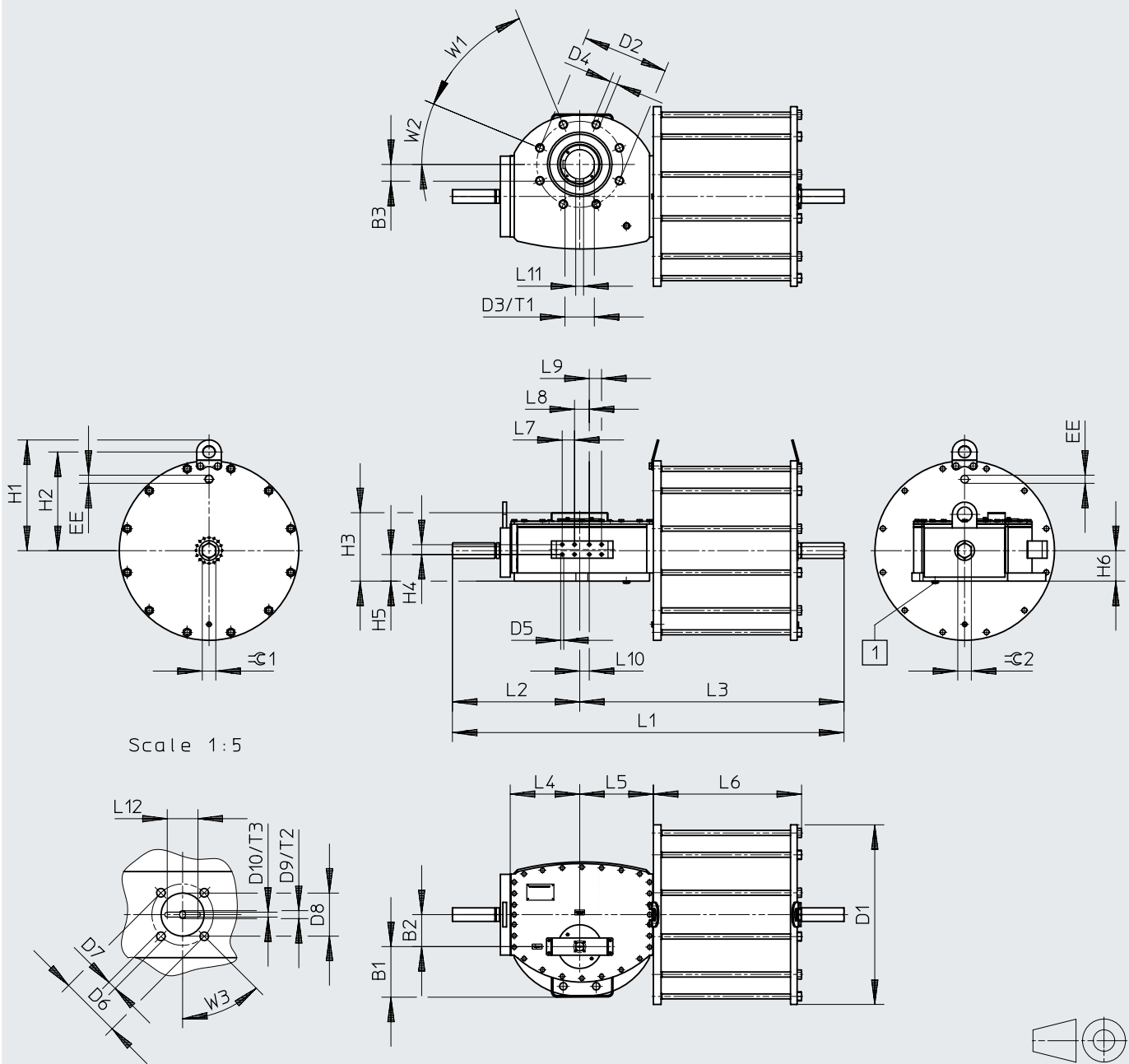
DFPD-HD-9000-...	L7	L8	L10	L11 +0.12/+0.5	L12	T1	T2	T3	W1	W2	W3	≈ 1	≈ 2
DFPD-HD-9000-235-SY-A-90-RD-F25	55	55	10	18	25	160	6	5	45°	22.5°	45°	55	55
DFPD-HD-9000-235-SY-Y-90-RD-F25													
DFPD-HD-9000-280-SY-A-90-RD-F25													
DFPD-HD-9000-280-SY-Y-90-RD-F25													
DFPD-HD-9000-335-SY-A-90-RD-F25													
DFPD-HD-9000-335-SY-Y-90-RD-F25													
DFPD-HD-9000-385-SY-Y-90-RD-F25													
DFPD-HD-9000-435-SY-Y-90-RD-F25													

Datasheet – Swivel direction right

Dimensions

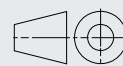
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Size 18000



Scale 1:5

[1] Valve



Datasheet – Swivel direction right

DFPD-HD-18000-...	B1	B2	B3 +0.1	D1 ∅	D2 ∅ F30	D3 ∅ +0.3/+0.2	D4	D5 ∅	D6 ∅ F05	D7 ∅	D8 ∅	D9	D10
DFPD-HD-18000-335-SY-A-90-RD-F30	175	100	41	410	298	72	M20	12	50	7	35	M6	4
DFPD-HD-18000-335-SY-Y-90-RD-F30													
DFPD-HD-18000-385-SY-A-90-RD-F30				470									
DFPD-HD-18000-385-SY-Y-90-RD-F30													
DFPD-HD-18000-435-SY-A-90-RD-F30				516									
DFPD-HD-18000-435-SY-Y-90-RD-F30													
DFPD-HD-18000-485-SY-A-90-RD-F30				578									
DFPD-HD-18000-485-SY-Y-90-RD-F30													
DFPD-HD-18000-535-SY-Y-90-RD-F30				629									
DFPD-HD-18000-585-SY-Y-90-RD-F30	680												

DFPD-HD-18000-...	EE	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4	L5	L6
DFPD-HD-18000-335-SY-A-90-RD-F30	1/2	293	147	247	40	93	108.5	1325	445	880	216	246	462
DFPD-HD-18000-335-SY-Y-90-RD-F30													
DFPD-HD-18000-385-SY-A-90-RD-F30	1	323	168										
DFPD-HD-18000-385-SY-Y-90-RD-F30													
DFPD-HD-18000-435-SY-A-90-RD-F30		346	190										
DFPD-HD-18000-435-SY-Y-90-RD-F30													
DFPD-HD-18000-485-SY-A-90-RD-F30		376	215										
DFPD-HD-18000-485-SY-Y-90-RD-F30													
DFPD-HD-18000-535-SY-Y-90-RD-F30		401	240										
DFPD-HD-18000-585-SY-Y-90-RD-F30	427	265											

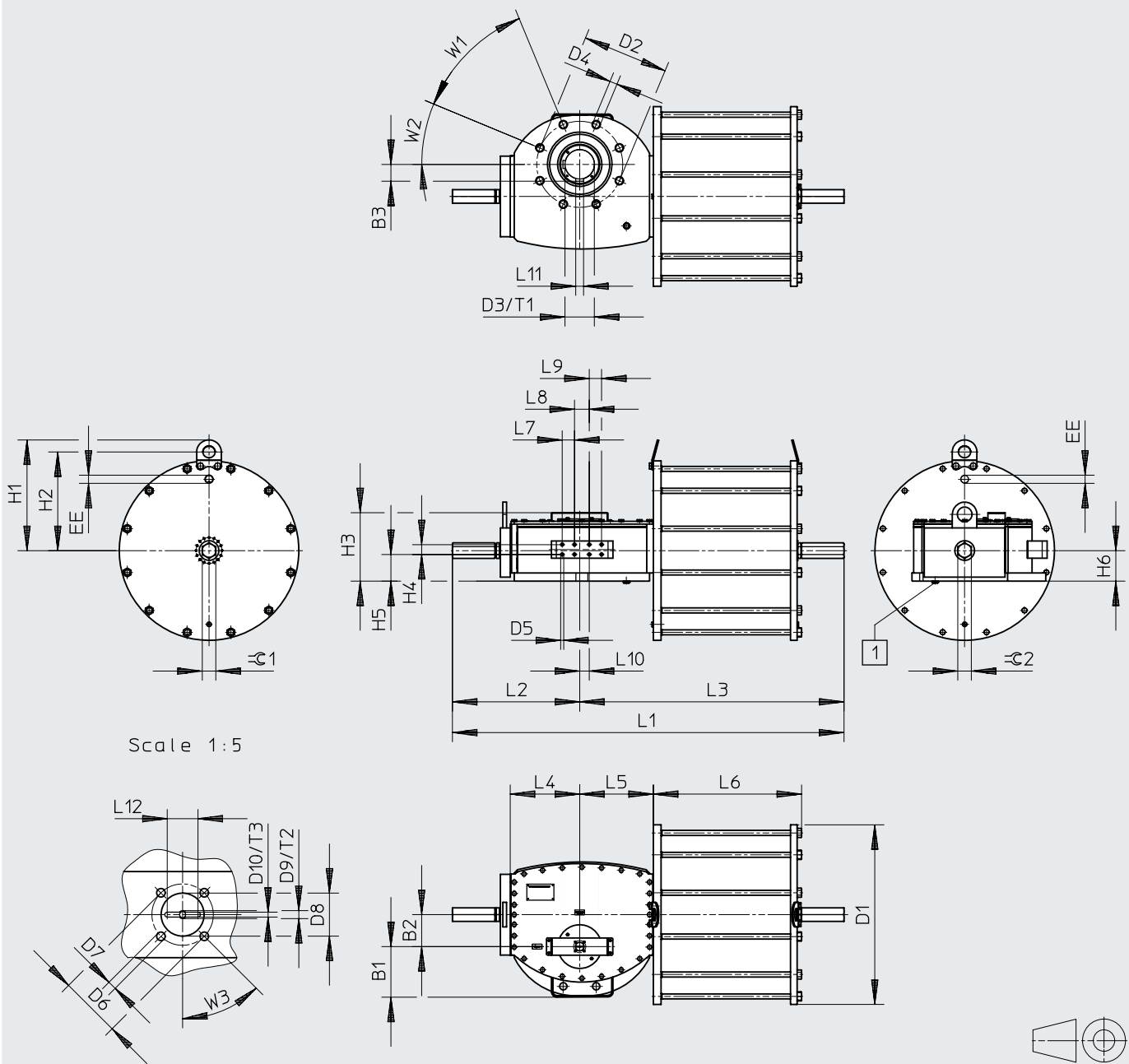
DFPD-HD-18000-...	L7	L8	L10	L11 +0.15/+0.07	L12	T1	T2	T3	W1	W2	W3	≈C 1	≈C 2
DFPD-HD-18000-335-SY-A-90-RD-F30	55	55	14.5	20	25	200	6	5	45°	22.5°	45°	55	55
DFPD-HD-18000-335-SY-Y-90-RD-F30													
DFPD-HD-18000-385-SY-A-90-RD-F30													
DFPD-HD-18000-385-SY-Y-90-RD-F30													
DFPD-HD-18000-435-SY-A-90-RD-F30													
DFPD-HD-18000-435-SY-Y-90-RD-F30													
DFPD-HD-18000-485-SY-A-90-RD-F30													
DFPD-HD-18000-485-SY-Y-90-RD-F30													
DFPD-HD-18000-535-SY-Y-90-RD-F30													
DFPD-HD-18000-585-SY-Y-90-RD-F30													

Datasheet – Swivel direction right

Dimensions

Size 32000

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[1] Valve



Datasheet – Swivel direction right

DFPD-HD-32000-...	B1	B2	B3 +0.1	D1 ∅	D2 ∅ F35	D3 ∅ +0.3/+0.2	D4	D5 ∅	D6 ∅ F05	D7 ∅	D8 ∅	D9	D10
DFPD-HD-32000-385-SY-A-90-RD-F35	205	130	68	470	350	120	M30	12	50	7	35	M6	4
DFPD-HD-32000-385-SY-Y-90-RD-F35													
DFPD-HD-32000-435-SY-A-90-RD-F35				516									
DFPD-HD-32000-435-SY-Y-90-RD-F35													
DFPD-HD-32000-485-SY-A-90-RD-F35				578									
DFPD-HD-32000-485-SY-Y-90-RD-F35													
DFPD-HD-32000-535-SY-A-90-RD-F35				629									
DFPD-HD-32000-535-SY-Y-90-RD-F35													
DFPD-HD-32000-585-SY-Y-90-RD-F35				680									
DFPD-HD-32000-635-SY-Y-90-RD-F35	730												

DFPD-HD-32000-...	EE	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4	L5	L6		
DFPD-HD-32000-385-SY-A-90-RD-F35	1	323	168	278	40	108	124	1592	517	1075	282	300	602		
DFPD-HD-32000-385-SY-Y-90-RD-F35															
DFPD-HD-32000-435-SY-A-90-RD-F35														346	190
DFPD-HD-32000-435-SY-Y-90-RD-F35															
DFPD-HD-32000-485-SY-A-90-RD-F35														376	215
DFPD-HD-32000-485-SY-Y-90-RD-F35															
DFPD-HD-32000-535-SY-A-90-RD-F35														401	240
DFPD-HD-32000-535-SY-Y-90-RD-F35															
DFPD-HD-32000-585-SY-Y-90-RD-F35														427	265
DFPD-HD-32000-635-SY-Y-90-RD-F35	450	290													

