

## Specifications

Max. working pressure	170 bar
Weight	450 kg
Working volume	199 L
Total volume	212 L
Max. cyl. load (start tipping)	515 kN
Max. cyl. load (end of stroke) <sup>2</sup>	199 kN
Max. cyl. load (end of stroke) <sup>3</sup>	232 kN

## Max. pump flow

With KO <sup>1</sup>	220 L/min
Without KO <sup>1</sup>	190 L/min
With KO <sup>1</sup> below -20°C	154 L/min
Without KO <sup>1</sup> below -20°C	133 L/min

## Tipping time

With KO <sup>1</sup>	54 sec
Without KO <sup>1</sup>	63 sec
With KO <sup>1</sup> below -20°C	77 sec
Without KO <sup>1</sup> below -20°C	90 sec
Allowable lowering time	43 sec

Extension	1	2	3	4	5	6	7	Total
Effective diameter [mm]	214	191	169	149				7620
Stroke* [mm]	1890	1910	1910	1910				

## Technical notes

- This cylinder is a lifting device only. • It should not be used as a structural member and should not be subjected to side loads. • Tipping valve must have a pressure relief at the cylinder port set not higher than max. working pressure. • Verify max. cyl. load. • Working temperature range is between -40°C and +80°C. • Max. duration of extension is 0.5 hours (excluded hard chromed stages). • Cylinder is painted black (RAL9005) with a min. thickness conforming to the 480 hours neutral salt spray test as per ISO 9227. • <sup>1</sup> Hyva knock-off. • <sup>2</sup> Unsubstantial unloading (sticky load). • <sup>3</sup> Substantial unloading.

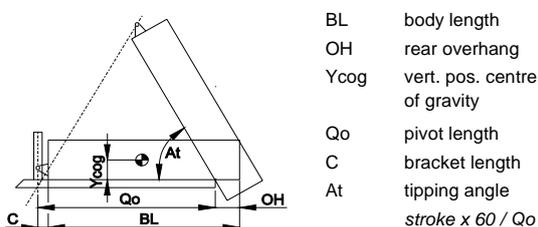
## Related documentation

Bracket options: 015BRA10 & 015BRA13

Mounting instructions: CYL-0031

Oil specifications: OIL-0011  
Spec sheet explanation: CYL-0041

## Tipping weight

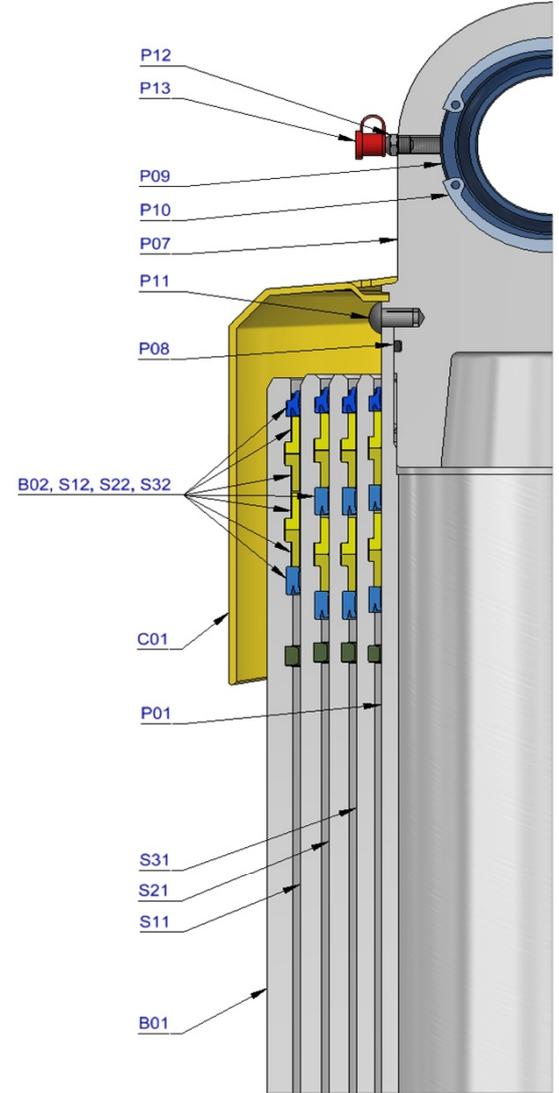


BL [mm] OH [mm] At [°]	10000			9800			9600		
	200	500	800	200	500	800	200	500	800
Ycog [mm]	46	47	49	47	49	50	48	50	52
Ycog [mm]	77	81	86	77	82	87	78	83	88
C	600	77	81	86	77	82	87	78	83
At	900	80	85	91	81	86	93	82	88
stroke x 60 / Qo	1200	84	90	97	86	92	99	87	94

