

# Kinetrol D-Line Lever Operated Damped Manual Fail-Safe

The D-Line range are specially developed damped manual fail-safe lever-operated units designed to safely operate valves manually whilst ensuring certainty of position when unattended.

Two options are available: our standard range and our torque multiplier range. The standard range is available as Models 07, 08 and 09, with either a 90° input to 90° output or a 180° input to 180° output. The torque multiplier range adds the Model 10 and comes with a shorter handle length, but is only available as 180° input to 90° output.

Both ranges have the following features:

- Manual unit, cannot be left in the wrong position
- Reliable torque delivery for valve reseal
- ATEX as standard
- All units sealed to IP65 to protect from internal corrosion
- Safe and easy manual lever operation using Kinetrol's energy dissipating rotary dashpot damping units
- Designed to meet valve standards: API 6D / S562 (JIP33) / BSEN13942
- Energy limited to 10 joules (adjustable as required)



Standard Unit



Torque Multiplier Unit



ATEX Up to Category 2

## Standard Range

### Application

The standard D-line lever operated damped manual fail-safe units use Kinetrol's highly reliable, low stress range, clock type spring linked with our dashpot to ensure the safe controlled return of the valve to its start position. The units are available as either 90° lever input with 90° spring action (clockwise or counter clockwise) or as 180° lever input with 180° spring action (clockwise or counter clockwise).

### Specification

#### Materials of Construction

**Spring case:** Diecast aluminium alloy - epoxy thermoset powder coating

**Clock type spring:** Carbon spring steel

**Energy-dissipating dashpots:** Zinc alloy

**Shafts:** Stainless steel or zinc plated carbon steel

**Locking plate:** Mild steel - epoxy thermoset powder coating

**Manual lever:** Stainless steel

#### Operating Temperature

**Standard:** -40°C to 80°C (-40°F to 176°F)



# Kinetrol D-Line Lever Operated Damped Manual Fail-Safe Standard Range (continued)

## Part Numbers / Torques / Weights

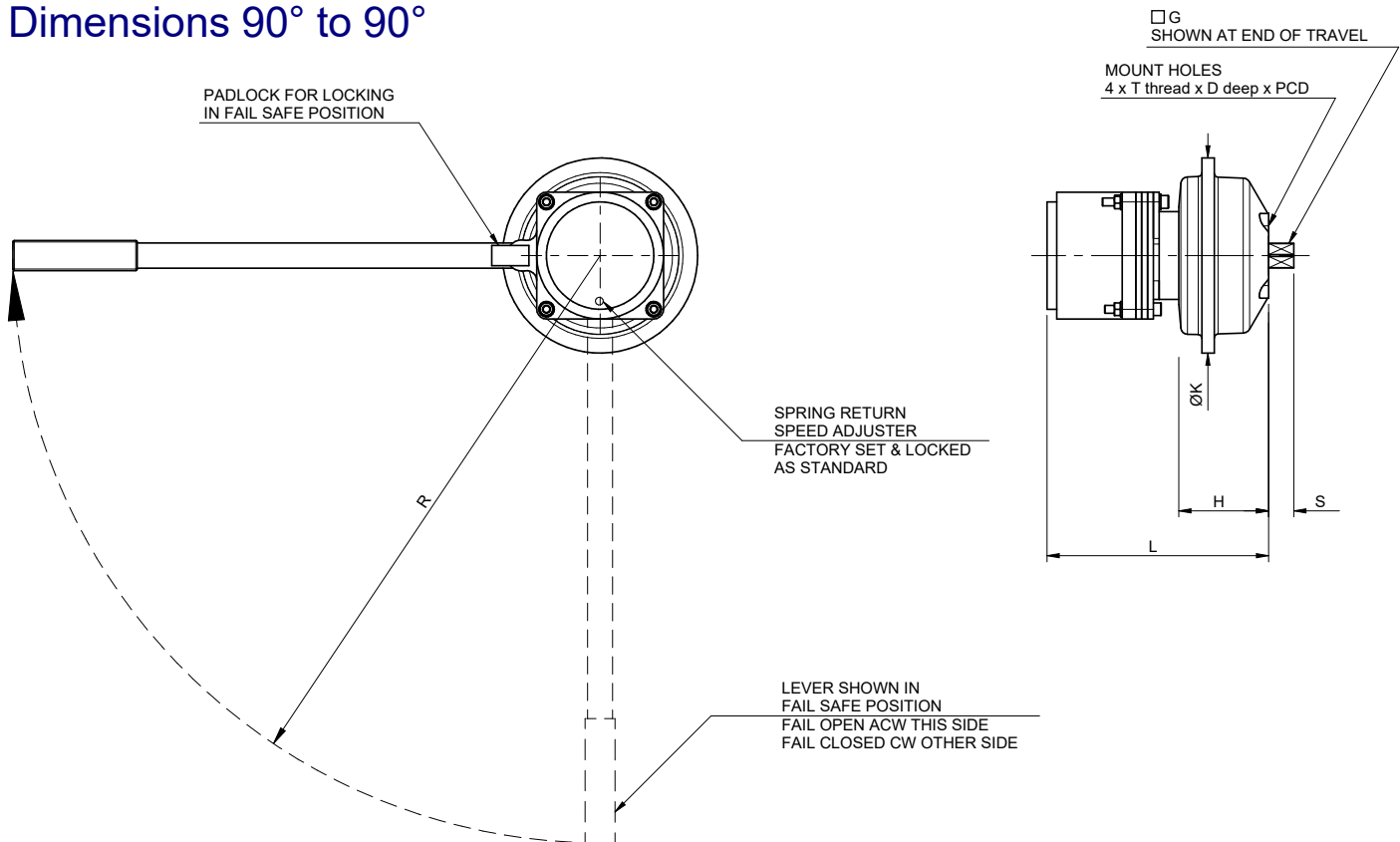
Metric				Imperial			
Model	Lever Rotation Input to Output	Maximum Allowable Valve Torque ** (Nm)	Weight (kg)	Model	Lever Rotation Input to Output	Maximum Allowable Valve Torque ** (lbf-in)	Weight (lb)
074-M203	90° to 90°	42.4	7.2	077-M203	90° to 90°	375	15.9
084-M203	90° to 90°	65.5	13.7	087-M203	90° to 90°	580	30.1
094-M203	90° to 90°	93.8	15.7	097-M203	90° to 90°	830	34.5
074-M201	180° to 180°	42.4	7.2	077-M201	180° to 180°	375	15.9
084-M201	180° to 180°	65.5	13.7	087-M201	180° to 180°	580	30.1
094-M201	180° to 180°	93.8	15.7	097-M201	180° to 180°	830	34.5