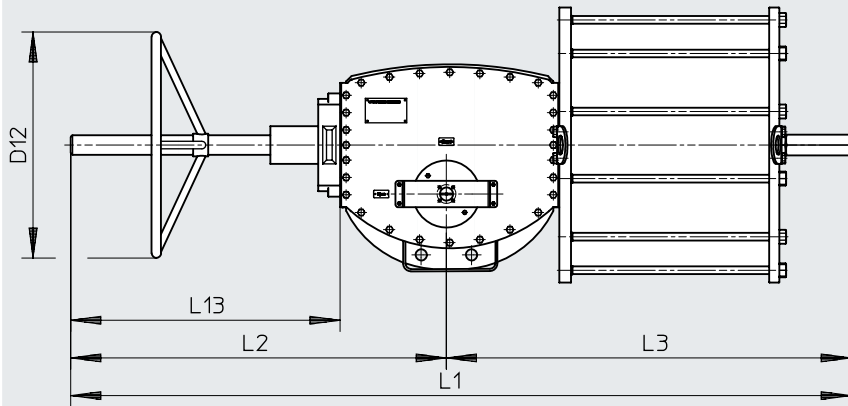
DFPD-HD-32000-...	L7	L8	L10	L11 +0.18/+0.08	L12	T1	T2	T3	W1	W2	W3	≈C 1	≈C 2	
DFPD-HD-32000-385-SY-A-90-RD-F35	50	60	39	32	25	230	6	5	45°	22.5°	45°	55	55	
DFPD-HD-32000-385-SY-Y-90-RD-F35														
DFPD-HD-32000-435-SY-A-90-RD-F35														
DFPD-HD-32000-435-SY-Y-90-RD-F35														
DFPD-HD-32000-485-SY-A-90-RD-F35														
DFPD-HD-32000-485-SY-Y-90-RD-F35														
DFPD-HD-32000-535-SY-A-90-RD-F35														
DFPD-HD-32000-535-SY-Y-90-RD-F35														
DFPD-HD-32000-585-SY-Y-90-RD-F35														
DFPD-HD-32000-635-SY-Y-90-RD-F35														

Datasheet – Swivel direction right, with manual override

Dimensions

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Size 9000



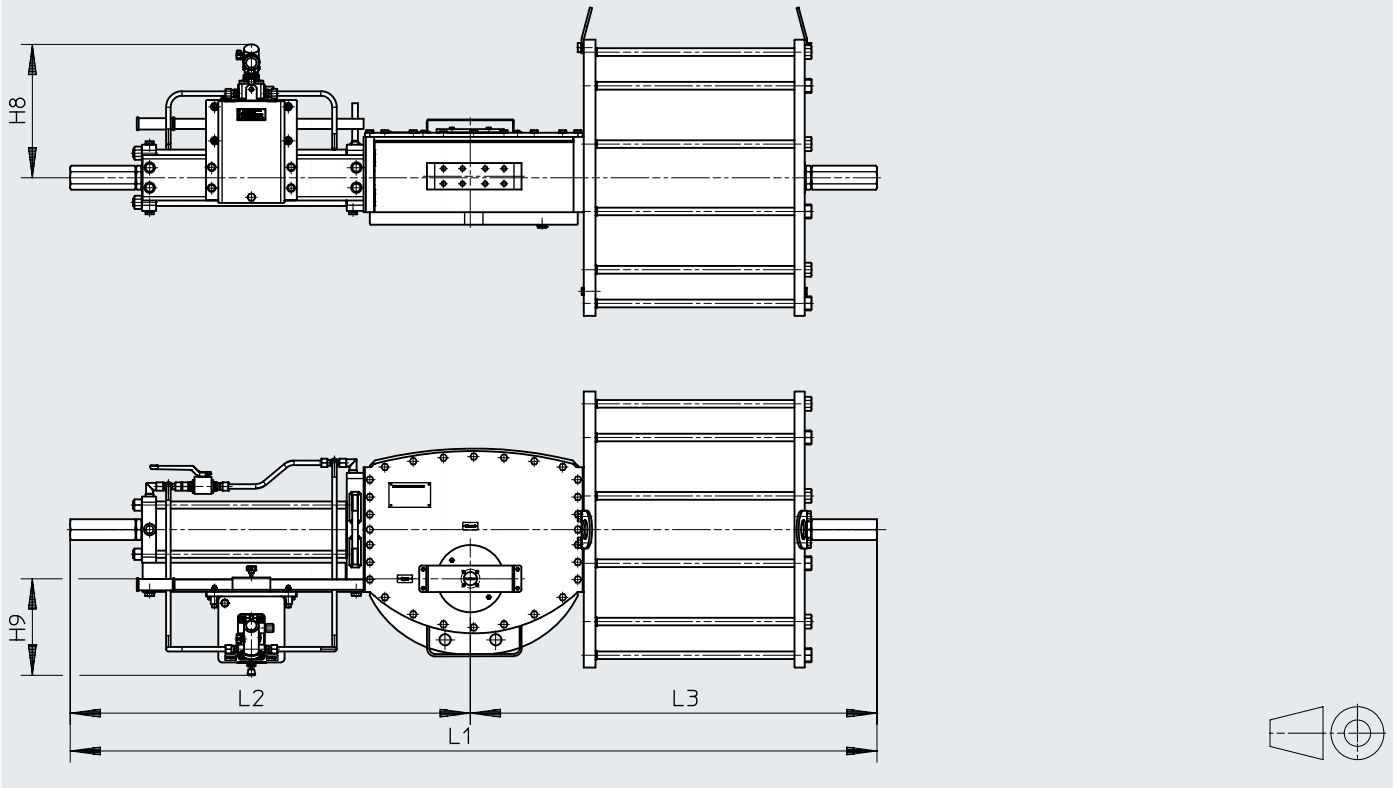
DFPD-HD-9000-...	D12 ∅ max.	L1 max.	L2 max.	L3	L13 max.
DFPD-HD-9000-235-SY-A-90-RD-F25-MW	650	1800	901	846	716
DFPD-HD-9000-235-SY-Y-90-RD-F25-MW					
DFPD-HD-9000-280-SY-A-90-RD-F25-MW					
DFPD-HD-9000-280-SY-Y-90-RD-F25-MW					
DFPD-HD-9000-335-SY-A-90-RD-F25-MW					
DFPD-HD-9000-335-SY-Y-90-RD-F25-MW					
DFPD-HD-9000-385-SY-Y-90-RD-F25-MW					
DFPD-HD-9000-435-SY-Y-90-RD-F25-MW					

Datasheet – Swivel direction right, with manual override, hydraulically supported

Dimensions

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Size 9000



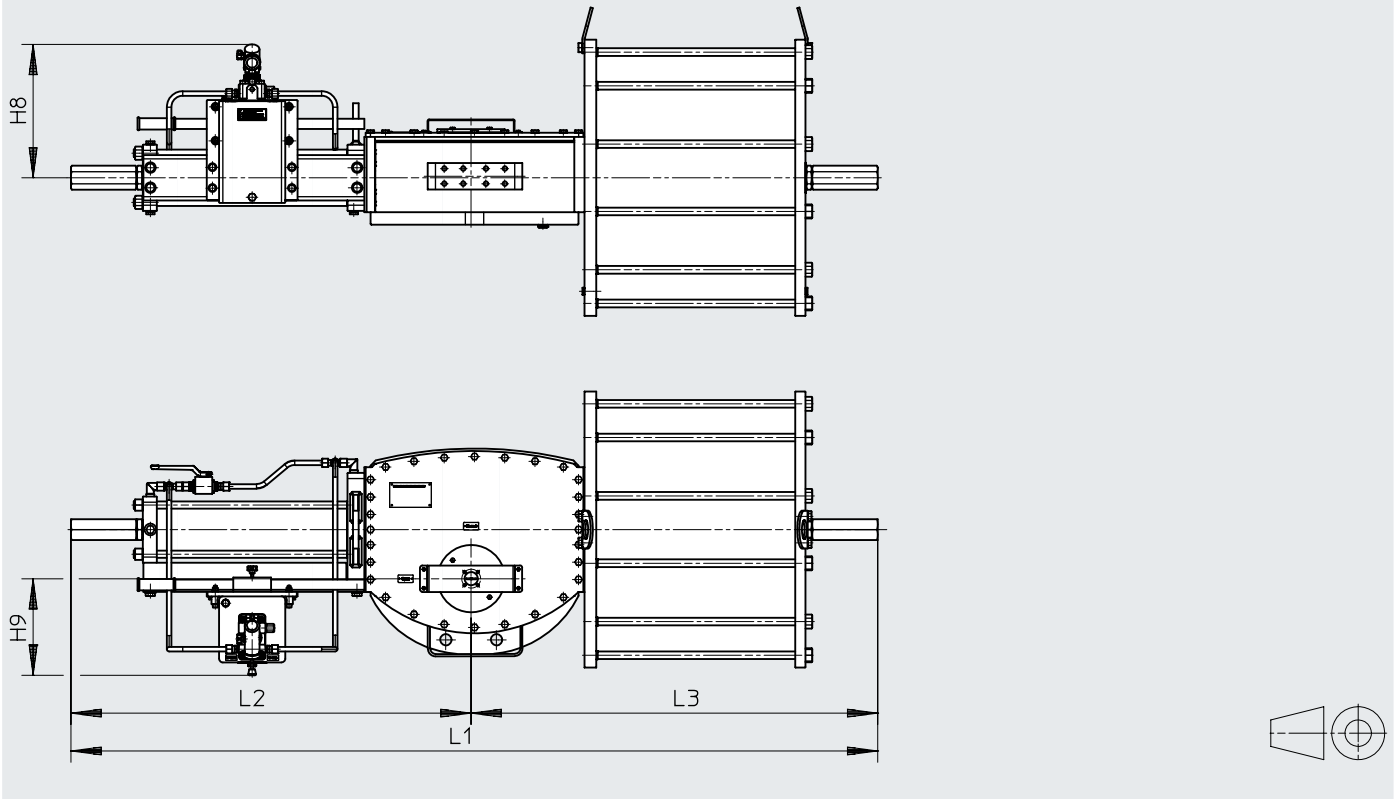
DFPD-HD-9000-...	H8	H9	L1	L2	L3
DFPD-HD-9000-235-SY-A-90-RD-F25-HP	339	288	1683	837	846
DFPD-HD-9000-235-SY-Y-90-RD-F25-HP					
DFPD-HD-9000-280-SY-A-90-RD-F25-HP					
DFPD-HD-9000-280-SY-Y-90-RD-F25-HP					
DFPD-HD-9000-335-SY-A-90-RD-F25-HP					
DFPD-HD-9000-335-SY-Y-90-RD-F25-HP					
DFPD-HD-9000-385-SY-Y-90-RD-F25-HP					
DFPD-HD-9000-435-SY-Y-90-RD-F25-HP					

Datasheet – Swivel direction right, with manual override, hydraulically supported

