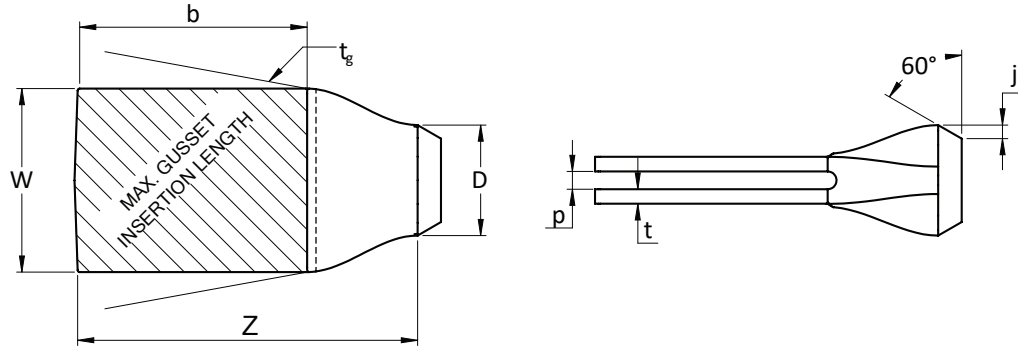


CASTCONNEX[®]

High Strength Connectors™ (HSC)

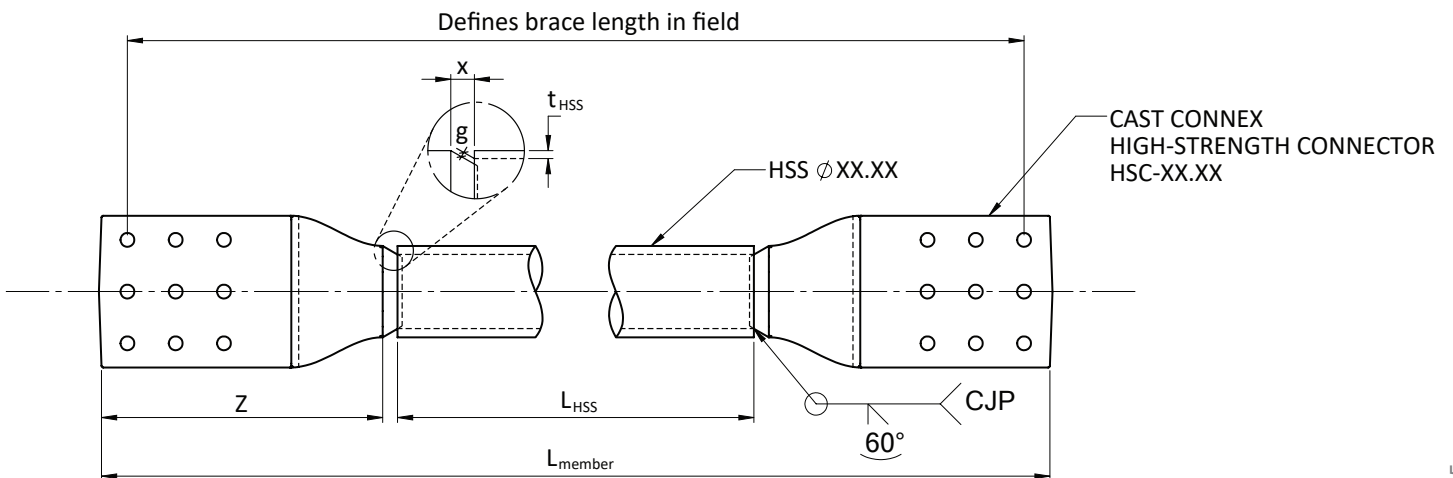
Nominal Connector Dimensions



	Z [in]	D [in]	b [in]	w [in]	t [in]	t _g [in]	p _{min} [in]	p _{max} [in]	j [in]	Unit Weight* [lb]
HSC-4.000	14 1/4	4	10	7	1/2	1/2	9/16	5/8	19/32	37
HSC-5.563	19 1/16	5 9/16	13	9	5/8	3/4	13/16	7/8	19/32	84
HSC-6.625	20 3/8	6 5/8	13	11	7/8	1	1 1/16	1 1/8	25/32	150
HSC-8.625	27 1/8	8 5/8	18	14	1	1 1/4	1 5/16	1 3/8	7/8	301
HSC-10.75	25 5/8	10 3/4	16	16	1 1/4	1 1/2	1 9/16	1 5/8	7/8	423
HSC-12.75	27 3/4	12 3/4	17	19	1 1/4	1 3/4	1 13/16	1 7/8	7/8	608
HSC-14.00	29 3/4	14	17	19	1 1/2	1 3/4	1 13/16	1 7/8	7/8	788

*Unit weight does not include fasteners

Typical Assembly



Estimating required length of HSS:

$$L_{HSS} = L_{member} - 2(Z + X)$$

$$X = 2g + \sqrt{3}(t_{HSS})$$

When using these equations to estimate the length of the HSS or Pipe required (L_{HSS}) for a given element, note that the actual HSS or Pipe thickness (t_{HSS}) can be significantly thinner than the nominal value. Refer to the relevant HSS or Pipe specification.

Available Strength of Connectors

Load and Resistance Factor Design (LRFD)

The connector shown offers a factored strength equal to the lesser of:

- LRFD values in the table below,
- factored strength of the bolted joint between the connector and the gusset plate (see Cast Connex HSC Design Manual for pre-designed bolt patterns), and
- the factored strength of gusset plate and its associated welded joints.

Allowable Stress Design (ASD)

The connector shown offers an allowable capacity equal to the lesser of:

- ASD values in the table below,
- allowable capacity of the bolted joint between the connector and the gusset plate (see Cast Connex HSC Design Manual for pre-designed bolt patterns), and
- the allowable capacity of gusset plate and its associated welded joints.

	LRFD		ASD		I_{op}^+ [in ⁴]
	ϕT_n^* [kips]	$\phi M_{n,op}^{**}$ [k.ft]	T_n/Ω^* [kips]	$M_{n,op}/\Omega^{**}$ [k.ft]	
HSC-4.000	315	167.3	210	111.3	2.12
HSC-5.563	506	364	337	242	6.18
HSC-6.625	866	839	576	558	19.29
HSC-8.625	1260	1457	838	969	39.8
HSC-10.75	1800	2530	1198	1684	84.3
HSC-12.75	2140	3270	1422	2180	117.6
HSC-14.00	2560	4250	1710	2830	167.0

Specified minimum
yield strength
 $F_y = 50$ ksi

Specified minimum
tensile strength
 $F_u = 80$ ksi

Nominal strengths have been determined using AISC 360-22.

* T_n : Nominal tensile yielding strength:
Equal to value determined from Chapter J4.
The governing gross-section of the connector is $A_g = 2w \cdot t$

** $M_{n,op}$: Nominal out-of-plane flexural strength:
Equal to value determined from Chapter F2.
The governing plastic section modulus is $Z = w \cdot t (t + p_{min})$

+ I_{op} : Out-of-plane moment of inertia