\*\* maximum allowable valve torque will not exceed 360 N lever pull force as per API 6D / S-562 requirements.

The direction of the spring action and unit is determined by looking from above with the mounting face at the bottom. Suffix M20 - clockwise, suffix M30 - counter clockwise.

Female options available.

## Dimensions 90° to 90°



### Metric Units (mm)

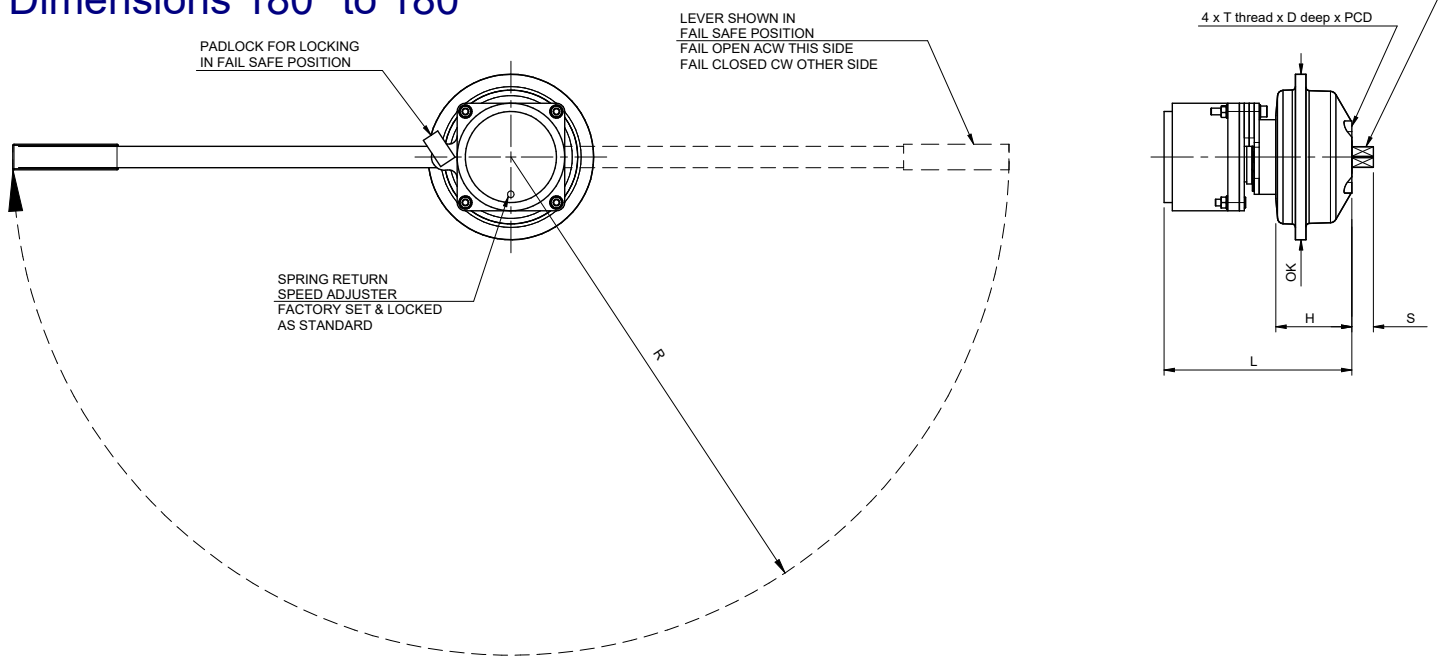
Model	L	H	ØK	□G	S	R	T	D	PCD
074-M203	186	82	152	16	20	300	M8	16	50.9
084-M203	222	87	174	17	19	500	M8	16	70.0
094-M203	227	92	200	19	26	600	M10	20	65.0