Dimensions

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Size 18000



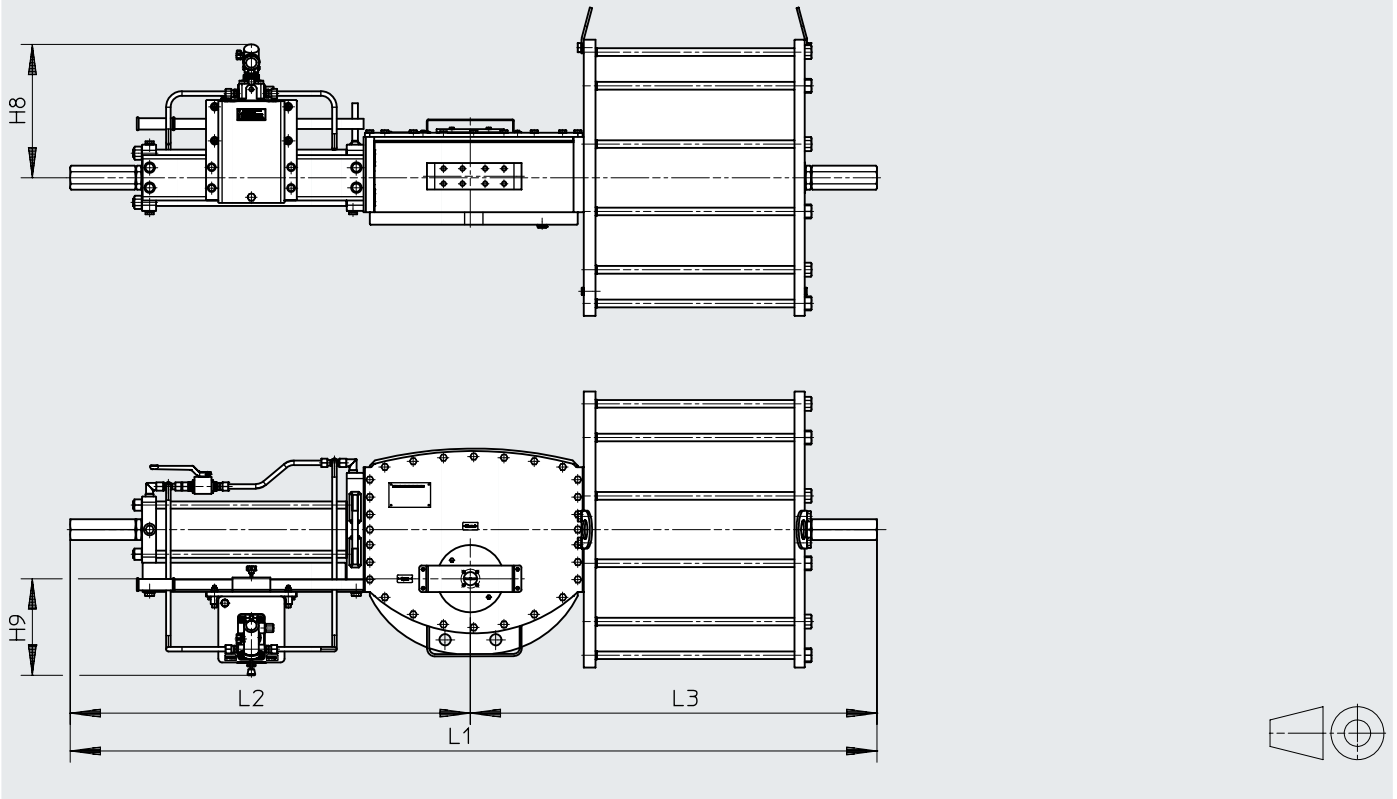
DFPD-HD-18000-...	H8	H9	L1	L2	L3
DFPD-HD-18000-335-SY-A-90-RD-F30-HP	353	273	1750	868	880
DFPD-HD-18000-335-SY-Y-90-RD-F30-HP					
DFPD-HD-18000-385-SY-A-90-RD-F30-HP					
DFPD-HD-18000-385-SY-Y-90-RD-F30-HP					
DFPD-HD-18000-435-SY-A-90-RD-F30-HP					
DFPD-HD-18000-435-SY-Y-90-RD-F30-HP					
DFPD-HD-18000-485-SY-A-90-RD-F30-HP					
DFPD-HD-18000-485-SY-Y-90-RD-F30-HP					
DFPD-HD-18000-535-SY-Y-90-RD-F30-HP					
DFPD-HD-18000-585-SY-Y-90-RD-F30-HP					

Datasheet – Swivel direction right, with manual override, hydraulically supported

Dimensions

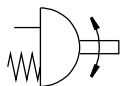
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Size 32000



DFPD-HD-32000-...	H8	H9	L1	L2	L3
DFPD-HD-32000-385-SY-A-90-RD-F35-HP	353	273	2134	1059	1075
DFPD-HD-32000-385-SY-Y-90-RD-F35-HP					
DFPD-HD-32000-435-SY-A-90-RD-F35-HP					
DFPD-HD-32000-435-SY-Y-90-RD-F35-HP					
DFPD-HD-32000-485-SY-A-90-RD-F35-HP					
DFPD-HD-32000-485-SY-Y-90-RD-F35-HP					
DFPD-HD-32000-535-SY-A-90-RD-F35-HP					
DFPD-HD-32000-535-SY-Y-90-RD-F35-HP					
DFPD-HD-32000-585-SY-Y-90-RD-F35-HP					
DFPD-HD-32000-635-SY-Y-90-RD-F35-HP					

## Datasheet



Swivel angle  
90°



Size  
9000, 18000, 32000



Torque  
9000 ... 32000 Nm



General technical data			
Size	9000	18000	32000
Flange hole pattern	F25	F30	F35
Shaft connection	V60	V72	V120
Shaft connection depth [mm]	160	200	230
Pneumatic connection	G1/2, G1	G1	G1
Design	Scotch yoke system		
Mode of operation	Single-acting		
Cushioning	None		
Process valve connection to standard	ISO 5211		
Note about the torque	Increasing the operating pressure above the limit given in the table is not permitted; doing so will cause the actuator to overload.		
Swivel angle [°]	90		
End-position adjusting range at 0° [°]	-5 ... +5		
End-position adjusting range at 90° [°]	-5 ... +5		
Position sensing	Optical		

Operating and environmental conditions			
	9000	18000	32000
Operating pressure [bar]	1 ... +8.5		
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]		
Note on the operating/pilot medium	Pressure dew point 10°C below ambient temperature/temperature of the medium		
Degree of protection	IP66M IP67M		
Note on the operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)		
Ambient temperature [°C]	-20 ... +80		
CE marking (see declaration of conformity)	To EU Explosion Protection Directive (ATEX) To EU Machinery Directive		
→ www.festo.com			
Certified for safety function to ISO 13849 and IEC 61508 (SIL)	Product can be used in SRP/CS up to SIL 2 (Low Demand)		
Certificate-issuing authority	German Technical Control Board North (TÜV Nord) 212170802		
UKCA marking (see declaration of conformity)	UK regs EX		
ATEX category for gas	II 2G		
Type of (ignition) protection for gas	Ex h IIB T6...T4 Gb X		
ATEX category for dust	II 2D		
Type of (ignition) protection for dust	Ex h IIC T85°C...T105°C Db X		
Explosion ambient temperature [°C]	-20°C ≤ Ta ≤ +80°C		

## Datasheet – Torque

Materials	
Housing	Steel
End cap	Steel
Piston	Steel
Piston rod	Hard-chrome-plated steel
Tie rods	Steel
Cylinder barrel	Steel, nickel-plated
Stop screws	Steel
Spring	Spring steel
Spring rod	Hard-chrome-plated steel
Socket	Bronze
	PTFE
Seals	NBR
	TPE-U(PU)

**Terminology:**

Actuator torque at defined positions (0, 45, 90°) and actuation direction (opening, closing)

Abbreviation	Meaning of abbreviation	Torque at different movements	Position specification
<b>Actuation direction → Opening</b>			
BTO	Break to open	Breakaway torque to open	Moving out of the 0° (closed) position
RTO	Run to open	Torque during actuation in the open direction	Position during travel at ~45°
ETO	End to open	Torque to get to the open position	Entering the 90° (open) position
<b>Actuation direction → Closing</b>			
BTC	Break to close	Breakaway torque to close	Moving out of the 90° (open) position
RTC	Run to close	Torque during actuation in the closed direction	Position during travel at ~45°
ETC	End to close	Torque to get to the closed position	Entering the 0° (closed) position

**Note**

When connecting quarter turn actuators, you must observe ISO 5211!

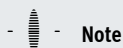
Datasheet – Swivel direction right, asymmetrical Yoke, NC, closing with spring force

Theoretical torque [Nm] as a function of operating pressure																
DFPD-HD-...	Max. torque [kNm]	Transferable torque [kNm] at operating pressure [bar]														
		Spring			3.0			3.5			4.0			4.5		
		BTC	RTC	ETC	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
9000-280-SY-A-90-RS1-F25	9	2.0	1.2	2.4	-	-	-	-	-	-	-	-	-	-	-	-
9000-335-SY-A-90-RS1-F25	9	2.0	1.2	2.3	-	-	-	3.1	0.7	0.7	3.9	1.0	1.2	4.7	1.3	1.6
9000-385-SY-A-90-RS1-F25	9	2.0	1.2	2.3	3.8	1.0	1.1	4.9	1.4	1.7	5.9	1.9	2.3	6.9	2.1	2.7
9000-385-SY-A-90-RS2-F25	9	3.3	2.0	3.7	-	-	-	-	-	-	-	-	-	5.8	1.4	1.5
9000-435-SY-A-90-RS2-F25	9	3.3	2.0	3.7	-	-	-	5.5	1.3	1.4	6.9	1.9	2.2	8.3	2.3	2.8
9000-385-SY-A-90-RS3-F25	9	3.5	2.2	4.3	-	-	-	-	-	-	-	-	-	-	-	-
9000-435-SY-A-90-RS3-F25	9	3.5	2.2	4.3	-	-	-	5.0	1.1	1.1	6.3	1.7	1.9	7.9	2.2	2.5
9000-435-SY-A-90-RS4-F25	9	4.3	2.6	5.1	-	-	-	-	-	-	-	-	-	7.0	1.6	1.5
18000-385-SY-A-90-RS1-F30	18	5.6	3.2	5.2	-	-	-	-	-	-	-	-	-	-	-	-
18000-435-SY-A-90-RS1-F30	18	5.5	3.1	5.2	-	-	-	-	-	-	-	-	-	9.1	2.0	1.8
18000-485-SY-A-90-RS1-F30	18	5.5	3.1	5.1	-	-	-	-	-	-	10.6	2.4	2.5	12.3	3.2	3.5
18000-435-SY-A-90-RS2-F30	18	6.4	3.8	7.1	-	-	-	-	-	-	-	-	-	-	-	-
18000-485-SY-A-90-RS2-F30	18	6.4	3.8	7.1	-	-	-	-	-	-	8.9	2.0	1.7	10.7	2.6	2.7
18000-535-SY-A-90-RS2-F30	18	6.4	3.8	7.1	-	-	-	9.7	2.0	2.0	12.1	3.1	3.3	14.4	3.9	4.5
18000-585-SY-A-90-RS2-F30	18	6.4	3.8	7.1	10.1	2.2	2.2	13.0	3.4	3.8	15.6	4.3	5.2	-	-	-
18000-535-SY-A-90-RS3-F30	18	7.9	4.6	8.5	-	-	-	-	-	-	10.9	2.4	2.2	13.1	3.2	3.3
18000-585-SY-A-90-RS3-F30	18	7.9	4.6	8.5	-	-	-	-	-	-	14.4	3.7	4.0	17.1	4.6	5.4
18000-535-SY-A-90-RS4-F30	18	8.9	5.4	10.6	-	-	-	-	-	-	9.1	1.8	1.3	11.3	2.6	2.4
18000-585-SY-A-90-RS4-F30	18	8.9	5.4	10.6	-	-	-	9.9	2.1	1.7	12.6	3.1	3.1	15.3	4.0	4.4
32000-435-SY-A-90-RS1-F35	32	8.1	5.0	10.2	-	-	-	-	-	-	-	-	-	-	-	-
32000-485-SY-A-90-RS1-F35	32	8.1	5.0	10.2	-	-	-	-	-	-	10.5	2.2	2.2	-	-	-
32000-535-SY-A-90-RS1-F35	32	8.1	5.0	10.2	-	-	-	11.8	2.8	2.9	15.1	4.1	4.7	-	-	-
32000-585-SY-A-90-RS1-F35	32	8.1	5.0	10.2	12.4	3.1	3.3	16.3	4.6	5.4	20.1	6.1	7.5	-	-	-
32000-635-SY-A-90-RS1-F35	32	8.1	5.0	10.3	16.6	4.7	5.6	21.1	6.5	8.1	25.7	8.3	10.6	-	-	-
32000-485-SY-A-90-RS2-F35	32	10.1	6.1	11.7	-	-	-	-	-	-	-	-	-	-	-	-
32000-535-SY-A-90-RS2-F35	32	10.1	6.1	11.7	-	-	-	-	-	-	-	-	-	-	-	-
32000-585-SY-A-90-RS2-F35	32	10.1	6.1	11.7	-	-	-	14.8	3.2	3.2	18.6	4.8	5.3	-	-	-
32000-635-SY-A-90-RS2-F35	32	10.1	6.1	11.8	15.1	3.3	3.4	19.6	5.2	5.9	24.2	7.1	8.4	-	-	-
32000-485-SY-A-90-RS3-F35	32	10.1	6.8	14.1	-	-	-	-	-	-	-	-	-	-	-	-
32000-535-SY-A-90-RS3-F35	32	10.8	6.8	14.1	-	-	-	-	-	-	-	-	-	-	-	-
32000-585-SY-A-90-RS3-F35	32	10.8	6.8	14.1	-	-	-	-	-	-	16.2	4.1	4.4	-	-	-
32000-635-SY-A-90-RS3-F35	32	10.9	6.8	14.2	-	-	-	17.2	4.5	5.0	21.7	6.3	7.5	-	-	-
32000-685-SY-A-90-RS3-F35	32	10.9	6.8	14.2	17.1	4.5	4.9	22.4	6.6	7.9	27.6	8.7	10.8	-	-	-
32000-535-SY-A-90-RS4-F35	32	14.6	8.8	17.1	-	-	-	-	-	-	-	-	-	-	-	-
32000-585-SY-A-90-RS4-F35	32	14.6	8.8	17.2	-	-	-	-	-	-	-	-	-	-	-	-
32000-635-SY-A-90-RS4-F35	32	14.6	8.8	17.2	-	-	-	-	-	-	-	-	-	-	-	-
32000-685-SY-A-90-RS4-F35	32	14.6	8.8	17.2	-	-	-	-	-	-	24.6	6.1	6.5	-	-	-
32000-735-SY-A-90-RS3-F35	32	10.9	6.8	14.2	21.8	6.4	7.6	27.9	8.8	10.9	-	-	-	-	-	-
32000-735-SY-A-90-RS4-F35	32	14.6	8.8	17.2	-	-	-	24.9	6.2	6.7	30.9	8.7	10.1	-	-	-