Tipping weight [ton] at maximum pressure of 170 bar for a vertically mounted cylinder and C is 158 mm

For detailed tipping calculations please refer to: <https://tipper.hyva.com>

Pos.	Part no.	Description	Qty.
C01	71839149	DUST COVER FE 202-4/214-4	1
P01	74415921	PISTON FL2 S 149-2195-HD-HC	1
P02	71807151 K	SLIDER FL 149 A35	1
P03	71851149 K	OUTER STOPRING FL 149 A22	2
P04	71822720	BOTTOM PLATE PISTON FL 149 MK2 HD	1
P05	01745057 K	CIRCLIP 135 DIN 472 (142.0x4.0)	1
P06	71870230 K	O-RING PISTON BOTTOM 149	1
P07	71847501	PISTON EYE SPH. FL 149 MK2 L=075 GR	1
P08	71870130 K	O-RING 129.77 X 3.53 MM	1
P09	01770090 K	SPHERICAL BEARING D.60 DO GREASED	1
P10	01770580 K	CIRCLIP 90 DIN 472 (95.5x3.5)	1
P11	71875012	PIN ROUND HEAD GROOVED 8x15 mm	2
P12	56288044 K	GREASE NIPPLE M8x1 DIN 71412	1
P13	01317670 K	GREASER PROTECTION CAP	1

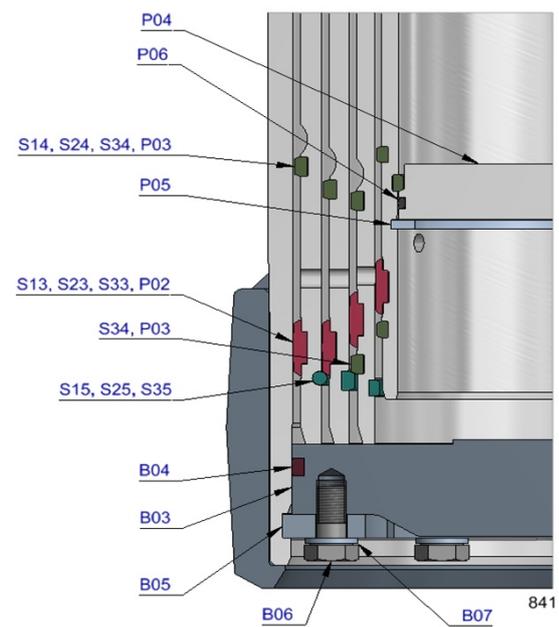


S31	74616920	STAGE FL2 169-2190-HD	1
S32	71808169 K	PACKSET FL 169 TANDEM SEAL	1
S33	71807171 K	SLIDER FL 169 A35	1
S34	71851169 K	OUTER STOPRING FL 169 A22	2
S35	71852169 K	LIFTRING FL 169 A22	1

S21	74617920	STAGE FL2 191-2190-HD	1
S22	71808191 K	PACKSET FL 191 TANDEM SEAL	1
S23	71807193 K	SLIDER FL 191 A35	1
S24	71851191 K	OUTER STOPRING FL 191 A22	1
S25	71852191 K	LIFTRING FL 191 A22	1

S11	74618920	STAGE FL2 214-2190-HD	1
S12	71808214 K	PACKSET FL 214 TANDEM SEAL	1
S13	71807216 K	SLIDER FL 214 A35	1
S14	71851214 K	OUTER STOPRING FL 214 A22	1
S15	71813214 K	LIFTRING FL 214x6	1

B01	74519928	BASE FL2 238-2241-4/4BSAE-700-HD	1
B02	71802238 K	PACKSET FL 238	1
B03	71825440	BOTTOM PLATE FL2 238	1
B04	71870050 K	SEAL BOTTOM PLATE FL 238	1
B05	71820238	LOCKING PLATE FL 238	3
B06	01732020 K	BOLT HEX M12X25X1.25 SET 6 PCS	1
B07	01732523 K	WASHER SPRING M12 SET 6 PCS	1



### Seal kit complete

	71908841 K	Consists of all packsets with packset grease and O-rings	
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### Notes

The inner stopring is pre-mounted in the grooves on spare bases and stages. Therefore, when ordering new tubes, it is not required to order inner stoprings separately.