### English Units (in)

Model	L	H	ØK	□G	S	R	T	D	PCD
077-M203	7.3	3.23	6.00	0.630	0.79	11.8	5/16-18 UNC	0.63	2.00
087-M203	8.7	3.43	6.85	0.669	0.75	19.7	5/16-18 UNC	0.63	2.76
097-M203	8.9	3.62	7.90	0.748	1.02	26.6	3/8-16 UNC	0.79	2.56

# Kinetrol D-Line Lever Operated Damped Manual Fail-Safe Standard Range (continued)

## Dimensions 180° to 180°



### Metric Units (mm)

Model	L	H	ØK	□G	S	R	T	D	PCD
074-M201	186	82	152	16	20	300	M8	16	50.9
084-M201	222	87	174	17	19	500	M8	16	70.0
094-M201	227	92	200	19	26	600	M10	20	65.0

### English Units (in)

Model	L	H	ØK	□G	S	R	T	D	PCD
077-M201	7.3	3.23	6.00	0.630	0.79	11.8	5/16-18 UNC	0.63	2.00
087-M201	8.7	3.43	6.85	0.669	0.75	19.7	5/16-18 UNC	0.63	2.76
097-M201	8.9	3.62	7.90	0.748	1.02	26.6	3/8-16 UNC	0.79	2.56

## Torque Multiplier Range

### Application

The torque multiplied D-line lever operated damped manual fail-safe units use Kinetrol's highly reliable, low stress range, clock type spring linked with our proven torque multiplier and energy dissipating dashpot to ensure the safe controlled return of the valve to its start position.