## Datasheet – Swivel direction right, asymmetrical Yoke, NC, closing with spring force

Theoretical torque [Nm] as a function of operating pressure																
DFPD-HD-...	Max. torque [kNm]	Transferable torque [kNm] at operating pressure [bar]														
		Spring			5.0			5.5			6.0			7.0		
		BTC	RTC	ETC	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
9000-280-SY-A-90-RS1-F25	9	2.0	1.2	2.4	3.1	0.7	0.7	3.7	0.9	1.0	4.2	1.2	1.3	5.3	1.6	2.0
9000-335-SY-A-90-RS1-F25	9	2.0	1.2	2.3	5.5	1.7	2.1	6.3	2.0	2.5	7.1	2.3	2.9	8.7	2.9	3.8
9000-385-SY-A-90-RS1-F25	9	2.0	1.2	2.3	8.1	2.7	3.5	9.1	3.1	4.1	-	-	-	-	-	-
9000-385-SY-A-90-RS2-F25	9	3.3	2.0	3.7	6.7	1.8	2.0	7.7	2.2	2.6	8.8	2.7	3.2	-	-	-
9000-435-SY-A-90-RS2-F25	9	3.3	2.0	3.7	-	-	-	-	-	-	-	-	-	-	-	-
9000-385-SY-A-90-RS3-F25	9	3.5	2.2	4.3	6.1	1.6	1.7	7.2	2.0	2.3	8.2	2.4	2.9	-	-	-
9000-435-SY-A-90-RS3-F25	9	3.5	2.2	4.3	9.0	2.8	3.4	-	-	-	-	-	-	-	-	-
9000-435-SY-A-90-RS4-F25	9	4.3	2.6	5.1	8.2	2.2	2.5	-	-	-	-	-	-	-	-	-
18000-385-SY-A-90-RS1-F30	18	5.6	3.2	5.2	7.3	1.4	0.9	8.5	1.8	1.5	9.7	2.0	2.0	12.3	3.1	3.4
18000-435-SY-A-90-RS1-F30	18	5.5	3.1	5.2	10.7	2.5	2.5	12.3	3.2	3.4	13.9	3.8	4.3	-	-	-
18000-485-SY-A-90-RS1-F30	18	5.5	3.1	5.1	14.6	4.4	4.7	16.1	4.5	5.4	-	-	-	-	-	-
18000-435-SY-A-90-RS2-F30	18	6.4	3.8	7.1	8.9	2.0	1.8	10.4	2.3	2.4	12.0	3.0	3.3	14.9	4.1	4.8
18000-485-SY-A-90-RS2-F30	18	6.4	3.8	7.1	12.6	3.3	3.6	14.4	3.9	4.6	16.3	4.6	5.5	-	-	-
18000-535-SY-A-90-RS2-F30	18	6.4	3.8	7.1	16.6	4.7	5.7	-	-	-	-	-	-	-	-	-
18000-585-SY-A-90-RS2-F30	18	6.4	3.8	7.1	-	-	-	-	-	-	-	-	-	-	-	-
18000-535-SY-A-90-RS3-F30	18	7.9	4.6	8.5	15.4	4.0	4.5	-	-	-	-	-	-	-	-	-
18000-585-SY-A-90-RS3-F30	18	7.9	4.6	8.5	-	-	-	-	-	-	-	-	-	-	-	-
18000-535-SY-A-90-RS4-F30	18	8.9	5.4	10.6	13.6	3.4	3.6	15.9	4.2	4.7	-	-	-	-	-	-
18000-585-SY-A-90-RS4-F30	18	8.9	5.4	10.6	-	-	-	-	-	-	-	-	-	-	-	-
32000-435-SY-A-90-RS1-F35	32	8.1	5.0	10.2	10.6	2.3	2.3	12.8	3.2	3.4	14.9	4.1	4.6	19.1	5.8	7.0
32000-485-SY-A-90-RS1-F35	32	8.1	5.0	10.2	15.8	4.4	5.1	18.4	5.5	6.6	21.0	6.5	8.0	26.3	8.6	11.0
32000-535-SY-A-90-RS1-F35	32	8.1	5.0	10.2	21.5	6.7	8.3	24.7	8.0	10.1	27.9	9.2	11.9	34.4	11.8	15.4
32000-585-SY-A-90-RS1-F35	32	8.1	5.0	10.2	27.8	9.2	11.8	31.7	10.7	13.9	-	-	-	-	-	-
32000-635-SY-A-90-RS1-F35	32	8.1	5.0	10.3	34.7	11.9	15.6	-	-	-	-	-	-	-	-	-
32000-485-SY-A-90-RS2-F35	32	10.1	6.1	11.7	14.2	2.9	2.9	16.9	4.1	4.4	19.5	5.2	5.8	24.8	7.3	8.8
32000-535-SY-A-90-RS2-F35	32	10.1	6.1	11.7	20.0	5.4	6.1	23.2	6.7	7.9	26.4	8.0	9.6	32.9	10.5	13.2
32000-585-SY-A-90-RS2-F35	32	10.1	6.1	11.7	26.3	7.9	9.6	30.2	9.4	11.7	34.0	10.9	13.8	-	-	-
32000-635-SY-A-90-RS2-F35	32	10.1	6.1	11.8	33.2	10.6	13.4	-	-	-	-	-	-	-	-	-
32000-485-SY-A-90-RS3-F35	32	10.1	6.8	14.1	-	-	-	14.5	3.4	3.5	17.1	4.5	4.9	22.4	6.6	7.9
32000-535-SY-A-90-RS3-F35	32	10.8	6.8	14.1	17.6	4.6	5.2	20.1	5.9	7.0	24.0	7.2	8.8	30.4	9.8	12.3
32000-585-SY-A-90-RS3-F35	32	10.8	6.8	14.1	23.9	7.2	8.7	27.7	8.7	10.8	31.6	10.2	13.0	-	-	-
32000-635-SY-A-90-RS3-F35	32	10.9	6.8	14.2	30.8	9.9	12.5	-	-	-	-	-	-	-	-	-
32000-685-SY-A-90-RS3-F35	32	10.9	6.8	14.2	-	-	-	-	-	-	-	-	-	-	-	-
32000-535-SY-A-90-RS4-F35	32	14.6	8.8	17.1	-	-	-	-	-	-	21.0	4.5	4.5	27.4	7.3	8.1
32000-585-SY-A-90-RS4-F35	32	14.6	8.8	17.2	20.9	4.5	4.5	24.7	6.1	6.6	28.6	7.7	8.7	-	-	-
32000-635-SY-A-90-RS4-F35	32	14.6	8.8	17.2	27.8	7.4	8.3	32.3	9.2	10.8	-	-	-	-	-	-
32000-685-SY-A-90-RS4-F35	32	14.6	8.8	17.2	-	-	-	-	-	-	-	-	-	-	-	-
32000-735-SY-A-90-RS3-F35	32	10.9	6.8	14.2	-	-	-	-	-	-	-	-	-	-	-	-
32000-735-SY-A-90-RS4-F35	32	14.6	8.8	17.2	-	-	-	-	-	-	-	-	-	-	-	-



## Note

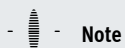
Torque at higher operating pressure is possible on request.

Datasheet – Swivel direction right and left, symmetrical Yoke, NC, closing with spring force

Theoretical torque [Nm] as a function of operating pressure																
DFPD-HD-...	Max. torque [kNm]	Transferable torque [kNm] at operating pressure [bar]														
		Spring			3.0			3.5			4.0			4.5		
		BTC	RTC	ETC	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
9000-280-SY-Y-90-R/LS1-F25	9	2.4	1.1	1.5	-	-	-	-	-	-	-	-	-	1.7	0.7	0.7
9000-335-SY-Y-90-R/LS1-F25	9	2.4	1.1	1.5	1.4	0.4	0.4	2.0	0.8	0.9	2.5	1.1	1.5	3.1	1.5	2.0
9000-385-SY-Y-90-R/LS1-F25	9	2.4	1.1	1.5	2.4	1.1	1.5	3.1	1.6	2.2	3.8	2.0	2.9	4.5	2.3	3.4
9000-435-SY-Y-90-R/LS1-F25	9	2.4	1.1	1.5	3.5	1.8	2.7	4.4	2.4	3.6	5.3	2.9	4.6	6.1	3.2	4.9
9000-335-SY-Y-90-R/LS2-F25	9	3.8	1.8	2.4	-	-	-	-	-	-	-	-	-	2.3	0.8	0.6
9000-385-SY-Y-90-R/LS2-F25	9	3.8	1.8	2.4	-	-	-	-	-	-	2.9	1.1	1.2	3.7	1.7	1.9
9000-435-SY-Y-90-R/LS2-F25	9	3.8	1.8	2.4	2.7	0.9	0.9	3.5	1.6	1.9	4.4	2.1	2.8	5.3	2.6	3.5
9000-335-SY-Y-90-R/LS3-F25	9	4.1	2.0	2.7	-	-	-	-	-	-	-	-	-	-	-	-
9000-385-SY-Y-90-R/LS3-F25	9	4.1	2.0	2.7	-	-	-	-	-	-	2.5	0.8	0.8	3.5	1.5	1.6
9000-435-SY-Y-90-R/LS3-F25	9	4.1	2.0	2.7	2.3	0.5	0.5	3.2	1.3	1.5	4.0	1.9	2.4	5.1	2.4	3.2
9000-385-SY-Y-90-R/LS4-F25	9	5.0	2.4	3.2	-	-	-	-	-	-	-	-	-	-	-	-
9000-435-SY-Y-90-R/LS4-F25	9	5.0	2.4	3.2	-	-	-	-	-	-	3.5	1.3	1.3	6.9	2.5	3.2
18000-385-SY-Y-90-R/LS1-F30	18	6.3	2.8	3.3	-	-	-	-	-	-	-	-	-	-	-	-
18000-435-SY-Y-90-R/LS1-F30	18	6.3	2.8	3.3	-	-	-	-	-	-	4.7	1.2	1.1	5.8	2.4	2.4
18000-485-SY-Y-90-R/LS1-F30	18	6.3	2.8	3.2	-	-	-	5.4	1.9	1.9	6.7	2.9	3.3	7.9	3.6	4.4
18000-535-SY-Y-90-R/LS1-F30	18	6.3	2.8	3.2	5.8	2.3	2.3	7.4	3.3	4.0	9.0	4.3	5.7	10.3	5.0	6.7
18000-585-SY-Y-90-R/LS1-F30	18	6.3	2.8	3.2	7.7	3.5	4.3	9.5	4.7	6.4	11.4	5.9	8.4	12.9	6.4	9.2
18000-385-SY-Y-90-R/LS2-F30	18	7.5	3.5	4.5	-	-	-	-	-	-	-	-	-	-	-	-
18000-435-SY-Y-90-R/LS2-F30	18	7.5	3.5	4.5	-	-	-	-	-	-	-	-	-	4.8	1.8	1.4
18000-485-SY-Y-90-R/LS2-F30	18	7.4	3.5	4.5	-	-	-	-	-	-	5.5	1.9	1.9	6.9	3.0	3.4
18000-535-SY-Y-90-R/LS2-F30	18	7.4	3.5	4.5	4.6	1.0	1.0	6.1	2.5	2.7	7.7	3.5	4.4	9.3	4.4	5.7
18000-585-SY-Y-90-R/LS2-F30	18	7.4	3.5	4.5	6.4	2.7	3.0	8.3	3.9	5.0	10.2	5.1	7.1	11.8	5.8	8.2
18000-535-SY-Y-90-R/LS3-F30	18	9.1	4.4	5.4	-	-	-	5.5	2.0	1.4	7.0	2.9	2.9	8.5	3.7	4.3
18000-585-SY-Y-90-R/LS3-F30	18	9.1	4.4	5.4	-	-	-	7.6	3.2	3.4	9.3	4.2	5.1	11.0	5.2	6.8
18000-535-SY-Y-90-R/LS4-F30	18	10.4	5.2	6.8	-	-	-	-	-	-	5.8	2.2	1.7	7.3	3.0	3.1
18000-585-SY-Y-90-R/LS4-F30	18	10.4	5.2	6.8	-	-	-	6.4	2.5	2.3	8.1	3.5	3.9	9.9	4.5	5.6
32000-435-SY-Y-90-R/LS1-F35	32	9.5	4.7	6.4	-	-	-	-	-	-	-	-	-	-	-	-
32000-485-SY-Y-90-R/LS1-F35	32	9.5	4.7	6.4	-	-	-	5.0	1.1	1.1	6.7	2.7	2.9	-	-	-
32000-535-SY-Y-90-R/LS1-F35	32	9.5	4.7	6.4	5.5	1.7	1.6	7.5	3.3	3.9	9.6	4.6	6.1	-	-	-
32000-585-SY-Y-90-R/LS1-F35	32	9.5	4.7	6.4	7.9	3.6	4.3	10.4	5.1	7.0	12.8	6.7	9.7	-	-	-
32000-635-SY-Y-90-R/LS1-F35	32	9.5	4.7	6.5	10.6	5.3	7.2	13.5	7.1	10.4	16.3	8.9	13.5	-	-	-
32000-435-SY-Y-90-R/LS2-F35	32	11.7	5.6	7.4	-	-	-	-	-	-	-	-	-	-	-	-
32000-485-SY-Y-90-R/LS2-F35	32	11.7	5.6	7.4	-	-	-	-	-	-	-	-	-	-	-	-
32000-535-SY-Y-90-R/LS2-F35	32	11.7	5.6	7.4	-	-	-	-	-	-	8.6	3.4	3.4	-	-	-
32000-585-SY-Y-90-R/LS2-F35	32	11.7	5.6	7.4	7.0	1.6	1.6	9.4	3.9	4.3	11.9	5.5	6.9	-	-	-
32000-635-SY-Y-90-R/LS2-F35	32	11.7	5.6	7.4	9.6	4.0	4.5	12.5	5.9	7.6	15.4	7.8	10.8	-	-	-
32000-685-SY-Y-90-R/LS2-F35	32	11.7	5.6	7.4	12.4	5.9	7.6	15.8	8.0	11.2	19.2	10.1	14.9	-	-	-
32000-485-SY-Y-90-R/LS3-F35	32	12.6	6.4	8.9	-	-	-	-	-	-	-	-	-	-	-	-
32000-535-SY-Y-90-R/LS3-F35	32	12.6	6.4	8.9	-	-	-	-	-	-	7.1	2.3	2.3	-	-	-
32000-585-SY-Y-90-R/LS3-F35	32	12.7	6.4	8.9	-	-	-	7.9	3.1	3.1	10.3	4.7	5.8	-	-	-
32000-635-SY-Y-90-R/LS3-F35	32	12.7	6.4	8.9	8.1	3.2	3.4	10.9	5.1	6.5	13.8	7.0	9.7	-	-	-
32000-685-SY-Y-90-R/LS3-F35	32	12.7	6.4	8.9	10.9	5.1	6.4	14.2	7.2	10.1	17.6	9.3	13.8	-	-	-
32000-735-SY-Y-90-R/LS3-F35	32	12.6	6.4	8.9	13.9	7.0	9.8	17.8	9.4	14.0	21.7	11.9	18.2	-	-	-
32000-535-SY-Y-90-R/LS4-F35	32	16.9	8.2	10.8	-	-	-	-	-	-	-	-	-	-	-	-
32000-585-SY-Y-90-R/LS4-F35	32	17.0	8.2	10.8	-	-	-	-	-	-	-	-	-	-	-	-
32000-635-SY-Y-90-R/LS4-F35	32	17.0	8.2	10.8	-	-	-	-	-	-	11.9	4.5	4.5	-	-	-
32000-685-SY-Y-90-R/LS4-F35	32	17.0	8.2	10.8	-	-	-	12.3	4.8	4.9	15.7	7.1	8.6	-	-	-
32000-735-SY-Y-90-R/LS4-F35	32	16.9	8.2	10.8	12.0	4.6	4.6	15.9	7.2	8.8	19.7	9.7	13.0	-	-	-