### Specification

#### Materials of Construction

**Spring case:** Diecast aluminium alloy - epoxy thermoset powder coating

**Clock type spring:** Carbon spring steel

**Torque multiplier:** Diecast aluminium alloy - epoxy thermoset powder coating

**Energy-dissipating dashpots:** Zinc alloy

**Shafts:** Stainless steel or zinc plated carbon steel

**Locking plate:** Mild steel - epoxy thermoset powder coating

**Manual lever:** Stainless steel

#### Operating Temperature

**Standard:** -40°C to 80°C (-40°F to 176°F)



# Kinetrol D-Line Lever Operated Damped Manual Fail-Safe Torque Multiplier Range (continued)

## Models

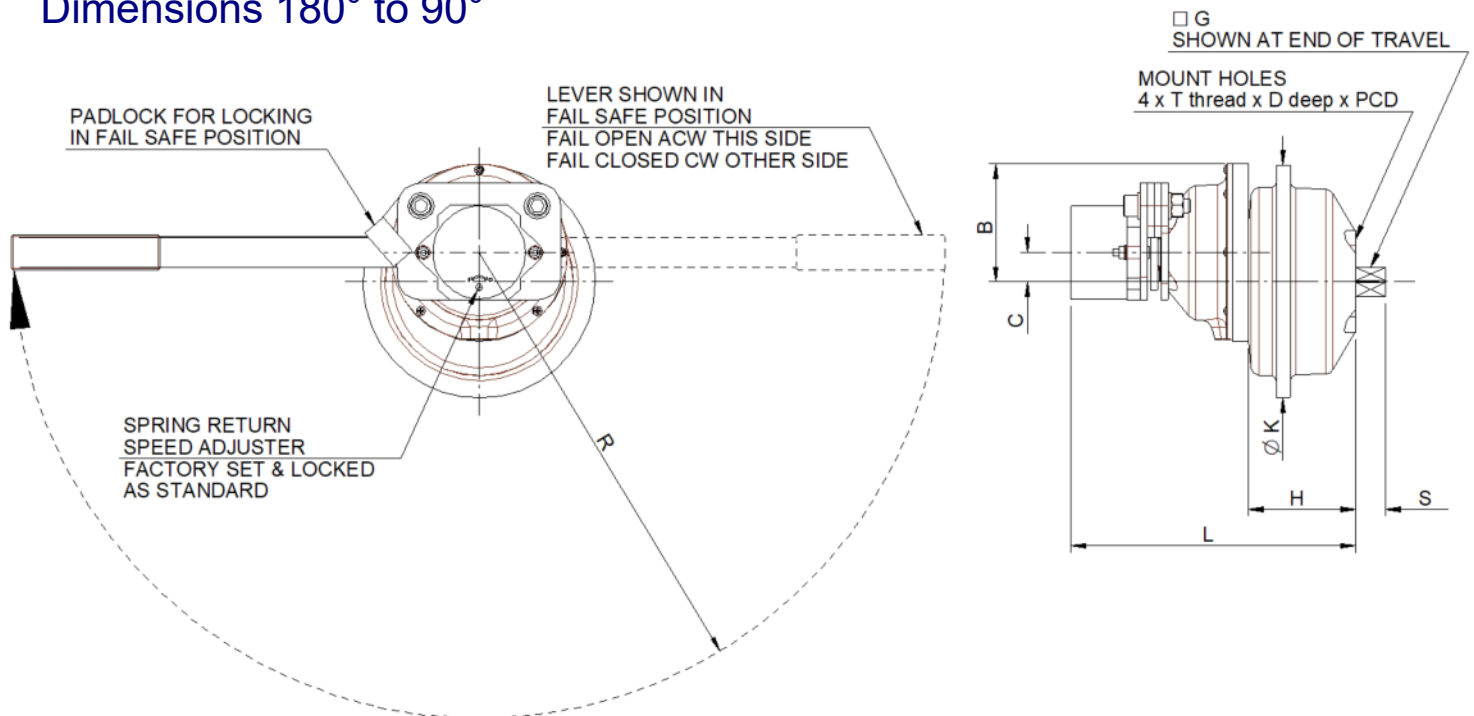
Metric			Imperial		
Model	Maximum Allowable Valve Torque ** (Nm)	Weight (kg)	Model	Maximum Allowable Valve Torque ** (lbf ins)	Weight (lb)
074-M20-P	42.4	10	077-M20-P	375	22.05
084-M20-P	65.5	12	087-M20-P	580	26.50
094-M20-P	93.8	14	097-M20-P	830	30.85
103FM20-P	143.0	28	107-M20-P	1270	61.75

\*\* maximum allowable valve torque will not exceed 360 N lever pull force as per API 6D / S-562 requirements.

The direction of the spring action and unit is determined by looking from above with the mounting face at the bottom. Suffix M20 - clockwise, suffix M30 - counter clockwise.

Female options available.

## Dimensions 180° to 90°



### Metric Units (mm)

Model	L	H	ØK	□G	S	B	C	R	T	D	PCD
074	235	82	152	16	20	101	25	200	M8	16	50.9
084	240	87	174	17	19	101	25	300	M8	16	70.0
094	245	92	200	19	26	101	25	400	M10	20	65.0
103	326	110	206	22	26	138	35	600	M10	16	102.0

### English Units (in)

Model	L	H	ØK	□G	S	B	C	R	T	D	PCD
077	9.3	3.23	6.00	0.630	0.79	4.0	1.0	7.9	5/16-18 UNC	0.63	2.00
087	9.5	3.43	6.85	0.669	0.75	4.0	1.0	11.8	5/16-18 UNC	0.63	2.76
097	9.6	3.62	7.90	0.748	1.02	4.0	1.0	15.8	3/8-16 UNC	0.79	2.58
107	12.8	4.33	8.11	0.866	1.02	5.4	1.4	23.6	3/8-16 UNC	0.63	4.02