Datasheet – Swivel direction right and left, symmetrical Yoke, NC, closing with spring force

Theoretical torque [Nm] as a function of operating pressure																
DFPD-HD-...	Max. torque [kNm]	Transferable torque [kNm] at operating pressure [bar]														
		Spring			5.0			5.5			6.0			7.0		
		BTC	RTC	ETC	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO	BTO	RTO	ETO
9000-280-SY-Y-90-R/LS1-F25	9	2.4	1.1	1.5	2.0	0.8	0.9	2.3	1.1	1.4	2.7	1.3	1.7	3.4	1.8	2.5
9000-335-SY-Y-90-R/LS1-F25	9	2.4	1.1	1.5	3.5	1.8	2.6	4.0	2.1	3.2	4.5	2.5	3.8	5.6	3.1	4.9
9000-385-SY-Y-90-R/LS1-F25	9	2.4	1.1	1.5	5.1	2.8	4.4	5.8	3.3	5.2	6.5	3.7	5.9	7.9	4.5	7.4
9000-435-SY-Y-90-R/LS1-F25	9	2.4	1.1	1.5	7.0	4.0	6.5	7.9	4.6	7.4	8.7	5.1	8.4	-	-	-
9000-335-SY-Y-90-R/LS2-F25	9	3.8	1.8	2.4	2.8	1.1	1.0	3.1	1.3	1.4	3.6	1.6	2.0	4.7	2.3	3.1
9000-385-SY-Y-90-R/LS2-F25	9	3.8	1.8	2.4	4.2	2.0	2.7	4.9	2.5	3.4	5.6	2.9	4.1	7.0	3.7	5.6
9000-435-SY-Y-90-R/LS2-F25	9	3.8	1.8	2.4	6.1	3.2	4.7	7.0	3.8	5.7	7.9	4.3	6.6	9.6	5.4	8.5
9000-335-SY-Y-90-R/LS3-F25	9	4.1	2.0	2.7	2.3	0.5	0.5	2.8	1.0	1.0	3.3	1.4	1.6	4.3	2.1	2.7
9000-385-SY-Y-90-R/LS3-F25	9	4.1	2.0	2.7	3.9	1.8	2.3	4.6	2.2	3.0	5.2	2.7	3.8	6.6	3.5	5.2
9000-435-SY-Y-90-R/LS3-F25	9	4.1	2.0	2.7	5.8	3.0	4.3	6.6	3.5	5.3	7.5	4.1	6.2	9.2	5.2	8.1
9000-385-SY-Y-90-R/LS4-F25	9	5.0	2.4	3.2	3.4	1.2	1.2	4.0	1.7	1.9	4.7	2.1	2.7	6.1	3.0	4.1
9000-435-SY-Y-90-R/LS4-F25	9	5.0	2.4	3.2	5.2	2.5	3.2	6.1	3.0	4.2	6.9	3.6	5.1	8.7	4.7	7.0
18000-385-SY-Y-90-R/LS1-F30	18	6.3	2.8	3.3	4.6	1.0	0.9	5.4	1.8	1.8	6.2	2.5	2.7	7.8	3.6	4.5
18000-435-SY-Y-90-R/LS1-F30	18	6.3	2.8	3.3	6.8	2.9	3.4	7.8	3.6	4.5	8.9	4.3	5.6	10.9	5.6	7.9
18000-485-SY-Y-90-R/LS1-F30	18	6.3	2.8	3.2	9.3	4.5	6.1	10.6	5.4	7.5	11.9	6.2	8.9	-	-	-
18000-535-SY-Y-90-R/LS1-F30	18	6.3	2.8	3.2	12.1	6.3	9.1	13.6	7.3	10.8	-	-	-	-	-	-
18000-585-SY-Y-90-R/LS1-F30	18	6.3	2.8	3.2	14.1	7.5	11.2	15.9	8.5	13.0	-	-	-	-	-	-
18000-385-SY-Y-90-R/LS2-F30	18	7.5	3.5	4.5	-	-	-	-	-	-	5.0	1.4	1.4	6.6	2.8	3.1
18000-435-SY-Y-90-R/LS2-F30	18	7.5	3.5	4.5	5.6	2.0	2.0	6.6	2.8	3.1	7.6	3.5	4.3	9.7	4.8	6.5
18000-485-SY-Y-90-R/LS2-F30	18	7.4	3.5	4.5	8.0	3.7	4.7	9.3	4.6	6.1	10.6	5.4	7.5	13.2	7.0	10.3
18000-535-SY-Y-90-R/LS2-F30	18	7.4	3.5	4.5	10.8	5.5	7.8	12.4	6.5	9.5	14.0	7.5	11.2	16.6	8.6	12.8
18000-585-SY-Y-90-R/LS2-F30	18	7.4	3.5	4.5	13.9	7.4	11.1	15.3	7.9	11.6	17.1	8.9	13.3	-	-	-
18000-535-SY-Y-90-R/LS3-F30	18	9.1	4.4	5.4	9.9	4.6	5.7	11.4	5.4	7.1	12.9	6.2	8.5	15.8	7.9	11.4
18000-585-SY-Y-90-R/LS3-F30	18	9.1	4.4	5.4	12.8	6.2	8.5	14.5	7.2	10.2	16.3	8.2	11.9	-	-	-
18000-535-SY-Y-90-R/LS4-F30	18	10.4	5.2	6.8	8.8	3.9	4.6	10.2	4.7	6.0	11.7	5.6	7.4	14.6	7.3	10.2
18000-585-SY-Y-90-R/LS4-F30	18	10.4	5.2	6.8	11.6	5.5	7.3	13.4	6.5	9.0	15.1	7.6	10.7	-	-	-
32000-435-SY-Y-90-R/LS1-F35	32	9.5	4.7	6.4	6.8	2.8	3.0	8.1	3.7	4.5	9.5	4.6	6.0	12.2	6.3	9.0
32000-485-SY-Y-90-R/LS1-F35	32	9.5	4.7	6.4	10.0	4.9	6.6	11.7	6.0	8.5	13.4	7.0	10.3	16.8	9.2	14.0
32000-535-SY-Y-90-R/LS1-F35	32	9.5	4.7	6.4	13.7	7.2	10.6	15.7	8.5	12.9	17.8	9.8	15.1	21.9	12.4	19.6
32000-585-SY-Y-90-R/LS1-F35	32	9.5	4.7	6.4	17.7	9.7	15.0	20.2	11.3	17.7	22.6	12.8	20.4	27.5	15.9	25.7
32000-635-SY-Y-90-R/LS1-F35	32	9.5	4.7	6.5	22.1	12.5	19.8	25.0	14.3	23.0	27.9	16.1	26.1	-	-	-
32000-435-SY-Y-90-R/LS2-F35	32	11.7	5.6	7.4	-	-	-	7.2	1.9	1.8	8.5	3.3	3.3	11.2	5.1	6.3
32000-485-SY-Y-90-R/LS2-F35	32	11.7	5.6	7.4	9.1	3.7	3.9	10.8	4.8	5.7	12.4	5.9	7.6	15.8	8.0	11.3
32000-535-SY-Y-90-R/LS2-F35	32	11.7	5.6	7.4	12.7	6.1	7.9	14.8	7.4	10.1	16.8	8.7	12.4	20.9	11.2	16.9
32000-585-SY-Y-90-R/LS2-F35	32	11.7	5.6	7.4	16.8	8.6	12.3	19.2	10.2	15.0	21.7	11.7	17.7	26.6	14.8	23.0
32000-635-SY-Y-90-R/LS2-F35	32	11.7	5.6	7.4	21.2	11.4	17.1	24.1	13.2	20.3	26.9	15.0	23.4	-	-	-
32000-685-SY-Y-90-R/LS2-F35	32	11.7	5.6	7.4	25.9	14.3	22.3	29.2	16.4	25.9	-	-	-	-	-	-
32000-485-SY-Y-90-R/LS3-F35	32	12.6	6.4	8.9	7.5	2.8	2.8	9.2	4.0	4.6	10.9	5.1	6.5	14.3	7.2	10.1
32000-535-SY-Y-90-R/LS3-F35	32	12.6	6.4	8.9	11.2	5.3	6.8	13.2	6.6	9.0	15.3	7.9	11.3	19.4	10.5	15.7
32000-585-SY-Y-90-R/LS3-F35	32	12.7	6.4	8.9	15.2	7.8	11.2	17.7	9.4	13.9	20.1	10.9	16.5	25.0	14.0	21.9
32000-635-SY-Y-90-R/LS3-F35	32	12.7	6.4	8.9	19.6	10.6	16.0	22.5	12.4	19.2	25.4	14.2	22.3	31.2	17.8	28.6
32000-685-SY-Y-90-R/LS3-F35	32	12.7	6.4	8.9	24.3	13.5	21.1	27.7	15.6	24.8	31.1	17.7	28.5	-	-	-
32000-735-SY-Y-90-R/LS3-F35	32	12.6	6.4	8.9	29.4	16.7	26.7	-	-	-	-	-	-	-	-	-
32000-535-SY-Y-90-R/LS4-F35	32	16.9	8.2	10.8	-	-	-	11.3	3.9	3.8	13.4	5.6	6.1	17.5	8.2	10.6
32000-585-SY-Y-90-R/LS4-F35	32	17.0	8.2	10.8	13.3	5.5	6.0	15.7	7.1	8.7	18.2	8.7	11.4	23.1	11.8	16.7
32000-635-SY-Y-90-R/LS4-F35	32	17.0	8.2	10.8	17.7	8.4	10.8	20.6	10.2	14.0	23.5	12.0	17.1	29.3	15.7	23.4
32000-685-SY-Y-90-R/LS4-F35	32	17.0	8.2	10.8	22.4	11.4	16.0	25.8	13.5	19.6	29.1	15.6	23.3	-	-	-
32000-735-SY-Y-90-R/LS4-F35	32	16.9	8.2	10.8	27.5	14.6	21.5	31.3	17.0	25.7	-	-	-	-	-	-



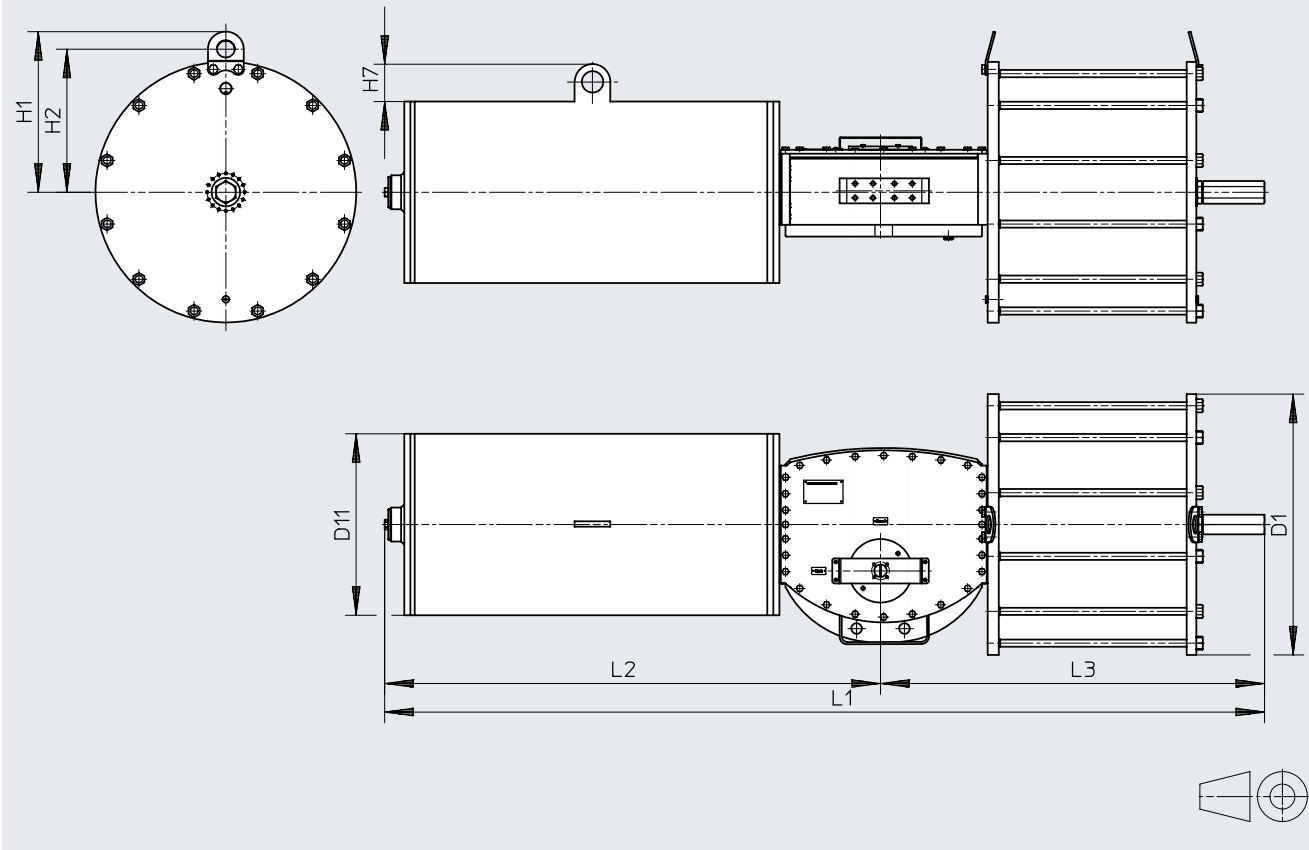
**Note**

Torque at higher operating pressure is possible on request.

Datasheet – Swivel direction right

Dimensions  
Size 9000

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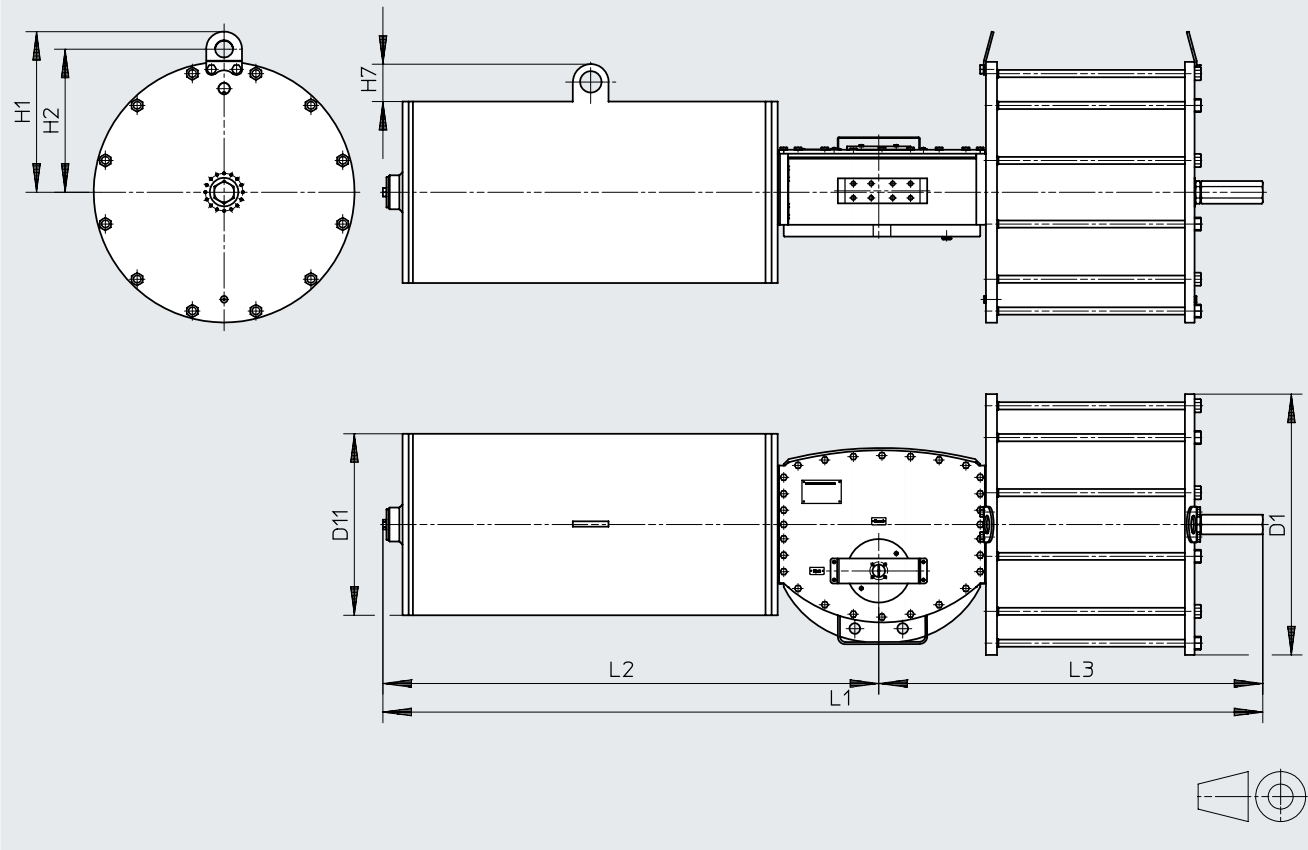
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DFPD-HD-9000-280-SY-A-90-RS1-F25	355	324	266	120	85	1742	896	846			
DFPD-HD-9000-280-SY-Y-90-RS1-F25											
DFPD-HD-9000-335-SY-A-90-RS1-F25	410		293	147							
DFPD-HD-9000-335-SY-Y-90-RS1-F25											
DFPD-HD-9000-385-SY-A-90-RS1-F25	470		323	168							
DFPD-HD-9000-385-SY-Y-90-RS1-F25											
DFPD-HD-9000-435-SY-A-90-RS1-F25	516		346	190							
DFPD-HD-9000-435-SY-Y-90-RS1-F25											
DFPD-HD-9000-335-SY-Y-90-RS2-F25	410		293	147							
DFPD-HD-9000-335-SY-A-90-RS2-F25											
DFPD-HD-9000-385-SY-A-90-RS2-F25	470		323	168							
DFPD-HD-9000-385-SY-Y-90-RS2-F25											
DFPD-HD-9000-435-SY-A-90-RS2-F25	516	346	190								
DFPD-HD-9000-435-SY-Y-90-RS2-F25											
DFPD-HD-9000-335-SY-Y-90-RS3-F25	410	293	147								
DFPD-HD-9000-335-SY-A-90-RS3-F25											
DFPD-HD-9000-385-SY-A-90-RS3-F25	470	323	168								
DFPD-HD-9000-385-SY-Y-90-RS3-F25											
DFPD-HD-9000-435-SY-A-90-RS3-F25	516	346	190								
DFPD-HD-9000-435-SY-Y-90-RS3-F25											
DFPD-HD-9000-385-SY-Y-90-RS4-F25	470	406	323	168	85	1786	940	846			
DFPD-HD-9000-385-SY-A-90-RS4-F25											
DFPD-HD-9000-435-SY-A-90-RS4-F25	516		346	190							
DFPD-HD-9000-435-SY-Y-90-RS4-F25											
DFPD-HD-9000-435-SY-Y-90-RS4-F25	516		406	346		190	85		1850	1004	846
DFPD-HD-9000-435-SY-A-90-RS4-F25											

Datasheet – Swivel direction right

Dimensions

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Size 18000



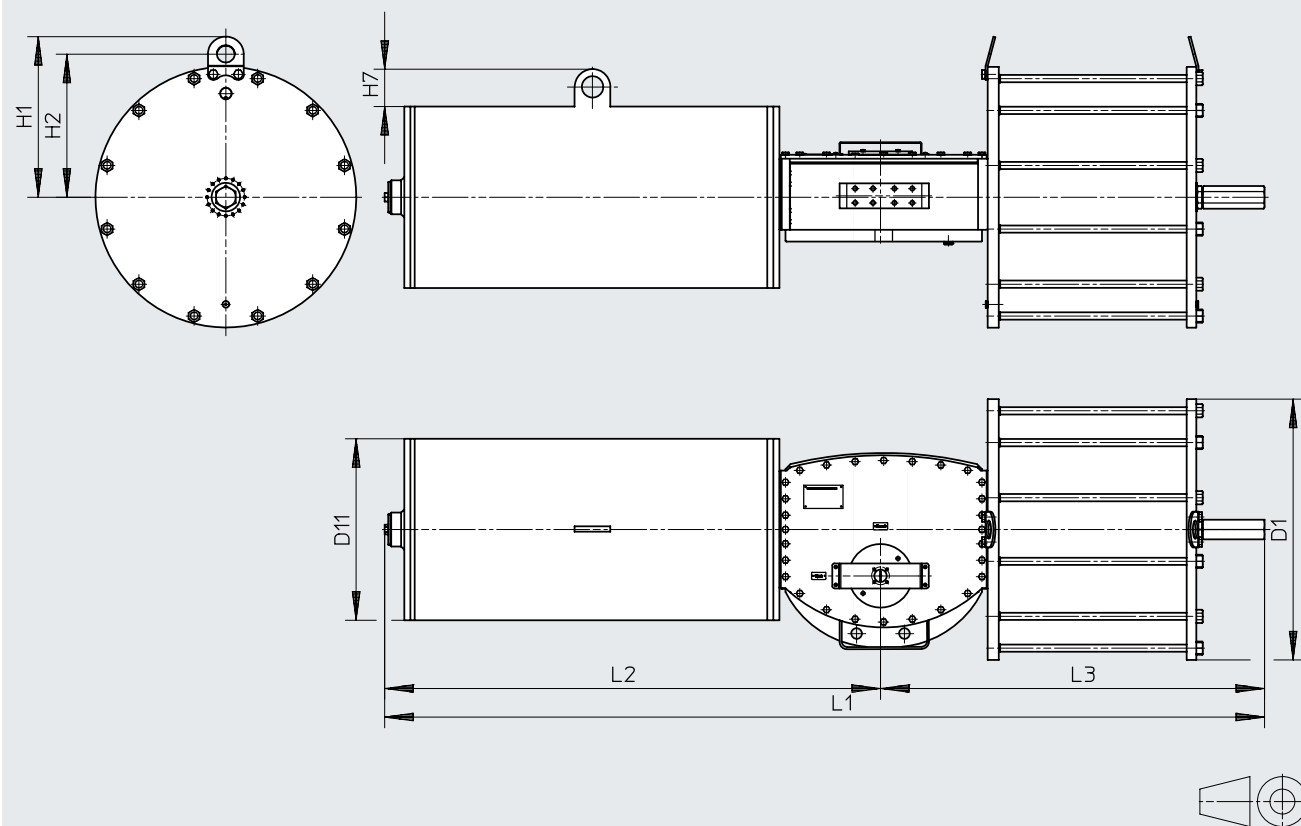
DFPD-HD-18000-...	D1 ø	D11 ø	H1	H2	H7	L1	L2	L3					
DFPD-HD-18000-385-SY-A-90-RS1-F30	470	406	323	168	85	1953	1071	882					
DFPD-HD-18000-385-SY-Y-90-RS1-F30													
DFPD-HD-18000-435-SY-A-90-RS1-F30	516		346	190									
DFPD-HD-18000-435-SY-Y-90-RS1-F30													
DFPD-HD-18000-485-SY-A-90-RS1-F30	578		376	215									
DFPD-HD-18000-485-SY-Y-90-RS1-F30													
DFPD-HD-18000-535-SY-Y-90-RS1-F30	629		401	240									
DFPD-HD-18000-585-SY-Y-90-RS1-F30	680		427	265									
DFPD-HD-18000-385-SY-A-90-RS2-F30	470		406	323					168	85	1891	1009	882
DFPD-HD-18000-385-SY-Y-90-RS2-F30													
DFPD-HD-18000-435-SY-A-90-RS2-F30	516	346		190									
DFPD-HD-18000-435-SY-Y-90-RS2-F30													
DFPD-HD-18000-485-SY-A-90-RS2-F30	578	376		215									
DFPD-HD-18000-485-SY-Y-90-RS2-F30													
DFPD-HD-18000-535-SY-Y-90-RS2-F30	629	401		240									
DFPD-HD-18000-585-SY-A-90-RS2-F25	680	427		265									
DFPD-HD-18000-585-SY-Y-90-RS2-F30													
DFPD-HD-18000-535-SY-A-90-RS3-F30	629	457		401	240	85	2037	1155	882				
DFPD-HD-18000-535-SY-Y-90-RS3-F30													
DFPD-HD-18000-585-SY-A-90-RS3-F30	680		427	265									
DFPD-HD-18000-585-SY-Y-90-RS3-F30													
DFPD-HD-18000-535-SY-A-90-RS4-F30	629		401	240									
DFPD-HD-18000-535-SY-Y-90-RS4-F30													
DFPD-HD-18000-585-SY-A-90-RS4-F30	680		427	265									
DFPD-HD-18000-585-SY-Y-90-RS4-F30													

Datasheet – Swivel direction right

Dimensions

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Size 32000



Datasheet – Swivel direction right

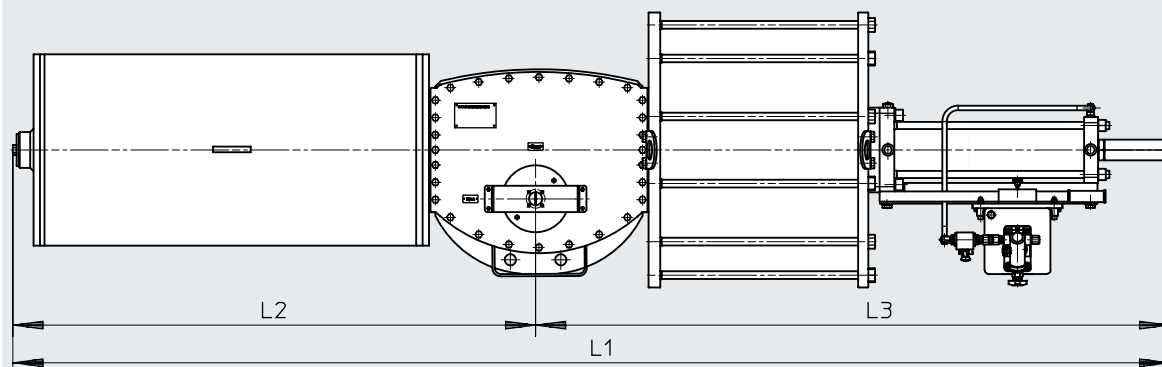
DFPD-HD-32000-...	D1 ∅	D11 ∅	H1	H2	H7	L1	L2	L3
DFPD-HD-32000-435-SY-A-90-RS1-F35	516	508	346	190	105	2462	1387	1075
DFPD-HD-32000-435-SY-Y-90-RS1-F35								
DFPD-HD-32000-485-SY-A-90-RS1-F35	578		376	215				
DFPD-HD-32000-485-SY-Y-90-RS1-F35								
DFPD-HD-32000-535-SY-A-90-RS1-F35	629		401	240				
DFPD-HD-32000-535-SY-Y-90-RS1-F35								
DFPD-HD-32000-585-SY-A-90-RS1-F35	680		427	265				
DFPD-HD-32000-585-SY-Y-90-RS1-F35								
DFPD-HD-32000-635-SY-A-90-RS1-F35	730		450	290				
DFPD-HD-32000-635-SY-Y-90-RS1-F35								
DFPD-HD-32000-385-SY-A-90-RS2-F35	470		323	168				
DFPD-HD-32000-385-SY-Y-90-RS2-F35								
DFPD-HD-32000-435-SY-Y-90-RS2-F35	516		346	190				
DFPD-HD-32000-435-SY-A-90-RS2-F35								
DFPD-HD-32000-485-SY-A-90-RS2-F35	578		376	215				
DFPD-HD-32000-485-SY-Y-90-RS2-F35								
DFPD-HD-32000-535-SY-A-90-RS2-F35	629		401	240				
DFPD-HD-32000-535-SY-Y-90-RS2-F35								
DFPD-HD-32000-585-SY-A-90-RS2-F35	680		427	265				
DFPD-HD-32000-585-SY-Y-90-RS2-F35								
DFPD-HD-32000-635-SY-A-90-RS2-F35	730		450	290				
DFPD-HD-32000-635-SY-Y-90-RS2-F35								
DFPD-HD-32000-685-SY-Y-90-RS2-F35	780		475	315				
DFPD-HD-32000-485-SY-A-90-RS3-F35	578		376	215				
DFPD-HD-32000-485-SY-Y-90-RS3-F35								
DFPD-HD-32000-535-SY-A-90-RS3-F35	629		401	240				
DFPD-HD-32000-535-SY-Y-90-RS3-F35								
DFPD-HD-32000-585-SY-A-90-RS3-F35	680		427	265				
DFPD-HD-32000-585-SY-Y-90-RS3-F35								
DFPD-HD-32000-635-SY-A-90-RS3-F35	730		450	290				
DFPD-HD-32000-635-SY-Y-90-RS3-F35								
DFPD-HD-32000-685-SY-A-90-RS3-F35	780		475	315				
DFPD-HD-32000-685-SY-Y-90-RS3-F35								
DFPD-HD-32000-735-SY-Y-90-RS3-F35	830	500	340					
DFPD-HD-32000-735-SY-A-90-RS3-F35								
DFPD-HD-32000-535-SY-A-90-RS4-F35	629	401	240					
DFPD-HD-32000-535-SY-Y-90-RS4-F35								
DFPD-HD-32000-585-SY-A-90-RS4-F35	680	427	265					
DFPD-HD-32000-585-SY-Y-90-RS4-F35								
DFPD-HD-32000-635-SY-A-90-RS4-F35	730	450	290					
DFPD-HD-32000-635-SY-Y-90-RS4-F35								
DFPD-HD-32000-685-SY-A-90-RS4-F35	780	475	315					
DFPD-HD-32000-685-SY-Y-90-RS4-F35								
DFPD-HD-32000-735-SY-A-90-RS4-F35	830	500	340					
DFPD-HD-32000-735-SY-Y-90-RS4-F35								

Datasheet – Swivel direction right, with manual override, hydraulically supported

Dimensions

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Size 9000



DFPD-HD-9000-...	L1	L2	L3
DFPD-HD-9000-280-SY-A-90-RS1-F25-HP	2225	896	1329
DFPD-HD-9000-280-SY-Y-90-RS1-F25-HP			
DFPD-HD-9000-335-SY-A-90-RS1-F25-HP			
DFPD-HD-9000-335-SY-Y-90-RS1-F25-HP			
DFPD-HD-9000-385-SY-A-90-RS1-F25-HP			
DFPD-HD-9000-385-SY-Y-90-RS1-F25-HP			
DFPD-HD-9000-435-SY-A-90-RS1-F25-HP	2296	967	
DFPD-HD-9000-435-SY-Y-90-RS1-F25-HP			
DFPD-HD-9000-335-SY-Y-90-RS2-F25-HP			
DFPD-HD-9000-335-SY-A-90-RS2-F25-HP			
DFPD-HD-9000-385-SY-A-90-RS2-F25-HP			
DFPD-HD-9000-385-SY-Y-90-RS2-F25-HP			
DFPD-HD-9000-435-SY-A-90-RS2-F25-HP	2269	940	
DFPD-HD-9000-435-SY-Y-90-RS2-F25-HP			
DFPD-HD-9000-335-SY-Y-90-RS3-F25-HP			
DFPD-HD-9000-335-SY-A-90-RS3-25-HP			
DFPD-HD-9000-385-SY-A-90-RS3-F25-HP			
DFPD-HD-9000-385-SY-Y-90-RS3-F25-HP			
DFPD-HD-9000-435-SY-A-90-RS3-F25-HP	2333	1004	
DFPD-HD-9000-435-SY-Y-90-RS3-F25-HP			
DFPD-HD-9000-385-SY-Y-90-RS4-F25-HP			
DFPD-HD-9000-385-SY-A-90-RS4-F25-HP			
DFPD-HD-9000-435-SY-A-90-RS4-F25-HP			
DFPD-HD-9000-435-SY-Y-90-RS4-F25-HP			

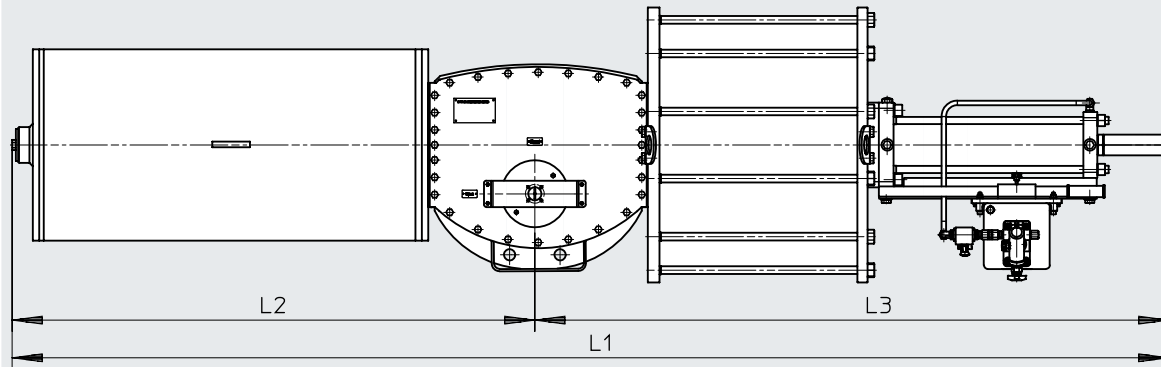


Datasheet – Swivel direction right, with manual override, hydraulically supported

Dimensions

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Size 18000



DFPD-HD-18000-...	L1	L2	L3
DFPD-HD-18000-385-SY-A-90-RS1-F30-HP	2440	1071	1369
DFPD-HD-18000-385-SY-Y-90-RS1-F30-HP			
DFPD-HD-18000-435-SY-A-90-RS1-F30-HP			
DFPD-HD-18000-435-SY-Y-90-RS1-F30-HP			
DFPD-HD-18000-485-SY-A-90-RS1-F30-HP			
DFPD-HD-18000-485-SY-Y-90-RS1-F30-HP			
DFPD-HD-18000-535-SY-Y-90-RS1-F30-HP			
DFPD-HD-18000-585-SY-Y-90-RS1-F30-HP			
DFPD-HD-18000-385-SY-Y-90-RS2-F30-HP	2378	1009	1369
DFPD-HD-18000-385-SY-A-90-RS2-F30-HP			
DFPD-HD-18000-435-SY-A-90-RS2-F30-HP			
DFPD-HD-18000-435-SY-Y-90-RS2-F30-HP			
DFPD-HD-18000-485-SY-A-90-RS2-F30-HP			
DFPD-HD-18000-485-SY-Y-90-RS4-F30-HP			
DFPD-HD-18000-535-SY-A-90-RS2-F30-HP			
DFPD-HD-18000-535-SY-Y-90-RS2-F30-HP			
DFPD-HD-18000-585-SY-A-90-RS2-F30-HP	2524	1155	1369
DFPD-HD-18000-585-SY-Y-90-RS2-F30-HP			
DFPD-HD-18000-535-SY-A-90-RS3-F30-HP			
DFPD-HD-18000-535-SY-Y-90-RS3-F30-HP			
DFPD-HD-18000-585-SY-A-90-RS3-F30-HP			
DFPD-HD-18000-585-SY-Y-90-RS3-F30-HP			
DFPD-HD-18000-535-SY-A-90-RS4-F30-HP			
DFPD-HD-18000-535-SY-Y-90-RS4-F30-HP			
DFPD-HD-18000-585-SY-A-90-RS4-F30-HP	2466	1097	1369
DFPD-HD-18000-585-SY-Y-90-RS4-F30-HP			

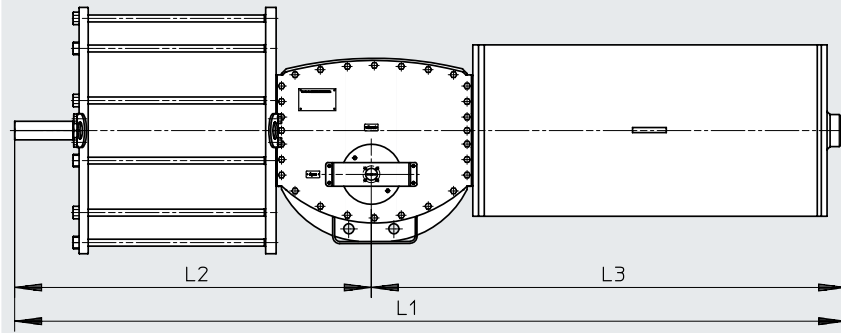


Datasheet – Swivel direction left

Dimensions

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Size 9000



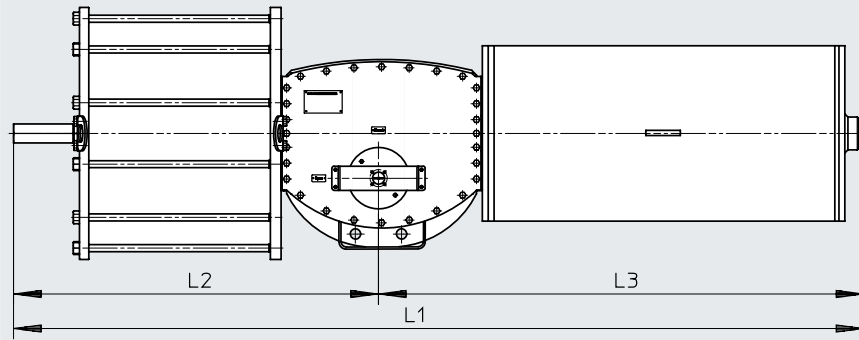
DFPD-HD-9000-...	L1	L2	L3
DFPD-HD-9000-280-SY-Y-90-LS1-F25	1742	826	916
DFPD-HD-9000-335-SY-Y-90-LS1-F25			
DFPD-HD-9000-385-SY-Y-90-LS1-F25			
DFPD-HD-9000-435-SY-Y-90-LS1-F25			
DFPD-HD-9000-335-SY-Y-90-LS2-F25	1813		987
DFPD-HD-9000-385-SY-Y-90-LS2-F25			
DFPD-HD-9000-435-SY-Y-90-LS2-F25			
DFPD-HD-9000-335-SY-Y-90-LS3-F25	1786		960
DFPD-HD-9000-385-SY-Y-90-LS3-F25			
DFPD-HD-9000-435-SY-Y-90-LS3-F25	1850		1024
DFPD-HD-9000-385-SY-Y-90-LS4-F25			
DFPD-HD-9000-435-SY-Y-90-LS4-F25			

Datasheet – Swivel direction left

Dimensions

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Size 18000



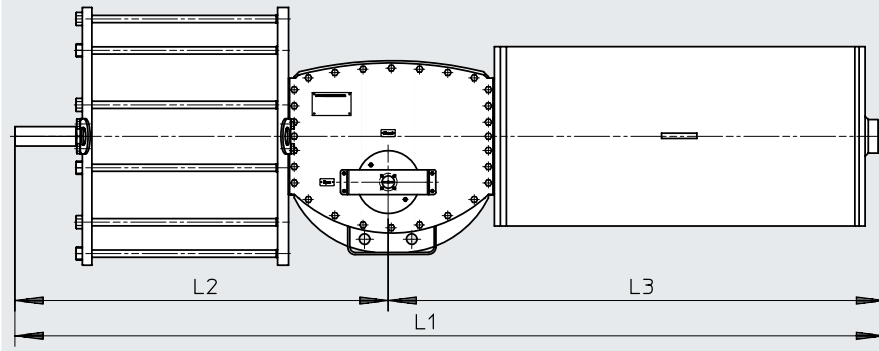
DFPD-HD-18000-...	L1	L2	L3
DFPD-HD-18000-385-SY-Y-90-LS1-F30	1959	859	1100
DFPD-HD-18000-435-SY-Y-90-LS1-F30			
DFPD-HD-18000-485-SY-Y-90-LS1-F30			
DFPD-HD-18000-535-SY-Y-90-LS1-F30			
DFPD-HD-18000-585-SY-Y-90-LS1-F30	1897	859	1038
DFPD-HD-18000-385-SY-Y-90-LS2-F30			
DFPD-HD-18000-435-SY-Y-90-LS2-F30			
DFPD-HD-18000-485-SY-Y-90-LS2-F30			
DFPD-HD-18000-535-SY-Y-90-LS2-F30	2043	859	1184
DFPD-HD-18000-585-SY-Y-90-LS2-F30			
DFPD-HD-18000-535-SY-Y-90-LS3-F30			
DFPD-HD-18000-585-SY-Y-90-LS3-F30			
DFPD-HD-18000-535-SY-Y-90-LS4-F30	1985	859	1126
DFPD-HD-18000-585-SY-Y-90-LS4-F30			

Datasheet – Swivel direction left

Dimensions

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Size 32000



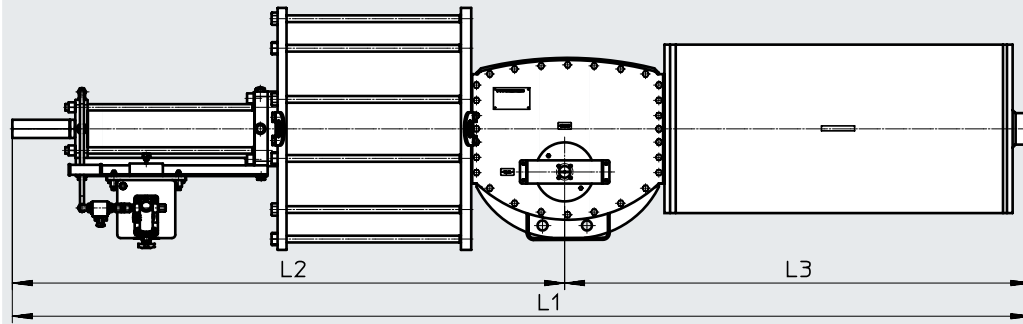
DFPD-HD-32000-...	L1	L2	L3
DFPD-HD-32000-435-SY-Y-90-LS1-F35	2462	1057	1405
DFPD-HD-32000-485-SY-Y-90-LS1-F35			
DFPD-HD-32000-535-SY-Y-90-LS1-F35			
DFPD-HD-32000-585-SY-Y-90-LS1-F35			
DFPD-HD-32000-635-SY-Y-90-LS1-F35			
DFPD-HD-32000-385-SY-Y-90-LS2-F35			
DFPD-HD-32000-435-SY-Y-90-LS2-F35			
DFPD-HD-32000-485-SY-Y-90-LS2-F35			
DFPD-HD-32000-535-SY-Y-90-LS2-F35			
DFPD-HD-32000-585-SY-Y-90-LS2-F35			
DFPD-HD-32000-635-SY-Y-90-LS2-F35	2413	1057	1356
DFPD-HD-32000-685-SY-Y-90-LS2-F35			
DFPD-HD-32000-485-SY-Y-90-LS3-F35			
DFPD-HD-32000-535-SY-Y-90-LS3-F35			
DFPD-HD-32000-585-SY-Y-90-LS3-F35			
DFPD-HD-32000-635-SY-Y-90-LS3-F35			
DFPD-HD-32000-685-SY-Y-90-LS3-F35	2521	1057	1464
DFPD-HD-32000-735-SY-Y-90-LS3-F35			
DFPD-HD-32000-535-SY-Y-90-LS4-F35			
DFPD-HD-32000-585-SY-Y-90-LS4-F35			
DFPD-HD-32000-635-SY-Y-90-LS4-F35			
DFPD-HD-32000-685-SY-Y-90-LS4-F35			
DFPD-HD-32000-735-SY-Y-90-LS4-F35			

Datasheet – Swivel direction left, with manual override, hydraulically supported

Dimensions

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Size 9000



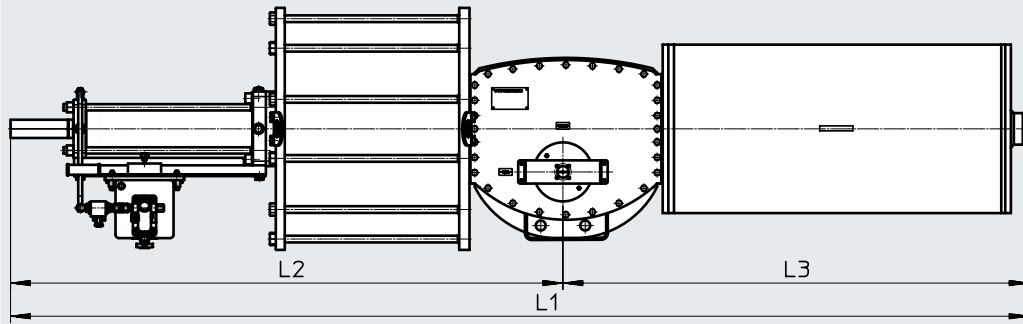
DFPD-HD-9000-...	L1	L2	L3
DFPD-HD-9000-280-SY-Y-90-LS1-F25-HP	2225	1309	916
DFPD-HD-9000-335-SY-Y-90-LS1-F25-HP			
DFPD-HD-9000-385-SY-Y-90-LS1-F25-HP			
DFPD-HD-9000-435-SY-Y-90-LS1-F25-HP	2296		987
DFPD-HD-9000-335-SY-Y-90-LS2-F25-HP			
DFPD-HD-9000-385-SY-Y-90-LS2-F25-HP			
DFPD-HD-9000-435-SY-Y-90-LS2-F25-HP	2269		960
DFPD-HD-9000-335-SY-Y-90-LS3-F25-HP			
DFPD-HD-9000-385-SY-Y-90-LS3-F25-HP			
DFPD-HD-9000-435-SY-Y-90-LS3-F25-HP	2333		1024
DFPD-HD-9000-385-SY-Y-90-LS4-F25-HP			
DFPD-HD-9000-435-SY-Y-90-LS4-F25-HP			

Datasheet – Swivel direction left, with manual override, hydraulically supported

Dimensions

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Size 18000



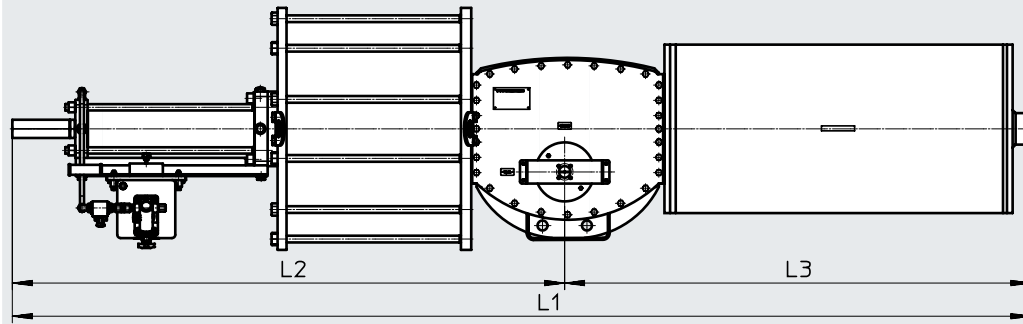
Type DFPD-HD-18000-...	L1	L2	L3
DFPD-HD-18000-385-SY-Y-90-LS1-F30-HP	2440	1340	1100
DFPD-HD-18000-435-SY-Y-90-LS1-F30-HP			
DFPD-HD-18000-485-SY-Y-90-LS1-F30-HP			
DFPD-HD-18000-535-SY-Y-90-LS1-F30-HP			
DFPD-HD-18000-585-SY-Y-90-LS1-F30-HP			
DFPD-HD-18000-385-SY-Y-90-LS2-F30-HP	2378		1038
DFPD-HD-18000-435-SY-Y-90-LS2-F30-HP			
DFPD-HD-18000-485-SY-Y-90-LS2-F30-HP			
DFPD-HD-18000-535-SY-Y-90-LS2-F30-HP			
DFPD-HD-18000-585-SY-Y-90-LS2-F30-HP			
DFPD-HD-18000-535-SY-Y-90-LS3-F30-HP	2524	1184	
DFPD-HD-18000-585-SY-Y-90-LS3-F30-HP	2466		1126

Datasheet – Swivel direction left, with manual override, hydraulically supported

Dimensions

Size 32000

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Datasheet – Swivel direction left, with manual override, hydraulically supported

DFPD-HD-32000-...	L1	L2	L3
DFPD-HD-32000-435-SY-Y-90-LS1-F35-HP	3070	1665	1405
DFPD-HD-32000-485-SY-Y-90-LS1-F35-HP			
DFPD-HD-32000-535-SY-Y-90-LS1-F35-HP			
DFPD-HD-32000-585-SY-Y-90-LS1-F35-HP			
DFPD-HD-32000-635-SY-Y-90-LS1-F35-HP			
DFPD-HD-32000-435-SY-Y-90-LS2-F35-HP			
DFPD-HD-32000-485-SY-Y-90-LS2-F35-HP			
DFPD-HD-32000-535-SY-Y-90-LS2-F35-HP			
DFPD-HD-32000-585-SY-Y-90-LS2-F35-HP			
DFPD-HD-32000-635-SY-Y-90-LS2-F35-HP			
DFPD-HD-32000-685-SY-Y-90-LS2-F35-HP	3021	1665	1356
DFPD-HD-32000-485-SY-Y-90-LS3-F35-HP			
DFPD-HD-32000-535-SY-Y-90-LS3-F35-HP			
DFPD-HD-32000-585-SY-Y-90-LS3-F35-HP			
DFPD-HD-32000-635-SY-Y-90-LS3-F35-HP			
DFPD-HD-32000-685-SY-Y-90-LS3-F35-HP			
DFPD-HD-32000-735-SY-Y-90-LS3-F35-HP			
DFPD-HD-32000-535-SY-Y-90-LS4-F35-HP	3129	1665	1464
DFPD-HD-32000-585-SY-Y-90-LS4-F35-HP			
DFPD-HD-32000-635-SY-Y-90-LS4-F35-HP			
DFPD-HD-32000-685-SY-Y-90-LS4-F35-HP			
DFPD-HD-32000-735-SY-Y-90-LS4-F35-HP			